

Public Proposals Report (PPR)

On the Development of the

2024 National Green Building Standard (NGBS)

August 18, 2023

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Forward

This is the Public Proposals Report (PPR) on the development of the 2024 edition of the National Green Building Standard (NGBS). This report summarizes the steps of the Proposed Change phase of the development of the Draft Standard for the purpose of receiving public comments on the changes made to the 2020 edition of the NGBS. The roster of the Consensus Committee at the time of approval of the Proposed Changes is included.

A formal “Call for Proposals” was released on February 4, 2022. The 60-day period for submitting Proposed Changes closed on April 5, 2022. The NGBS is maintained under “Continuous Maintenance” and although a formal call for Proposed Changes was made, Proposed Changes can be submitted any time via a web-based form posted at www.homeinnovation.com/NGBS.

After the close of the “Call for Proposals” periods, the Proposed Changes were grouped for review and recommendation by the nine task groups assembled to assist the Consensus Committee in an advisory function. The task groups met by conference call from June through August 2022. In all, 106 Proposed Changes were received from the public and 142 Proposed Changes were developed by the task groups. Proposed Changes received from the public are denoted in the Proposal Number starting with a “P” while the changes developed by the Task Groups are denoted with an “A”. Proposed Changes P013, P026, P034, P047, P079, P089, and P104 were submitted with substantiating documents which are posted with the list of proposed changes at www.HomeInnovation.com/NGBS.

The Consensus Committee held an orientation meeting via webinar on June 7, 2022 to review the schedule and other business matters for the development of the 2024 NGBS, and for the task groups to be formally assigned. On November 8-10, 2022, public hearings were held at the National Housing Center in Washington, DC. The full Consensus Committee heard public testimony, reviewed the task group recommendations, and took a Formal Action on each Proposed Change. Formal actions of “Accept” that are not accompanied by a CC reason statement are relying on the reason statement provided by the submitter of the Proposed Change.

The Ballot period on the Formal Action taken at the November meeting started on January 31, 2023, and ended on February 15, 2023. Task Group 1, comprised of the chair and vice chairs from each Task Group, was tasked with reviewing each comment and if found to be persuasive, attempting to resolve each disapprove committee action votes with comment. When a proposed resolution to a negative comment resulted in substantive change, all initial ballot votes and comments (including attempts at resolution), were recirculated to afford all Consensus Committee members an opportunity to respond, reaffirm, or change their votes. There were two recirculation phases that occurred June 14-25, 2023 and July 6-17, 2023. Comments received during the final recirculation phase which did not lead to substantive changes were not circulated to the committee but are included in this report.

A total of 27 out of 29 ballots were returned. Members not returning their ballot: Kathleen Lane and Kyle Bergeron.

Home Innovation Procedures require that the PPR includes the following information:

- (a) The roster of the consensus committee at the time of acceptance of the proposed changes and the Interest Category Classification for each member;
- (b) The availability of a Draft Standard related to the PPR;

- (c) A Call for Public Comment on the Draft Standard;
- (d) The due date for the receipt of public comments;
- (e) All proposed changes received; and
- (f) The following information on each separate proposed change:
 - a. The name of the submitter of the proposed change;
 - b. The entity represented;
 - c. The text of the proposed change;
 - d. The Formal Action taken by the consensus committee; and
 - e. Any consensus committee statement on the Formal Action.

Release of the Draft Standard. Those Proposed Changes that were Accepted or Accepted as Modified by the Consensus Committee have been incorporated in the Draft Standard posted at www.HomeInnovation.com/NGBS. These changes shown in the draft standard along with the point system are now open for public comment. Changes shown in underline or strikethrough format accompanied by a superscript (⁹) are editorial changes and are not open for public comment. Editorial changes are shown for transparency. Public comments are accepted through October 2, 2023.

Notification of Committee Action. The release of this PPR is considered notification to a submitter of a Proposed Change or related ballot comment as to the committee action or response. Any objection contained in a Proposed Change is considered resolved unless a public comment is submitted in accordance with Section 4.4.5 of the Home Innovation Research Labs *“Procedures for Consensus Developed Standards”*, or an appeal is filed in accordance with Section 5 of the Procedures. Home Innovation procedures are posted at www.HomeInnovation.com/NGBS.

Appeals. Persons who are directly and materially interested and who have been or will be adversely affected by any procedural action or inaction by the Secretariat with regard to the development of a proposed standard or the revision, reaffirmation or withdrawal of an existing standard, have the right to appeal. Appeals shall be based on compliance with or interpretation of the Home Innovation Research Labs procedures. An appeal shall be submitted by registered mail to the Standards Coordinator no later than September 17, 2023. The appeal shall identify and address the original source of the objection. The appeal shall specify the cause of the appeal, the applicable section(s) of these procedures related to the appeal, and a proposed corrective action. The appeal shall be accompanied by a filing fee of \$500.00. This fee may be waived or reduced upon sufficient evidence of hardship. Appeals will be considered by the Appeals Panel at a hearing on the premises of the Home Innovation Research Labs and shall be scheduled within 90 calendar days of receipt of the appeal by the Standards Coordinator. Please see the Home Innovation Research Labs’ Procedures for further information.

Consensus Committee Roster

Chair: Robert Ross

Vice Chair: Hope Medina

Staff Liaisons: Michelle Foster, Cindy Wasser, Elina Thapa,
Pranav Phatak

Air-Conditioning, Heating, and Refrigeration Institute, AHRI (P)

Primary Rep: Kyle Bergeron

American Gas Association, AGA - NW Natural (P)

Primary Rep: Kevin Duell

Alternate Rep: Shannon Corcoran

American Wood Council (P)

Primary Rep: Jeff Bradley

Building Quality (U)

Primary Rep: Craig Charles Conner

Cherry Hills Village, Shums Coda Associates (G)

Primary Rep: Hope Medina

Crescent Communities (U)

Primary Rep: Greg Coolidge

Edison Electric Institute (P)

Primary Rep: Steven Rosenstock

Farah Qadeer (G)

Primary Rep: Farah Qadeer

G & R Construction Services LLC (U)

Primary Rep: Robert Ross

Harford County Government (G)

Primary Rep: Richard C Truitt

Hawaii State Energy Office (G)

Primary Rep: Howard C. Wiig

National Glass Association, NGA - Birch Point Consulting (P)

Primary Rep: Thomas Culp

National Multifamily Housing Council (U)

Primary Rep: Paula Cino

Alternate Rep: Greg Johnson

Northeast Green Building Consulting, LLC (U)

Primary Rep: Joshua Robert Stack

P3 Builder Group Inc (U)

Primary Rep: John Barrows

Panasonic (P)

Primary Rep: Justin Mahley

Plastic Pipe Fitting Association, PPFA (P)

Primary Rep: Michael Cudahy

Southern Energy Management (U)

Primary Rep: Laurie Colwander

Alternate Rep: Grant Warner

Steven Winter Associates, Inc. (U)

Primary Rep: Karla Butterfield

Team WS, LLC. (U)

Primary Rep: William Sanderson

Tempo, Inc. (U)

Primary Rep: Aaron Gary

Alternate Rep: Amy Otley

The American Institute of Architects, AIA (U)

Primary Rep: Kathleen Lane

The Holt Weston Consultancy (P)

Primary Rep: Theresa Weston

U.S. Department of Energy, DOE (G)

Primary Rep: Christopher Perry

Alternate Rep: Jeremy Williams

U.S. Department of Housing and Urban Development, HUD (G)

Primary Rep: Michael Blanford

Urban Northwest Homes, LLC (U)

Primary Rep: Jerud Martin

Vinyl Siding Institute, VSI (P)

Primary Rep: Sara Krompholz

Alternate Rep: Matthew Dobson

WaterSense – U.S. Environmental Protection Agency, EPA (G)

Primary Rep: Jonah Schein

Window & Door Manufacturers Association, WDMA (P)

Primary Rep: Craig Drumheller

Alternate Rep: Cesar Lujan

Producer Interest (P)	10
User Interest (U)	12
General Interest (G)	7
Total	29

Producer Interest (P): Individuals assigned to the Producer Interest Category are those who represent the interests of an entity, including an association of such entities, which produces, installs or maintains a product, assembly or system subject to the provisions within the scope of the consensus committee. These entities included Distributor, Labor, Manufacturer, Material Association, Standards Promulgator, Testing Laboratory, and Utility.

User Interest (U): Individuals assigned to the User Interest Category are those who represent the interests of an entity, including an association of such entities, which is subject to the provisions or voluntarily utilize the provisions within the scope of the consensus committee. These entities include Builder, Contractor, Consultant, Applied Research Laboratory, Building Owner, Design Professional, Insurance Company, Private Inspection Agency, and Product Certification/Evaluation Agency.

General Interest (G): Individuals assigned to the General Interest Category are those who represent the interests of an entity, including an association of such entities, representing the general public or entities which promulgate or enforce the provisions within the scope of the consensus committee. These entities include Academia, Consumers, and Government Agencies.

Ballot 1 Results Summary

Proposal Number	Final Formal Action	Ballot 1 Results
A001	Accept	26-0-1
A002	Accept as Modified	26-0-1
A003	Disapprove	26-0-1
A004	Accept	26-0-1
A005	Disapprove	26-0-1
A006	Accept as Modified	26-0-1
A007	Accept as Modified	26-0-1
A008	Accept as Modified	25-0-2
A009	Accept as Modified	26-0-1
A010	Accept as Modified	26-0-1
A011	Accept as Modified	26-0-1
A012	Accept as Modified	26-0-1
A013	Accept as Modified	26-0-1
A014	Accept as Modified	26-0-1
A015	Disapprove	26-0-1
A016	Disapprove	26-0-1
A017	Accept as Modified	26-0-1
A018	Disapprove	26-0-1
A019	Disapprove	26-0-1
A020	Accept as Modified	26-0-1
A021	Accept	26-0-1
A022	Accept	26-0-1
A023	Accept	26-0-1
A024	Accept	26-0-1
A025	Accept as Modified	25-1-1
A026	Accept	26-0-1
A027	Disapprove	26-0-1
A028	Accept as Modified	26-0-1
A029	Accept as Modified	26-0-1
A030	Accept as Modified	26-0-1
A031	Accept as Modified	25-1-1
A032	Accept	26-0-1
A033	Accept	26-0-1
A034	Disapprove	26-0-1
A035	Accept	26-0-1
A036	Disapprove	26-0-1
A037	Disapprove	26-0-1
A038	Disapprove	26-0-1
A039	Disapprove	26-0-1
A040	Disapprove	26-0-1
A041	Accept	25-0-2
A042	Accept as Modified	26-0-1
A043	Disapprove	26-0-1
A044	Disapprove	26-0-1
A045	Accept as Modified	26-0-1
A046	Accept	26-0-1
A047	Disapprove	26-0-1

Proposal Number	Final Formal Action	Ballot 1 Results
A048	Accept as Modified	26-0-1
A049	Accept	26-0-1
A050	Accept as Modified	26-0-1
A051	Accept as Modified	26-0-1
A052	Accept as Modified	26-0-1
A053	Accept	26-0-1
A054	Disapprove	25-0-2
A055	Accept as Modified	25-0-2
A056	Accept as Modified	25-0-2
A057	Accept as Modified	26-0-1
A058	Disapprove	25-1-1
A059	Disapprove	26-0-1
A060	Accept as Modified	25-0-2
A061	Disapprove	25-0-2
A062	Disapprove	26-0-1
A063	Accept	26-0-1
A064	Accept as Modified	26-0-1
A065	Disapprove	26-0-1
A066	Accept as Modified	25-1-1
A067	Accept as Modified	26-0-1
A068	Accept	26-0-1
A069	Accept as Modified	26-0-1
A070	Disapprove	25-1-1
A071	Accept as Modified	26-0-1
A072	Accept as Modified	26-0-1
A073	Accept as Modified	26-0-1
A074	Accept as Modified	26-0-1
A075	Accept as Modified	26-0-1
A076	Accept as Modified	26-0-1
A077	Accept as Modified	26-0-1
A078	Accept	26-0-1
A079	Accept as Modified	26-0-1
A080	Accept as Modified	26-0-1
A081	Accept as Modified	26-0-1
A082	Accept as Modified	26-0-1
A083	Disapprove	26-0-1
A084	Disapprove	26-0-1
A085	Withdrawn	26-0-1
A086	Disapprove	26-0-1
A087	Accept as Modified	26-0-1
A088	Accept as Modified	26-0-1
A089	Accept as Modified	26-0-1
A090	Accept as Modified	26-0-1
A091	Accept as Modified	26-0-1
A092	Accept as Modified	26-0-1
A093	Accept as Modified	26-0-1
A094	Accept	26-0-1
A095	Accept as Modified	26-0-1
A096	Accept as Modified	25-0-2
A097	Accept	26-0-1
A098	Accept as Modified	26-0-1

Proposal Number	Final Formal Action	Ballot 1 Results
A099	Accept as Modified	26-0-1
A100	Accept	26-0-1
A101	Accept	26-0-1
A102	Accept as Modified	26-0-1
A103	Accept as Modified	26-0-1
A104	Accept as Modified	26-0-1
A105	Accept as Modified	26-0-1
A106	Accept as Modified	26-0-1
A107	Accept as Modified	26-0-1
A108	Accept as Modified	26-0-1
A109	Accept	26-0-1
A110	Accept	26-0-1
A111	Accept	26-0-1
A112	Accept as Modified	26-0-1
A113	Accept as Modified	26-0-1
A114	Accept	26-0-1
A115	Accept	26-0-1
A116	Accept	26-0-1
A117	Accept as Modified	26-0-1
A118	Accept as Modified	26-0-1
A119	Accept as Modified	26-0-1
A120	Accept as Modified	26-0-1
A121	Accept as Modified	26-0-1
A122	Accept	26-0-1
A123	Accept	26-0-1
A124	Accept as Modified	26-0-1
A125	Accept as Modified	26-0-1
A126	Disapprove	26-0-1
A127	Disapprove	26-0-1
A128	Disapprove	26-0-1
A129	Disapprove	26-0-1
A130	Disapprove	26-0-1
A131	Disapprove	26-0-1
A132	Disapprove	26-0-1
A133	Disapprove	26-0-1
A134	Disapprove	26-0-1
A135	Disapprove	26-0-1
A136	Disapprove	26-0-1
A137	Disapprove	26-0-1
A138	Disapprove	26-0-1
A139	Disapprove	26-0-1
A140	Disapprove	26-0-1
A141	Disapprove	26-0-1
A142	Disapprove	26-0-1
P001	Disapprove	26-0-1
P002	Accept as Modified	26-0-1
P003	Accept as Modified	25-1-1
P004	Accept as Modified	26-0-1
P005	Disapprove	26-0-1
P006	Disapprove	26-0-1
P007	Accept as Modified	26-0-1

Proposal Number	Final Formal Action	Ballot 1 Results
P008	Accept as Modified	26-0-1
P009	Accept as Modified	26-0-1
P010	Accept as Modified	26-0-1
P011	Accept	26-0-1
P012	Accept as Modified	26-0-1
P013	Accept	26-0-1
P014	Accept as Modified	26-0-1
P015	Disapprove	26-0-1
P016	Accept as Modified	25-1-1
P017	Disapprove	26-0-1
P018	Disapprove	26-0-1
P019	Accept as Modified	26-0-1
P020	Accept as Modified	26-0-1
P021	Disapprove	26-0-1
P022	Disapprove	26-0-1
P023	Disapprove	26-0-1
P024	Accept as Modified	26-0-1
P025	Accept as Modified	25-0-2
P026	Disapprove	26-0-1
P027	Accept as Modified	25-1-1
P028	Disapprove	26-0-1
P029	Accept as Modified	25-0-2
P030	Disapprove	26-0-1
P031	Accept as Modified	26-0-1
P032	Accept as Modified	26-0-1
P033	Accept as Modified	26-0-1
P034	Disapprove	26-0-1
P035	Accept as Modified	25-0-2
P036	Accept as Modified	25-0-2
P037	Accept	25-0-2
P038	Disapprove	26-0-1
P039	Accept as Modified	26-0-1
P040	Disapprove	26-0-1
P041	Disapprove	26-0-1
P042	Accept as Modified	26-0-1
P043	Disapprove	26-0-1
P044	Disapprove	26-0-1
P045	Accept as Modified	26-0-1
P046	Accept as Modified	26-0-1
P047	Disapprove	26-0-1
P048	Accept	26-0-1
P049	Accept as Modified	26-0-1
P050	Accept as Modified	26-0-1
P051	Accept as Modified	26-0-1
P052	Disapprove	26-0-1
P053	Accept as Modified	26-0-1
P054	Accept as Modified	26-0-1
P055	Accept as Modified	26-0-1
P056	Disapprove	26-0-1
P057	Disapprove	26-0-1
P058	Accept as Modified	26-0-1

Proposal Number	Final Formal Action	Ballot 1 Results
P059	Accept as Modified	26-0-1
P060	Disapprove	26-0-1
P061	Accept as Modified	25-1-1
P062	Accept as Modified	26-0-1
P063	Accept as Modified	25-1-1
P064	Accept as Modified	25-1-1
P065	Disapprove	26-0-1
P066	Accept as Modified	25-1-1
P067	Disapprove	26-0-1
P068	Accept as Modified	26-0-1
P069	Accept as Modified	26-0-1
P070	Accept as Modified	25-1-1
P071	Accept as Modified	26-0-1
P072	Accept	26-0-1
P073	Accept as Modified	26-0-1
P074	Accept	26-0-1
P075	Accept as Modified	26-0-1
P076	Accept as Modified	26-0-1
P077	Disapprove	26-0-1
P078	Accept	26-0-1
P079	Disapprove	26-0-1
P080	Accept as Modified	26-0-1
P081	Accept as Modified	25-1-1
P082	Accept as Modified	25-1-1
P083	Accept as Modified	25-0-2
P084	Accept	26-0-1
P085	Accept	26-0-1
P086	Accept	26-0-1
P087	Accept as Modified	26-0-1
P088	Accept as Modified	26-0-1
P089	Accept as Modified	26-0-1
P090	Accept	26-0-1
P091	Disapprove	26-0-1
P092	Disapprove	26-0-1
P093	Accept as Modified	25-0-2
P094	Accept as Modified	26-0-1
P095	Accept	26-0-1
P096	Accept	26-0-1
P097	Accept as Modified	26-0-1
P098	Accept	26-0-1
P099	Accept	26-0-1
P100	Accept as Modified	26-0-1
P101	Accept as Modified	26-0-1
P102	Accept as Modified	26-0-1
P103	Disapprove	26-0-1
P104	Accept as Modified	26-0-1
P105	Disapprove	26-0-1
P106	Disapprove	26-0-1

Proposed Changes with Final Formal Actions

Section 2 Definitions

P001	ID 8036	202 DEFINITIONS	Final Formal Action: Disapprove
Submitter:		Cindy Wasser, Home Innovation Research Labs (NGBS Green)	
Comment:		<p><u>Blackwater:</u> liquid or waterborne waste that would be permitted without special treatment into either the public sewer or a private sewage disposal system.</p> <p><u>Blackwater Capture:</u> water captured from toilets and faucets for reuse outdoors.</p> <p><u>Capture Water Credit:</u> credit applied to indoor and outdoor water calculations that reflects extent to which water demand is “offset” by alternative sources, including rainwater, greywater, and blackwater.</p> <p><u>Effective Rainfall:</u> amount of precipitation that is actually added and stored in the soil.</p> <p><u>Evapotranspiration:</u> sum of evaporation from soil and other surfaces, as well as transpiration from plants; shown as a monthly sum for the purposes of WRI calculation.</p> <p><u>Greywater:</u> untreated wastewater that has not come into contact with toilet waste, kitchen sink waste, dishwasher waste or similarly contaminated sources.</p> <p><u>Greywater Capture:</u> water captured from showers, bathtubs, lavatory faucets, and clothes washers for reuse, either indoors or outdoors.</p> <p><u>Indoor Baseline:</u> baseline indoor water demand calculated by adding typical daily water volume per device per occupant.</p> <p><u>Irrigation Controller Reduction:</u> irrigation water reduction based on a verified weather-based irrigation controller.</p> <p><u>Irrigation Efficiency:</u> the efficiency of a specific type of irrigation; a number between 0 and 1.</p> <p><u>Landscape Area:</u> verified area of landscaped zone(s).</p> <p><u>Landscape Water Area:</u> total area that is planted, irrigated, hand-watered or have a water feature like a pool.</p> <p><u>Landscape Water Use:</u> annual outdoor water use for landscaping.</p> <p><u>Master Bath Adjustment:</u> adjustment of indoor water use based on expected use of a separate master bathroom.</p> <p><u>Non-Landscape Water Use:</u> sum of outdoor exposed pools, spas, and fountains.</p> <p><u>Outdoor Baseline:</u> baseline outdoor water demand based on outdoor area and local evapotranspiration rates.</p> <p><u>Pan Evaporation Rate:</u> value derived by dividing the volume of liquid that evaporated from the amount of time that it took to evaporate.</p> <p><u>Plant Fraction Evapotranspiration:</u> fraction of evapotranspiration that is associated with a given plant type.</p>	

	<p><u>Rainwater:</u> natural precipitation that falls on a structure.</p> <p><u>Rainwater Capture:</u> rainwater capture from roof or site for indoor and/or outdoor reuse.</p> <p><u>Roof Surface Capture:</u> precipitation expected to be captured from a particular roof surface material.</p> <p><u>Site Surface Capture:</u> precipitation expected to be captured from a particular site surface material.</p> <p><u>Sitewater:</u> natural precipitation that falls on the ground, softscapes, and hardscapes.</p> <p><u>Structural Waste:</u> water volume in the pipe between the hot water source and the plumbing fixture or appliance, plus the extra volume needed to heat the pipe as hot water is delivered to its use.</p> <p><u>Structural Waste (Baseline):</u> approximate structural waste value based on the house size and configurations.</p> <p><u>Structural Waste (Preliminary):</u> estimated structural waste volume where there is no built construction to verify but a preliminary score can be calculated based on plans.</p> <p><u>Structural Waste (Verified):</u> field measured structural waste value; water volume is collected until the temperature of the water equals 100°F at furthest fixture for a domestic hot water system.</p> <p><u>Thermostatic Control Valve (TSV):</u> device that prevents dangerously high output temperature regardless of input and output variations. Modern TSV products are designed to save water and energy by reducing flow to a trickle once hot water is available.</p> <p><u>Use Factor:</u> expected frequency of a device’s use. Shown in right column of Table 1.</p> <p><u>Water Month:</u> month where irrigation or hand-watering is expected; months between first and last frosts.</p> <p><u>WRI Verifier:</u> professional who has completed a recognized WRI training.</p>
Reason:	Definitions list does not capture full set of terms present within the NGBS text. Incorporate terms that are included within Appendix D Water Rating Index.
CC Action:	Disapprove
CC Modification:	
CC Reason:	CC rejected this proposal and generated several individual proposals to incorporate expanded definitions directly within the Appendix D text.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

Additional TG Proposed Changes

A001	ID 8259	202 Definitions	Final Formal Action: Accept
Submitter:	Bill Sanderson, Team WS, LLC.		
Comment:	<i>Revise the following definition</i> Hardscape. Asphalt, concrete, masonry, stone, wood, and other non-plant elements <u>pavers</u> external to the building shell on a landscape.		
Reason:	Non plant elements is an ambiguous term, replacing with pavers makes the hardscape definition more direct and applicable to driveways, parking areas, walkways, etc. The revision eliminates the technicality of non-plant elements, like artificial turf, being considered for practice 505.2 (1) (c) under Heat island mitigation.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A002	ID 8188	202 Definitions	Final Formal Action: Accept as Modified
Submitter:	Theresa Weston, The Holt Weston Consultancy representing ABAA		
Comment:	<i>Add Definition:</i> <u>BUILDING THERMAL ENVELOPE. The basement walls, exterior walls, floors, ceilings, roofs and any other building element assemblies that enclose conditioned space or provide a boundary between conditioned space and exempt or unconditioned space.</u> <i>Modify note of Table 703.2.4(b) Building Envelope Leakage as follows:</i> Where $ELR50 = CFM50 / \text{Shell Area}$ <u>Building Thermal Envelope</u>		
Reason:	Revises language to use more widely accepted industry terminology and introduces definition from the IECC.		
CC Action:	Accept as Modified		
CC Modification:	<i>Add Definition:</i> <u>BUILDING THERMAL ENVELOPE. The basement walls, exterior walls, floors, ceilings, roofs and any other building element assemblies that enclose conditioned space or provide a boundary between conditioned space and exempt or unconditioned space.</u> <i>Modify note of Table 703.2.4(b) Building Envelope Leakage as follows:</i> Where $ELR50 = CFM50 / \text{Shell Area}$ <u>Building Thermal Envelope</u> Area		
CC Reason:	Note: italics should be applied in printed text Added missing word.		

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A003	ID 8161	202 Definitions	Final Formal Action: Disapprove
Submitter:	Olga Cano, TG4 Subgroup – Definitions		
Comment:	<p><u>Proposed:</u></p> <p>Structural Waste: water volume in the pipe between the hot water source and the plumbing fixture or appliance, plus the extra volume needed to heat the pipe as hot water is delivered to its use.</p> <p>Structural Waste (Baseline): approximate structural waste value based on the house size and configurations.</p> <p>Structural Waste (Preliminary): estimated structural waste volume where there is no built construction to verify but a preliminary score can be calculated based on plans.</p> <p>Structural Waste (Verified): field measured structural waste value; water volume is collected until the temperature of the water equals 100°F at furthest fixture for a domestic hot water system.</p>		
Reason:	WRI terms are not currently defined in the NGBS.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Current text is sufficient. Term is only defined once and adequately defined within D101.6(5).		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A004	ID 8160	202 Definitions	Final Formal Action: Accept
Submitter:	Olga Cano, TG4 Subgroup – Definitions		
Comment:	D101.8 (1) (d) Effective Rainfall: amount of precipitation added and stored in the soil.		
Reason:	Definition missing		
CC Action:	Accept		
CC Modification:			
CC Reason:	Include definition within the section.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0		

	Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A005	ID 8121	202 Definitions	Final Formal Action: Disapprove
Submitter:	Bill Sanderson, Team WS, LLC.		
Comment:	<i>Add the following definition</i> <u>Recreational Surface. Hard covered playing area used for tennis courts, basketball courts, etc.</u>		
Reason:	Adding the definition ensures recreational surfaces do not encompass playing fields.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Recreational surfaces only appears a few times in the standard and adding a definition is unnecessary.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

Section 3 Compliance Method

P002	ID 8039	305 Green Remodeling	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	<p>Waive the size restriction on addition size for historic buildings so that they can benefit from the exemptions and flexibility within Chapter 11.</p> <p>Existing buildings that will be remodeled and will include an addition that is >75% of the existing building's above-grade conditioned area are eligible to apply the NGBS's exemptions for mandatory practices that apply to the building portions that will remain unaltered, as long as there are no apparent life safety or moisture issues. The remodeled existing building can comply using the remodeling path; the new addition portion of the building would comply under the new construction path and can not claim exemptions from the NGBS mandatory practices.</p>		
Reason:	<p>Existing historic buildings that will be remodeled and will include an addition that is <75% of the existing building's above-grade conditioned area are eligible to use the NGBS's exemptions for mandatory practices that apply to the building portions that will remain unaltered, as long as there are no apparent life safety or moisture issues. It is currently unclear how a historic building being renovated with an addition >75% of the existing above-grade conditioned area could comply with the NGBS. It would be unreasonable to expect renovated historic buildings with large additions to comply via the New Construction pathway.</p>		
CC Action:	Accept as Modified		
CC Modification:	<p>305.2.1.1 Additions. For a remodeled building that includes an addition, the entire building including the addition shall comply with the criteria of § 305.2. The total above-grade conditioned area added during a remodel shall not exceed 75% of the existing building's above-grade conditioned area. For multifamily buildings, the above-grade conditioned area shall be based on the entire building including all dwelling units/sleeping units and common areas. <u>EXCEPTION: Historic buildings are exempt from the 75% limitation.</u></p> <p>HISTORIC BUILDINGS. Buildings that are listed in or are eligible for listing in the National Register of Historic Places (NRHP) or designated as being of historic or architectural significance under an appropriate state or local law.</p> <p><u>HISTORIC BUILDING. Any building or structure that is one or more of the following:</u></p> <ol style="list-style-type: none"> <u>1. Listed, or certified as eligible for listing, by the State Historic Preservation Officer or the Keeper of the National Register of Historic Places, in the National Register of Historic Places.</u> <u>2. Designated as historic under an applicable state or local law.</u> <u>3. Certified as a contributing resource within a National Register-listed, state-designated or locally designated historic district.</u> 		
CC Reason:	The CC wanted to align the def of historic buildings with the IECC definition.		
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P003	ID 8082	305.2 Whole-building rating criteria	Final Formal Action: Accept as Modified
Submitter:	Steven Rosenstock, Self		
Comment:	<p>305.2.5.1 Energy Consumption Reduction Path. The energy efficiency rating level shall be based on the reduction in energy consumption resulting from the remodel in accordance with Table 305.2.5.1.</p> <p>The reduction in energy consumption resulting from the remodel shall be based on the estimated annual energy cost savings or <u>site energy savings</u> or source energy savings <u>or carbon savings</u> as determined by a third-party energy audit and analysis or utility consumption data.</p>		
Reason:	Different jurisdictions are using different metrics to determine compliance with energy codes for new or existing buildings. A green standard should be flexible to work with current policies of different cities and states.		
CC Action:	Accept as Modified		
CC Modification:	<p>305.2.5.1 Energy Consumption Reduction Path. The energy efficiency rating level shall be based on the reduction in energy consumption resulting from the remodel in accordance with Table 305.2.5.1.</p> <p>The reduction in energy consumption resulting from the remodel shall be based on the estimated annual energy cost savings, or site energy savings, source energy savings, <u>or carbon dioxide equivalent emissions (CO2e) savings as determined by a third-party energy audit and analysis or utility consumption data using methodology in ANSI/ASHRAE Standard 105-2021 or IgCC -2021 (ASHRAE 189.1-2020) or equivalent.</u></p> <p><u>Add (CO2e) and standard year to the 702.2.1 proposal to TG 5 P027</u></p>		
CC Reason:	The CC made the edits based on Action on P027 and to clarify the years.		
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 1 Abstain: 1 Non-voting: 2</p>		
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>DISAPPROVE COMMITTEE ACTION - Craig Charles Conner: Several reasons. -Carbon or CO2 equivalent should not be with the three other energy metrics list (cost, source, site) with an ""or"", as carbon/CO2e are an additional dimension rather than another energy metric. -I am skeptical of the carbon/CO2e calculation. -I live in the Pacific Northwest, where we have areas of very high hydro. Does that mean those areas have almost no carbon/CO2 so that carbon/CO2e ""measure of energy"" is almost zero in the land of high hydro? -Electricity generation from natural gas has less than half the CO2e than electricity from fossil fuels so electricity CO2e is sometimes difficult to even know. -In my experience many jurisdictions will not even understand the difference between site energy, source energy, energy cost, and CO2. You can test this by asking them which they have.</p> <p>Task Group 1 Response: Non-Persuasive</p> <p>Reason: The requirements as stated will allow flexibility to local jurisdictions who may be using carbon emissions as their standard. Carbon dioxide equivalence is being used in several different programs.</p>		

P004	ID 8060	305.2 Whole-building rating criteria	Final Formal Action: Accept as Modified
Submitter:	Chinedu Moneke, Home Innovation Research Labs (NGBS Green)		
Comment:	Presently, energy savings is considered on a per square foot basis but water savings is based on total area. The reason for this is unclear and will make achievement of the water performance thresholds more difficult, especially if additional square footage is added as part of the renovation.		
Reason:	Change water consumption reduction equation to be divided by the number of dwelling/sleeping units.		
CC Action:	Accept as Modified		
CC Modification:	<p>305.2.6.1 Water consumption reduction path. The water efficiency rating level shall be based on the reduction in water consumption resulting from the remodel in accordance with Table 305.2.6.1.</p> <p>Water consumption shall be based on the estimated annual use as determined by a third-party audit and analysis or use of utility consumption data. The reduction shall be the percentage difference between the consumption before and after the remodel calculated as follows:</p> <p>$\frac{[(\text{consumption per bedroom before remodel} - \text{consumption per bedroom after remodel}) / \text{consumption per bedroom before remodel}] * 100\%}{}$</p>		
CC Reason:	The CC revised the proposal to normalize water consumption by bedrooms.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

Additional TG Proposed Changes

A006	ID 8114	301.2 Awarding of Points	Final Formal Action: Accept as Modified
Submitter:	Hope Medina, Task Group 1		
Comment:	(3) The Adopting Entity shall allow the use of new and innovative products and practices deemed to meet the intent of this Standard. Points assigned for any new product or practice shall be determined by the Adopting Entity. A maximum of 20 points may be awarded at the discretion of the Adopting Entity. Innovative practices and products shall fall under Chapters 5-10 (Categories 1-6 in Table 303). Point values shall be determined by comparing the innovative product or practice to a product or practice already described in the Standard. The applicant shall supply demonstrable, quantifiable data to support the innovative product or practice and to determine the practice's functional equivalent in the Standard for the points to be awarded.		
Reason:	It appears to be an oversight that innovative practices were limited to chapters 5-10. There is no reason that innovative practices could not be recognized for the other scoring pathways – Existing Buildings, Certified Path, and Commercial Spaces.		
CC Action:	Accept as Modified		
CC Modification:	(3) The Adopting Entity shall allow the use of new and innovative products and practices deemed to meet the intent of this Standard. Points assigned for any new product or practice shall be determined by the Adopting Entity. Points assigned for any new product or practice shall be determined by the Adopting Entity. <u>The Adopting Entity shall award no more than 20 points for such products or practices.</u> A maximum of 20 points may be awarded at the discretion of the Adopting Entity. Innovative practices and products shall fall under Chapters 5-10 (Categories 1-6 in Table 303). Point values shall be determined by comparing the innovative product or practice to a product or practice already described in the Standard. The applicant shall supply		

	demonstrable, quantifiable data to support the innovative product or practice and to determine the practice's functional equivalent in the Standard for the points to be awarded.
CC Reason:	The CC modification is to clarify the application of the standard.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A007	ID 8229	305.2 Whole-building rating criteria	Final Formal Action: Accept as Modified										
Submitter:	Stephen Evanko, Dominion Due Diligence Group												
Comment:	<p>Proposed adding an energy performance compliance path for Existing Building / Remodel Energy Compliance for Multifamily projects.</p> <p>(Edits as proposed to section 305)</p> <p>305 <u>EXISTING BUILDING</u></p> <p>305.2.1 Applicability. The provisions of § 305.2 shall apply to existing buildings. In addition to the foundation, at least 50% of the structural systems of the existing building shall remain in place after any remodeling activities for the building to be eligible for compliance under § 305.2. Eligible projects must have their Certificate of Occupancy at least 5 years <u>1 year</u> prior to NGBS registration.</p> <p>305.2.5 Energy efficiency. The building shall comply with § 305.2.5.1 or § 305.2.5.2 <u>or § 305.2.5.3.</u></p> <p>New Section</p> <p><u>305.2.5.3 EPA ENERGY STAR SEP Score</u></p> <p><u>The Multifamily property must be benchmarked scored in the EPA ENERGY STAR Portfolio Manager tool following EPA requirements and guidance. This benchmark score, also known as the Statement of Energy Performance (SEP) score is a score from 1-100 and is based on actual energy usage data. The 12-month energy data period for this energy benchmark should be within 6 months of the final submission to NGBS. If 100% of all energy data is not available due to the utility not releasing tenant data, then the SEP can be generated with 100% actual house/owner energy usage and 80% of the actual tenant energy usage which has been extrapolated to 100%. All energy data and extrapolation methods must be reported. The level awarded for the energy chapter is based on Table 305.2.5.3.</u></p> <p><u>Table 305.2.5.3</u></p> <table border="1"> <thead> <tr> <th><u>Rating Level</u></th> <th><u>BRONZE</u></th> <th><u>SILVER</u></th> <th><u>GOLD</u></th> <th><u>EMERALD</u></th> </tr> </thead> <tbody> <tr> <td><u>EPA ENERGY STAR SEP Score</u></td> <td><u>75-85</u></td> <td><u>85-95</u></td> <td><u>95+</u></td> <td><u>N/A</u></td> </tr> </tbody> </table>			<u>Rating Level</u>	<u>BRONZE</u>	<u>SILVER</u>	<u>GOLD</u>	<u>EMERALD</u>	<u>EPA ENERGY STAR SEP Score</u>	<u>75-85</u>	<u>85-95</u>	<u>95+</u>	<u>N/A</u>
<u>Rating Level</u>	<u>BRONZE</u>	<u>SILVER</u>	<u>GOLD</u>	<u>EMERALD</u>									
<u>EPA ENERGY STAR SEP Score</u>	<u>75-85</u>	<u>85-95</u>	<u>95+</u>	<u>N/A</u>									
Reason:	<p>The 2020 NGBS Remodel has two current paths for the Energy Section:</p> <p>1) Energy Consumption Reduction Path of 15% (Bronze), etc (Table 305.2.5.1)</p>												

	<p>2) Prescriptive Path from 11.700 on the basis of Chapter 7 which has leveraged IECC 2018 as the baseline (Table 305.2.5.2)</p> <p>Newer high-performing buildings (e.g. 2-7 years old) have an extremely challenging time meeting the 15%+ reduction target without needing to discard functioning equipment which still has useful life remaining. Discarding useful equipment (HVAC, appliances, etc) early is wasteful and runs counter to the green intent of the NGBS program. The other energy path available is the Prescriptive Path, which as it exists requires 30 points in 11.703. Securing 30 points in that section is extremely difficult unless the building already complies with IECC 2018 (or IECC 2024 in the future).</p> <p>(BEEF UP TO EXPLAIN MORE ABOUT WHY THIS IS UNLIKELY)</p> <p>Without creating another path to certify these energy-efficient building we are missing an opportunity to recognize and encourage these property owners to continue their efforts to deliver green housing.</p> <p>ENERGY STAR Portfolio Manager is an interactive resource management tool that enables professionals to benchmark the energy use of any type of building, all in a secure online environment. Nearly 25% of U.S. commercial building space is already actively benchmarking in Portfolio Manager, making it the industry-leading benchmarking tool. The Multifamily ENERGY STAR scoring algorithm has been in place since 2014. Many Municipalities require the use of ENERGY STAR Portfolio Manager for benchmarking ordinances. And there are several green financing programs from Fannie Mae, Freddie Mac and HUD that required the use of the benchmarking tool. Some green building certification programs such as LEED already use the benchmarking score as evidence of energy-efficient performance.</p> <p>Issues to be addressed:</p> <ul style="list-style-type: none"> · EPA ENERGY STAR algorithm only works on properties with 20 or more units <ul style="list-style-type: none"> o Should we offer an ERI path for existing buildings that aligns with Ch7? (to cover smaller MF properties and SFH) · EPA ENERGY STAR algorithm is used at the property level. So, the score for the building would be based on the total score for the property. (We should relate this to the additional proposal to offer a property wide certification) · No restriction on the age of the property. If an older property has already been upgraded and is performing a level equivalent to this, it should be able to use this new path as well. · SEP is based on Actual performance – Should have at least 80% of the actual 12-month history. Remaining 20% can be extrapolated if utility is unable to provide due to requirement for tenant releases (discuss these percentages). Also needs to have 80% average monthly occupancy (as required by ENERGY STAR) · Situation: a property that is scoring 70 but has an improvement scope to get to 75+ - If we already have to recommend changes to get the score to a 75+, how much different is it than the reduction path with 15%.
CC Action:	Accept as Modified
CC Modification:	<p>Proposed adding an energy performance compliance path for Existing Building / Remodel Energy Compliance for Multifamily projects.</p> <p>(Edits as proposed to section 305)</p> <p>305 <u>EXISTING BUILDING</u></p> <p>305.2.1 Applicability. The provisions of § 305.2 shall apply to existing buildings. In addition to the foundation, at least 50% of the structural systems of the existing building shall remain in place after any remodeling</p>

	<p>activities for the building to be eligible for compliance under § 305.2. Eligible projects must have their Certificate of Occupancy at least 5 years <u>3 year</u> prior to NGBS registration.</p> <p>305.2.5 Energy efficiency. The building shall comply with § 305.2.5.1 or § 305.2.5.2 <u>or § 305.2.5.3.</u></p> <p>New Section</p> <p><u>305.2.5.3 EPA ENERGY STAR SEP Score</u></p> <p><u>The Multifamily or mixed-use property mustshall be benchmarked scored in the EPA ENERGY STAR Portfolio Manager tool following EPA requirements and guidance or equivalent tool or program. This benchmark score, also known as the Statement of Energy Performance (SEP) score is a score from 1-100 and is based on actual energy usage data. The <u>last month in the</u> 12-month energy data period for this energy benchmark score shall be within 6 months of the final submission to NGBS <u>prior to the final submission to the Adopting Entity.</u> <u>If Where total property energy data is not available, then the SEP score can be generated with 100% actual house/owner common and non-residential area energy usage and not less than 80% of the actual tenant resident energy usage meters which has been extrapolated to 100%. All energy data and extrapolation methods must shall be reported. The level awarded for the energy chapter is based on Table 305.2.5.3.</u></u></p> <p><u>Table 305.2.5.3</u></p> <table border="1"> <thead> <tr> <th>Rating Level</th> <th>BRONZE</th> <th>SILVER</th> <th>GOLD</th> <th>EMERALD</th> </tr> </thead> <tbody> <tr> <td>EPA ENERGY STAR SEP Score</td> <td>75-85 <u>84</u></td> <td>85-95 <u>94</u></td> <td>95+ 95-100</td> <td>N/A</td> </tr> </tbody> </table> <p><u>Notwithstanding the above requirements, projects that have an energy score of 65-75 shall achieve Bronze level certification by implementing energy efficiency measures (EEM) that will improve the energy score to a level above 75. All of the EEMs must be completed and verified before submission to the Adopting Entity. All energy data, energy modeling and the forecasted energy score shall be submitted to the Adopting Entity.</u></p>	Rating Level	BRONZE	SILVER	GOLD	EMERALD	EPA ENERGY STAR SEP Score	75-85 <u>84</u>	85-95 <u>94</u>	95+ 95-100	N/A
Rating Level	BRONZE	SILVER	GOLD	EMERALD							
EPA ENERGY STAR SEP Score	75-85 <u>84</u>	85-95 <u>94</u>	95+ 95-100	N/A							
CC Reason:	To add exception/exemptions and make verbiage more appropriate for a technical standard.										
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>										
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>APPROVE WITH COMMENT - Kevin Duell: Spelling correction: ("years"):</p> <p>305.2.1 Applicability. The provisions of § 305.2 shall apply to existing buildings. In addition to the foundation, at least 50% of the structural systems of the existing building shall remain in place after any remodeling activities for the building to be eligible for compliance under § 305.2. Eligible projects must have their Certificate of Occupancy at least 5 years <u>3 years</u> prior to NGBS registration.</p> <p>Grammar correction: replace "is" with "are" (data are plural), delete ("then") & revert to "usage" to be consistent:</p> <p><u>Where total property energy data is are not available, then the SEP score can be generated with 100% actual house/owner common and non-residential area energy usage and not less than 80% of the actual tenant resident energy usage which has been extrapolated to 100%.</u></p>										

A008	ID 8235	305.2 Whole-building rating criteria	Final Formal Action: Accept as Modified										
Submitter:	Stephen Evanko, Dominion Due Diligence Group												
Comment:	<p>Proposed adding a water performance compliance path for Existing Building / Remodel Water Compliance for Multifamily projects.</p> <p>(Edits as proposed to section 305)</p> <p>305 <u>EXISTING BUILDING</u></p> <p>305.2.1 Applicability. The provisions of § 305.2 shall apply to existing buildings. In addition to the foundation, at least 50% of the structural systems of the existing building shall remain in place after any remodeling activities for the building to be eligible for compliance under § 305.2. Eligible projects must have their Certificate of Occupancy at least 5 years <u>1 year</u> prior to NGBS registration.</p> <p>305.2.6 Water efficiency. The building shall comply with § 305.2.6.1 or § 305.2.6.2 <u>or § 305.2.6.3.</u></p> <p>New Section</p> <p><u>305.2.6.3 EPA ENERGY STAR Water Score</u></p> <p><u>The Multifamily property must be scored in the EPA ENERGY STAR Portfolio Manager tool following EPA requirements and guidance. This water score is a score from 1-100 and is based on actual water usage data. The 12-month water data period for this water score should be within prior 6 months of the final submission to Adopting Entity. If 100% of all water data is not available due to the utility not releasing data, then the benchmark can be generated with 100% actual house/owner water usage and 80% of the actual tenant water usage which has been extrapolated to 100%. All water data and extrapolation methods must be reported. The level awarded for the water chapter is based on Table 305.2.6.3.</u></p> <p><u>Table 305.2.6.3</u></p> <table border="1"> <thead> <tr> <th>Rating Level</th> <th>BRONZE</th> <th>SILVER</th> <th>GOLD</th> <th>EMERALD</th> </tr> </thead> <tbody> <tr> <td>EPA ENERGY STAR Water Score</td> <td>75-84</td> <td>85-94</td> <td>95+</td> <td>N/A</td> </tr> </tbody> </table>			Rating Level	BRONZE	SILVER	GOLD	EMERALD	EPA ENERGY STAR Water Score	75-84	85-94	95+	N/A
Rating Level	BRONZE	SILVER	GOLD	EMERALD									
EPA ENERGY STAR Water Score	75-84	85-94	95+	N/A									
Reason:	<p>The 2020 NGBS Remodel has two current paths for the Water Section:</p> <ol style="list-style-type: none"> 1) Water Consumption Reduction Path of 20% (Bronze), etc (Table 305.2.6.1) 2) Prescriptive Path from 11.800 on the basis of Chapter 8 (Table 305.2.6.2) <p>ENERGY STAR Portfolio Manager is an interactive resource management tool that enables professionals to benchmark the energy and water use of several building types, all in a secure online environment. Nearly 25% of U.S. commercial building space is already actively benchmarking in Portfolio Manager, making it the industry-leading benchmarking tool. The Multifamily ENERGY STAR water scoring algorithm has been in place since 2017. Many Municipalities require the use of ENERGY STAR Portfolio Manager for benchmarking ordinances. And there are several green financing programs from Fannie Mae, Freddie Mac and HUD that required the use of the benchmarking tool. Some green building certification programs such as LEED already use the benchmarking score as evidence of energy-efficient performance.</p>												

CC Action:	Accept as Modified										
CC Modification:	<p>Proposed adding a water performance compliance path for Existing Building / Remodel Water Compliance for Multifamily projects.</p> <p>(Edits as proposed to section 305)</p> <p>305 <u>EXISTING BUILDING</u></p> <p>305.2.1 Applicability. The provisions of § 305.2 shall apply to existing buildings. In addition to the foundation, at least 50% of the structural systems of the existing building shall remain in place after any remodeling activities for the building to be eligible for compliance under § 305.2. Eligible projects must have their Certificate of Occupancy at least 5 years <u>3 year</u> prior to NGBS registration.</p> <p>305.2.6 Water efficiency. The building shall comply with § 305.2.6.1 or § 305.2.6.2 <u>or § 305.2.6.3.</u></p> <p>New Section</p> <p><u>305.2.6.3 EPA Water Score</u></p> <p><u>The Multifamily property shall be scored in the EPA ENERGY STAR Portfolio Manager tool following EPA requirements and guidance or equivalent tool or program. This water score is a score from 1-100 and is based on actual water usage data. The 12-month water data period for this water score shall be within prior 6 months of the final submission to Adopting Entity. Where total property water data is not available, then the score can be generated with 100% actual common and non-residential area water usage and not less than 80% of the actual tenant water meters, which has been extrapolated to 100%. All water data and extrapolation methods shall be reported. The level awarded for the Water Section shall be based on Table 305.2.6.3.</u></p> <p><u>Table 305.2.6.3</u></p> <table border="1"> <thead> <tr> <th><u>Rating Level</u></th> <th><u>BRONZE</u></th> <th><u>SILVER</u></th> <th><u>GOLD</u></th> <th><u>EMERALD</u></th> </tr> </thead> <tbody> <tr> <td><u>EPA Water Score</u></td> <td><u>75-84</u></td> <td><u>85-94</u></td> <td><u>95+</u></td> <td><u>N/A</u></td> </tr> </tbody> </table>	<u>Rating Level</u>	<u>BRONZE</u>	<u>SILVER</u>	<u>GOLD</u>	<u>EMERALD</u>	<u>EPA Water Score</u>	<u>75-84</u>	<u>85-94</u>	<u>95+</u>	<u>N/A</u>
<u>Rating Level</u>	<u>BRONZE</u>	<u>SILVER</u>	<u>GOLD</u>	<u>EMERALD</u>							
<u>EPA Water Score</u>	<u>75-84</u>	<u>85-94</u>	<u>95+</u>	<u>N/A</u>							
CC Reason:	Removed text that was informational. Made clarifying text edits similar to those implemented in the ENERGY STAR score section. Updated to account for different metering scenarios.										
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 25</p> <p>Disapprove committee action: 0</p> <p>Abstain: 2</p> <p>Non-voting: 2</p>										
Ballot 1 Comments:	<p>ABSTAIN - Joshua Robert Stack: Not persuaded by this approach.</p> <p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>APPROVE WITH COMMENT - Kevin Duell: Spelling correction: ("years"):</p> <p>305.2.1 Applicability. The provisions of § 305.2 shall apply to existing buildings. In addition to the foundation, at least 50% of the structural systems of the existing building shall remain in place after any remodeling activities for the building to be eligible for compliance under § 305.2. Eligible projects must have their</p>										

	<p>Certificate of Occupancy at least 5 years <u>3 years</u> prior to NGBS registration.</p> <p>Grammar correction: replace "is" with "are" (data are plural), delete ("then") & revert to "usage" to be consistent: <u>Where total property water data is-are not available, then-the score can be generated with 100% actual common and non-residential area water usage and not less than 80% of the actual tenant water meters-usage, which has been extrapolated to 100%.</u></p>
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A009	ID 8232	305.2 Whole-building rating criteria	Final Formal Action: Accept as Modified
Submitter:	Jamie Carr, Eco Achievers		
Comment:	<p>305.2.6.2 Prescriptive <u>New Construction Water Equivalency Path</u></p> <p>The building shall comply with <u>§ 11.801.1 Mandatory Requirements and Table 305.2.6.2 (Water Rating Prescriptive Point Thresholds)</u>. Any practice listed in <u>either 11.802 (Prescriptive Path) and 11.803 (Innovative Practices), or § 804 (Performance Path)</u> shall be eligible for contributing points toward Table 305.2.6.2 (Water Rating Prescriptive Point Thresholds). The attributes of the existing building that were in compliance with the prescriptive practices of in <u>§ 11.8032 through 11.804 prior to the remodel certification and remain in compliance after the remodel when submitting for certification</u> shall be eligible for contributing points to this section.</p> <p><u>A building complying with § 305.2.6.2 New Construction Water Equivalency Path shall obtain at least 25 points from § 11.802 and § 11.803, or § 11.804.</u></p> <p><u>Points from §11.802 through § 11.804 do not count towards the required points in Table 305.2.7.</u></p> <p>[Strike Section 305.2.7 Prescriptive practices]</p> <p>[Table 305.2.5.2 shall be renamed Water Point Thresholds, the second row in the first column will be modified to read “Section 11.800 new construction equivalency thresholds,” and the last row will be modified to read “Points from § 11.802 through 11.804 shall not count toward the total points for § 305.2.7.”]</p> <p>[Chapter 8 of the 2024 NGSB shall be reproduced as Chapter 11.8 with the number 11 preceding 80_ throughout the chapter as appropriate.]</p>		
Reason:	The goal here is to provide more flexibility and further align the Existing Buildings chapter with the new construction portion of the Standard, while continuing to maintain the same rigorousness. It seems reasonable to me award NGBS certification to buildings that can show equivalency to either of the two methods of demonstrating compliance under the new construction standard (i.e., Prescriptive Path or Performance Path), not just the Prescriptive Path.		
CC Action:	Accept as Modified		
CC Modification:	<p>305.2.6.2 Prescriptive <u>New Construction Water Equivalency Path</u></p> <p>The building shall comply with <u>§ 11.801.1 Mandatory Requirements and Table 305.2.6.2 (Water Rating Prescriptive Point Thresholds)</u>. Any practice listed in <u>either 11.802 (Prescriptive Path) and 11.803 (Innovative Practices), or § 804 (Performance Path)</u> shall be eligible for contributing points toward Table 305.2.6.2 (Water Rating Prescriptive Point Thresholds). The attributes of the existing building that were in compliance with the prescriptive practices of in <u>§ 11.8032 through 11.804 prior to the remodel certification and remain in</u></p>		

	<p>compliance after the remodel <u>when submitting for certification</u> shall be eligible for contributing points to this section.</p> <p>A building complying with § 305.2.6.2 New Construction Water Equivalency Path shall obtain at least <u>not less than</u> 25 points from § 11.802 and § 11.803, or § 11.804.</p> <p>Points from §11.802 through § 11.804 do not count towards the required points in Table 305.2.7.</p> <p>[Strike Section 305.2.7 Prescriptive practices]</p> <p>[Table 305.2.5.2 shall be renamed Water Point Thresholds, the second row in the first column will be modified to read “Section 11.800 new construction equivalency thresholds,” and the last row will be modified to read “Points from § 11.802 through 11.804 shall not count toward the total points for § 305.2.7.”]</p> <p>[Chapter 8 of the 2024 NGSB shall be reproduced as Chapter 11.8 with the number 11 preceding 80_ throughout the chapter as appropriate.]</p>
CC Reason:	Verbiage more appropriate of a technical standard.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A010	ID 8231	305.2 Whole-building rating criteria	Final Formal Action: Accept as Modified
Submitter:	Jamie Carr, Eco Achievers		
Comment:	<p>305.2.5.2 Prescriptive <u>New Construction Energy Equivalency Path</u></p> <p>The building shall comply with <u>§ 11.701 Minimum Energy Efficiency Requirements and Table 305.2.5.2 (Energy Prescriptive Point Thresholds)</u>. Any practice listed in <u>either 11.702 (Performance Path), § 11.703 (Prescriptive Path), or § 704 (ERI Target Path)</u> shall be eligible for contributing points toward Table 305.2.5.2 (Energy Prescriptive Point Thresholds). The attributes of the existing building that were in compliance with the prescriptive practices of in <u>§ 11.703 through 11.704</u> prior to the remodel <u>certification</u> and remain in compliance after the remodel <u>when submitting for certification</u> shall be eligible for contributing points to this section.</p> <p>A building complying with § 305.2.5.2 Prescriptive New Construction Equivalency Path for Energy shall obtain at least 30 points from <u>§ 11.702, § 11.703, or § 11.704</u> and include a minimum of two practices from § 11.705 or a minimum of one practice from <u>§ 11.705 and a minimum of one practice from § 11.706</u>.</p> <p>Points earned in §11.705 and § 11.706 contribute to the energy points in Table 305.2.5.2 and support earning a higher certification level. Points from <u>§11.702, §11.703, § 11.705 and through § 11.706</u> do not count towards the required points in Table 305.2.7.</p> <p>[Strike Section 305.2.7 Prescriptive practices]</p> <p>[Table 305.2.4.2 shall be renamed Energy Point Thresholds, the second row in the first column will be modified to read “Section 11.700 new construction equivalency thresholds,” and the last row will be modified to read “Points from § 11.702 through 11.706 shall not count toward the total points for § 305.2.7.”]</p>		

	[Chapter 7 of the 2024 NGSB shall be reproduced as Chapter 11.7 with the number 11 preceding 70_ throughout the chapter as appropriate.]
Reason:	The goal here is to provide more flexibility and further align the Existing Buildings chapter with the new construction portion of the Standard, while continuing to maintain the same rigorousness. It seems reasonable to me award NGBS certification to buildings that can show equivalency to any of the three methods of demonstrating compliance under the new construction standard (i.e., Performance Path, Prescriptive Path, or ERI Target Path), not just the Prescriptive Path.
CC Action:	Accept as Modified
CC Modification:	<p>305.2.5.2 Prescriptive <u>New Construction Energy Equivalency Path</u></p> <p>The building shall comply with <u>§ 11.701 Minimum Energy Efficiency Requirements and Table 305.2.5.2 (Energy Prescriptive Point Thresholds)</u>. Any practice listed in <u>either 11.702 (Performance Path), § 11.703 (Prescriptive Path), or § 704 (ERI Target Path)</u> shall be eligible for contributing points toward Table 305.2.5.2 (Energy Prescriptive Point Thresholds). The attributes of the existing building that were in compliance with the prescriptive practices of in <u>§ 11.7032 through 11.704 prior to the remodel certification and remain in compliance after the remodel when submitting for certification</u> shall be eligible for contributing points to this section.</p> <p>A building complying with <u>§ 305.2.5.2 Prescriptive New Construction Equivalency Path for Energy</u> shall obtain at least <u>not less than</u> 30 points from <u>§ 11.702, § 11.703, or § 11.704</u> and include a minimum of <u>not less than</u> two practices from § 11.705 or a minimum of <u>not less than</u> one practice from § 11.705 and one practice from <u>§ 11.706</u>.</p> <p>Points earned in §11.705 and § 11.706 contribute to the energy points in Table 305.2.5.2 and support earning a higher certification level. Points from §11.702, §11.703, § 11.705 and <u>through § 11.706</u> do not count towards the required points in Table 305.2.7.</p> <p>[Strike Section 305.2.7 Prescriptive practices]</p> <p>[Table 305.2.4.2 shall be renamed Energy Point Thresholds, the second row in the first column will be modified to read “Section 11.700 new construction equivalency thresholds,” and the last row will be modified to read “Points from § 11.702 through 11.706 shall not count toward the total points for § 305.2.7.”]</p> <p>[Chapter 7 of the 2024 NGSB shall be reproduced as Chapter 11.7 with the number 11 preceding 70_ throughout the chapter as appropriate.]</p>
CC Reason:	Verbiage more appropriate of a technical standard.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A011	ID 8230	305.3 Multifamily Property Certification	Final Formal Action: Accept as Modified
Submitter:	Stephen Evanko, Dominion Due Diligence Group		
Comment:	Proposed adding a compliance path for Existing Building / Remodel Energy Compliance for Multifamily projects that awards the certification at the property-wide level rather than at the individual building level.		

	<p>[NOT SURE WHERE THIS WOULD RESIDE SO ASSUME NEED TO ADD ON TO SECTION 305</p> <p><u>305 GREEN REMODELING AND EXISTING BUILDING</u></p> <p>....</p> <p><i>New Section</i></p> <p><u>305.3 Multifamily Property Level Green Certification</u></p> <p><u>305.3.1 The Multifamily Property Level Certification permits Multifamily Properties with multiple buildings to qualify for a single property-level green certification by following the practices of 305.2 . Under this path, requirements are applied at the property-level.</u></p> <p><u>All buildings with conditioned space must comply with and meet applicable mandatory practices and all buildings that are included in the Property Certification.</u></p> <p><u>Building Types: Property-wide certifications should specify the buildings that are included in the certification. Multifamily amenity buildings such as clubhouse, fitness center and leasing offices should be included in the property wide certification. Garage-only structures and smaller unconditioned structures such as maintenance sheds, mail kiosks, etc. should be excluded. In alignment with NGBS standards, commercial or retail space may be included or excluded from the green certification. If commercial space is to be included, it must meet the requirements from Chapter 13 relevant for existing buildings.</u></p> <p><u>305.3.2 Rating scope. The building rating achieved under § 305.3 and the associated compliance criteria apply to the entire property after the remodel including any additions.</u></p> <p><u>305.3.3 Mandatory practices. Additions, alterations or repairs to any buildings, building system or portion thereof shall comply with the Mandatory requirements of Chapter 11. Unaltered portions of the existing buildings shall not be required to meet Mandatory requirements except when life safety or apparent moisture issues exist.</u></p> <p><u>305.3.4 Rating level. A minimum rating level of Bronze shall be achieved in each of the following categories: Energy efficiency § 305.3.5), Water efficiency (§ 305.3.6), and Prescriptive practices (§ 305.3.7) as applied across all the buildings in the property. The property rating level shall be the lowest rating level achieved in § 305.3.5, § 305.3.6, and § 305.3.7.</u></p> <p>[repeat the rest of section 305.2 as section 305.3]</p>
<p>Reason:</p>	<p>Issues to be addressed:</p> <ul style="list-style-type: none"> · · ADDRESS SITUATIONS WITH COMMERCIAL (should follow approach in the commercial section and the appeal) <ul style="list-style-type: none"> o Multiple buildings with some commercial in one building o Single building with commercial on the ground floor o Multiple apt buildings with a standalone commercial space (this scenario is currently treated as an accessory structure) <p>Historically, NGBS has awarded certifications at the individual building level which has aligned well with the new construction process. However, for existing Multifamily properties with multiple apartment buildings and amenity buildings, the approach to earn certification at the individual building level creates excess labor and can lead to less efficient upgrade decisions that could risk the property pursuing a green</p>

	<p>certification. Furthermore, many owners need a green certification for all residential buildings to qualify for various green financing programs. Showing a single certification for the entire property is the preferred and most efficient path for these owners.</p> <p>Using the NGBS Remodeling program, the energy reduction path requires that each building earn at least a 15% energy reduction. Some Multifamily properties are built in phases and thus the older buildings have considerably more improvement opportunities than the newer buildings which would have newer, more energy-efficient equipment. Energy Analysts and Verifiers would be able to generate the most-optimal energy savings and return on investment by modeling and proposing improvement at the property-wide level. For instance, the new buildings could show a 10% improvement while the older buildings yielded a 20% improvement.</p> <p>Many other green programs recognize the green certification at the property-level. The ENERGY STAR Portfolio Manager tool and Existing Building Certification, evaluate the energy performance for the entire property as apposed to just at the individual building. GreenPoint Rated Multifamily also recognizes certifications at the property-wide level.</p> <p>This proposed change aligns well with the proposal to add an energy performance compliance path for Existing Building / Remodel Energy Compliance for Multifamily projects (aka ENERGY STAR Statement of Energy Performance)</p>
CC Action:	Accept as Modified
CC Modification:	<p>305 GREEN REMODELING AND EXISTING BUILDING</p> <p><i>New Section</i></p> <p><u>305.3 Multifamily Property Level Green Certification</u></p> <p>305.3.1 The Multifamily Property Level Certification permits Multifamily Properties with multiple buildings to shall qualify for a single property-level green certification by following the practices of 305.2. Under this path, requirements are applied at the property level.</p> <p>All buildings with conditioned space must comply with and meet applicable mandatory practices and all buildings that are included in the Property Certification.</p> <p><u>Building Types: Property-wide certifications shall specify the buildings that are included in the certification. Multifamily amenity buildings, such as clubhouse, fitness center and leasing offices shall be included in the property wide certification. Garage-only structures and smaller unconditioned structures, such as, but not limited to, maintenance sheds, or mail kiosks, etc., shall be excluded. In alignment with NGBS standards, commercial or retail space is permitted to be may be included or excluded from the green certification. Where if commercial space is to be included, it must shall meet the requirements from Chapter 13 relevant for existing buildings.</u></p> <p><u>305.3.2 Rating scope. The building rating achieved under § 305.3 and the associated compliance criteria apply to the entire property after the remodel including any additions.</u></p> <p><u>305.3.3 Mandatory practices. Additions, alterations or repairs to any buildings, building system or portion thereof shall comply with the Mandatory requirements of Chapter 11. Unaltered portions of the existing buildings shall not be required to meet Mandatory requirements except when where life, safety, or apparent visible moisture issues exist.</u></p>

	<p>305.3.4 Rating level. A minimum rating level of Bronze or higher shall be achieved in each of the following categories: Energy efficiency (§ 305.2.5), Water efficiency (§ 305.2.6), and Prescriptive practices (§ 305.2.7), as applied across all the buildings in the property. The property rating level shall be the lowest rating level achieved in § 305.2.5, § 305.2.6, or § 305.2.7.</p> <p><i>In all other places where “apparent moisture issues” exists in Section 305, change to “visible moisture issues.”</i></p> <p><i>Change “and” to “or” in final sentence of 305.2.4.</i></p>
CC Reason:	<p>To better align with green financing that recognizes property-wide improvements in green certification, this new section provides new flexibility and recognize current existing conditions to earn a single property-wide certification without compromising the baseline performance required. Using the NGBS Remodeling program, the energy reduction path requires that each building earn at least a 15% energy reduction. Some Multifamily properties are built in phases and thus the older buildings have considerably more improvement opportunities than the newer buildings which would have newer, more energy-efficient equipment. Energy Analysts and Verifiers would be able to generate the most-optimal energy savings and return on investment by modeling and proposing improvement at the property-wide level. For instance, the new buildings could show a 10% improvement while the older buildings yielded a 20% improvement.</p> <p>Historically, NGBS has awarded certifications at the individual building level, which has aligned well with the new construction process. However, for existing Multifamily properties with multiple apartment buildings and amenity buildings, the approach to earn certification at the individual building level creates excess labor and can lead to less efficient upgrade decisions that could risk the property pursuing a green certification. Furthermore, many owners need a green certification for all residential buildings to qualify for various green financing programs. Showing a single certification for the entire property is the preferred and most efficient path for these owners.</p> <p>Other edits were provided for clarity.</p>
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2</p>
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>APPROVE WITH COMMENT - Kevin Duell: Spelling correction: Capitalize "Commercial" Commercial or retail space is permitted to be may be included or excluded from the green certification.</p> <p>Language simplification: delete unnecessary words ("to be") Where if commercial space is to be included, it must shall meet the requirements from Chapter 13 relevant for existing buildings.</p> <p>Remove comma ("life safety") - there could be life safety issues, but not "life issues"! <u>Unaltered portions of the existing buildings shall not be required to meet Mandatory requirements except when where life, safety, or apparent visible moisture issues exist.</u></p>

Section 4 Site Design and Development

Additional TG Proposed Changes

A012	ID 8120	403.6 Landscape Plan	Final Formal Action: Accept as Modified
Submitter:	Bill Sanderson, Team WS, LLC.		
Comment:	<p><i>Modify as shown below</i></p> <p>(5) Where turf is being planted, Turfgrass Water Conservation Alliance (TWCA) or equivalent as determined by the adopting entity third-party qualified water efficient grasses are used</p> <p><u>(6) Where artificial turf is installed, Synthetic Turf Council (STC) or equivalent qualified artificial turf is used (only applicable in dry locations)</u></p> <p><u>(7) (6) For landscaped vegetated areas, the maximum percentage of all turf areas is:</u></p> <ul style="list-style-type: none"><li>(a) 0%<li>(b) greater than 0% to less than or equal to 20%<li>(c) greater than 20% to less than or equal to 40%.<li>(d) greater than 40% to less than or equal to 60% <p><u>(8) For landscaped vegetated areas, the maximum percentage of all artificial turf areas is (only applicable in dry locations):</u></p> <ul style="list-style-type: none"><li><u>(a) 0%</u><li><u>(b) greater than 0% to less than or equal to 20%</u><li><u>(c) greater than 20% to less than or equal to 40%</u><li><u>(d) greater than 40% to less than or equal to 60%</u> <p><u>(9) (7) To improve pollinator habitat...</u></p> <p><u>(10) (8) Non-potable irrigation water is available to common areas</u></p> <p><u>(11) (9) Non-potable irrigation water is available to lots</u></p> <p><u>(12) (10) Plants with similar...</u></p> <p><u>(13) (11) Species and locations...</u></p> <p><u>(14) (12) Vegetative wind breaks...</u></p> <p><u>(15) (13) On-site tree trimmings...</u></p> <p><u>(16) (14) An integrated common...</u></p> <p><u>(17) (15) Plans for the common area landscape...</u></p> <p><u>(18) (16) Trees that might...</u></p>		

	<p>(19) (17) Greywater irrigation systems...</p> <p>(20) (18) Cisterns, rain barrels...</p> <p>(21) (19) Spray irrigation...</p>
Reason:	Natural turf fields in arid climates account for excessive water consumption and maintenance negatively effecting the environment. Artificial turf reduces that impact, but only in non-temperate climates.
CC Action:	Accept as Modified
CC Modification:	<p>(5) Where turf is being planted, Turfgrass Water Conservation Alliance (TWCA) or equivalent as determined by the adopting entity third-party qualified water efficient grasses are used_</p> <p><u>6) Where artificial or synthetic turf is installed in Dry climate zones per table A200, instead of natural turf for common recreation, sport or play fields Synthetic Turf Council (STC) or equivalent industry association qualified artificial turf is used</u></p> <p>(7) (6)For landscaped vegetated areas, the maximum percentage of all turf areas is:</p> <ul style="list-style-type: none"> (a) 0% (b) greater than 0% to less than or equal to 20% (c) greater than 20% to less than or equal to 40%. (d) greater than 40% to less than or equal to 60% <p><u>8) For landscaped vegetated areas, the maximum percentage of all artificial turf areas is (only applicable in Dry climate zones per table A200):</u></p> <ul style="list-style-type: none"> <u>(a) 0%</u> <u>(b) greater than 0% to less than or equal to 20%</u> <u>(c) greater than 20% to less than or equal to 40%</u> <u>(d) greater than 40% to less than or equal to 60%</u> <p>(9) (7)-To improve pollinator habitat...</p> <p>(10) (8)-Non-potable irrigation water is available to common areas</p> <p>(11) (9)-Non-potable irrigation water is available to lots</p> <p>(12) (10)-Plants with similar...</p> <p>(13) (11)-Species and locations...</p> <p>(14) (12)-Vegetative wind breaks...</p> <p>(15) (13)- On-site tree trimmings...</p> <p>(16) (14)-An integrated common...</p>

	<p>(17) (15) Plans for the common area landscape...</p> <p>(18) (16) Trees that might...</p> <p>(19) (17) Greywater irrigation systems...</p> <p>(20) (18) Cisterns, rain barrels...</p> <p>(21) (19) Spray irrigation...</p>
CC Reason:	Agree with the value of the practice and included more specificity.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

Section 5 Lot Design, Preparation, and Development

P005	ID 8089	502.1 Project team, mission statement, and goals	Final Formal Action: Disapprove
Submitter:	Marla Esser Cloos, Self		
Comment:	<p>Project team, mission statement, and goals. A knowledgeable team is established, and team member roles are identified with respect to green lot design, preparation, and development. <u>In addition, at least one project team member will be trained or certified in health and wellness with regards to lot design, preparation and development.</u> The project's green <u>and health and wellness</u> goals and objectives are written into a mission statement.</p>		
Reason:	<p>Health and wellness considerations in green lot design, preparation, and development lay the groundwork for many of the benefits achieved in NGBS Chapter 5. Community design for resident health is a goal for many developers and builders, especially as consumers increasingly choose these types of communities. Walkable communities offer locations with neighborhood features and resources easily accessible by walking or bicycling, increasing health and wellness opportunities for residents while also reducing potential car use. Additionally, including access to nature in the community supports the health and wellness of residents and is a key part of the plan, as is sun orientation. One or more team members being trained or certified in health and wellness provides additional resources in understanding and planning the infrastructure to support residents' health and wellness. Additional information about the importance of infrastructure and community planning to support residents' health and wellness may be found in NGBS Green+ Badges Workbook, NGBS+ Wellness section, starting on p. 14.</p>		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	The inclusion of a project team members should not receive points, their contribution would. Including ESG in action on A013.		
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P006	ID 8106	505.3 Density	Final Formal Action: Disapprove
Submitter:	Joe Baumann, SK Collaborative		
Comment:	Do not auto-populate unit count for single building, which we have been told to include on overview design tab. Density is a figure that will represent the entire site, often including the combined unit counts of multiple buildings and the combined acreage of the entire site.		
Reason:	It is not practical to fabricate acreages for each building on a site that contains multiple buildings. Density figures will always be provided in units/acre. That number should represent all buildings and all acreage on a site.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	The proposal doesn't offer legislative language for the CC to vote on, therefore they need to disapprove. But conceptually, the CC believes that the language in the NGBS is correct, but is not currently being calculated/implemented correctly by the certification agency in their scoring tools. As a result, the CC recommends that the certification agency can make this adjustment to the calculation now that the CC is clear in their intent.		

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P007	ID 8107	505.4 Mixed-use development	Final Formal Action: Accept as Modified
Submitter:	Joe Baumann, SK Collaborative		
Comment:	Make it clear that projects qualify for points if the site contains a mix of uses, rather than a single mixed-use building.		
Reason:	We have projects with retail, offices, medical facilities, etc. on site that do not technically qualify for points here, because there is a not always a single building with multiple uses. The intent should be to incentivize a mix of uses within a single site, not within a single building.		
CC Action:	Accept as Modified		
CC Modification:	505.4 Mixed-Use Development Building		
CC Reason:	This provides clarification that the practice addresses a single building with a mix of uses.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P008	ID 8086	505.6 Multi-unit plug-in electric vehicle charging	Final Formal Action: Accept as Modified
Submitter:	Steven Rosenstock, Self		
Comment:	505.6 Multi-unit plug-in electric vehicle charging. Plug-in electric vehicle charging capability is provided for not fewer than 2% 5% of parking stalls. <i>[An additional 2 points can be earned for each percentage point above 2% 5% for a maximum of 10 points] ...</i>		
Reason:	There are now many jurisdictions that have requirements at multi-family buildings for EV charging that are well above the 2% in the current standard. Here is one information source that shows requirements by jurisdiction: https://www.swenergy.org/transportation/electric-vehicles/building-codes#who This proposal increases the minimum requirement in the green standard to keep up with what is happening across the US in minimum building codes.		
CC Action:	Accept as Modified		
CC Modification:	Plug-in electric vehicle charger charging capability is provided for not fewer than 2% or more of parking stalls. <i>[An additional 2 points can be earned for each percentage point above 2% for a maximum of 10 points] ...</i>		
CC Reason:	The CC believes that encouraging more EV chargers is desirable.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

Additional TG Proposed Changes

A013	ID 8115	502 Project team, mission statement, and goals	Final Formal Action: Accept as Modified
Submitter:	Aaron Gary, Task Group 2		
Comment:	<p>502 Project team, mission statement, and goals</p> <p>502.1 Project team, mission statement, and goals. A knowledgeable team is established and team member roles are identified with respect to green lot design, preparation, and development. The project’s green goals and objectives are written into a mission statement. 4</p> <p>502.2 ESG plan. The Builder developing the project has written an ESG plan that includes green goals and objectives for the projects they build.....2</p>		
Reason:	Many developers implement portfolio wide ESG reporting plans that inform the goals and objectives of all our their projects’, including the one being certified.		
CC Action:	Accept as Modified		
CC Modification:	<p>502 Project team, mission statement, and goals</p> <p>502.1 Project team, mission statement, and goals. A knowledgeable team is established and team member roles are identified with respect to green lot design, preparation, and development. The project’s green goals and objectives are written into a mission statement. 4</p> <p>502.2 Environmental, Social, and Governance (ESG) plan. An ESG impact plan has been written for the project.....2</p>		
CC Reason:	Spelled out “ESG” acronym and added specificity.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A014	ID 8260	503.5 Landscape Plan	Final Formal Action: Accept as Modified
Submitter:	Bill Sanderson, Team WS, LLC.		
Comment:	<p><i>Modify as shown below</i></p> <p>(5) Where turf is being planted, Turfgrass Water Conservation Alliance (TWCA) or equivalent as determined by the adopting entity third-party qualified water efficient grasses are used</p> <p><u>(6) Where artificial turf is installed, Synthetic Turf Council (STC) or equivalent qualified artificial turf is used (only applicable in dry locations)</u></p> <p><u>(7) (6)For landscaped vegetated areas, the maximum percentage of all turf areas is:</u></p> <ul style="list-style-type: none"> (a) greater than 40% to less than or equal to 60% (b) greater than 20% to less than or equal to 40% (c) greater than 0% to less than or equal to 20% 		

	<p>(d) 0%</p> <p><u>(8) For landscaped vegetated areas, the maximum percentage of all artificial turf areas is (only applicable in dry locations):</u></p> <p><u>(a) greater than 40% to less than or equal to 60%</u></p> <p><u>(b) greater than 20% to less than or equal to 40%</u></p> <p><u>(c) greater than 0% to less than or equal to 20%</u></p> <p><u>(d) 0%</u></p> <p><u>(9) (7)-Plants with similar watering needs are grouped (hydrozoning) and shown on the lot plan</u></p> <p><u>(10) (8)-Summer shading by planting installed to shade a minimum of 30% of building walls. To conform to summer shading, the effective shade coverage (five years after planting) is the arithmetic mean of the shade coverage calculated at 10 am for eastward facing walls, noon for southward facing walls, and 3 pm for westward facing walls on the summer solstice.</u></p> <p><u>(11) (9)-Vegetative wind breaks or channels are designed to protect the lot and immediate surrounding lots as appropriate for local conditions</u></p>
Reason:	Natural turf fields in arid climates account for excessive water consumption and maintenance negatively effecting the environment. Artificial turf reduces that impact, but only in non-temperate climates.
CC Action:	Accept as Modified
CC Modification:	<p><i>Modify as shown below</i></p> <p>(5) Where turf is being planted, Turfgrass Water Conservation Alliance (TWCA) or equivalent as determined by the adopting entity third-party qualified water efficient grasses are used</p> <p>6) Where <u>artificial or synthetic turf is installed</u> in Dry climate zones <u>per table A200, instead of natural turf for common recreation, sport or play fields</u> Synthetic Turf Council (STC) or equivalent <u>industry association</u> qualified artificial turf is used.</p> <p><u>(7) (6)For landscaped vegetated areas, the maximum percentage of all turf areas is:</u></p> <p><u>(a) greater than 40% to less than or equal to 60%</u></p> <p><u>(b) greater than 20% to less than or equal to 40%</u></p> <p><u>(c) greater than 0% to less than or equal to 20%</u></p> <p><u>(d) 0%</u></p> <p><u>(8) For landscaped vegetated areas, the maximum percentage of all artificial turf areas is (only applicable in Dry climate zones per table A200):</u></p> <p><u>(a) greater than 40% to less than or equal to 60%</u></p> <p><u>(b) greater than 20% to less than or equal to 40%</u></p>

	<p><u>(c) greater than 0% to less than or equal to 20%</u></p> <p><u>(d) 0%</u></p> <p><u>(9) (7)</u>-Plants with similar watering needs are grouped (hydrozoning) and shown on the lot plan</p> <p><u>(10) (8)</u>-Summer shading by planting installed to shade a minimum of 30% of building walls. To conform to summer shading, the effective shade coverage (five years after planting) is the arithmetic mean of the shade coverage calculated at 10 am for eastward facing walls, noon for southward facing walls, and 3 pm for westward facing walls on the summer solstice.</p> <p><u>(11) (9)</u>-Vegetative wind breaks or channels are designed to protect the lot and immediate surrounding lots as appropriate for local conditions</p>
CC Reason:	Agree with the value of the practice and included more specificity.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A015	ID 8117	503.5 Landscape plan.	Final Formal Action: Disapprove
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	<p><u>Provide landscaped area with native or adapted habitat to meet the below thresholds:</u></p> <p><u>15% of site area (2 pts)</u></p> <p><u>20% of site area (4 pts)</u></p> <p><u>25% of site area (6 pts)</u></p> <p><u>30% of site area (8 pts)</u></p> <p><u>40% of site area (10 pts)</u></p> <p><u>Landscaped areas contributing to the native or adapted area must not be monocultures, include no invasive plants, and contribute to biodiversity. A portion of the habitat area must also meet criteria under 503.6(1).</u></p>		
Reason:	Current NGBS practices don't address habitat area as a percent of the overall site. The current 503.5 language is for preserving existing natural areas.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Adequately covered in 503.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A016	ID 8116	503.5 Landscape plan.	Final Formal Action: Disapprove
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	<p>a. <u>Invasive Plants are not planted on the project site (mandatory)</u></p> <p>b. Non-invasive vegetation that is native or regionally appropriate for local growing conditions is selected to promote biodiversity (7 pts).</p>		
Reason:	Invasive plants have a negative effect on native natural habitat.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Existing Standard adequately addresses items		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A017	ID 8124	505 Lot Design, Preparation, and Development Innovation Practices:	Final Formal Action: Accept as Modified
Submitter:	Theresa Weston, The Holt Weston Consultancy representing ABAA		
Comment:	<p><i>Add new section to 505 Lot Design, Preparation, and Development Innovation Practices:</i></p> <p>505.X Wildfire Resilience. For areas designated as a wild-urban interface area, vegetation is managed in defensible space surrounding the structure, as follows:</p> <p>(1) removal of plants containing resins, oils and waxes</p> <p>(2) In the Immediate Zone (0 to 5 feet around the building) use crushed stone or gravel instead of flammable mulches.</p>		
Reason:	Resilience is currently only addressed in the NGBS Chapter 6 on Resource Efficiency (Materials) and does not address Wildfire threat. The proposed resiliency practices are better suited for Lot Design, Preparation and Development. These requirements are from the "How to Prepare Your Home" by Firewise/		
CC Action:	Accept as Modified		
CC Modification:	<p><i>Add new section to 505 Lot Design, Preparation, and Development Innovation Practices:</i></p> <p><u>505.X Wildfire Resilience. Vegetation is managed in defensible space surrounding the structure. In the Immediate Zone (0 to 5 feet around the building) use stone, gravel, or equivalent material in landscaped areas. (1 points)</u></p> <p><u>1) For areas designated as a wildland - urban interface or other wildfire prone areas.... additional 3 points</u></p>		
CC Reason:	This practice is sound for all fire prone areas and should be included in the Standard. Clarity.		

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. APPROVE WITH COMMENT - Jeff Bradley: This should be broadened to include other features that

A018	ID 8118	505.6 Multi-Unit Plug-In Electric Vehicle Charging	Final Formal Action: Disapprove
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	<p>Plug-in electric vehicle charging capability is provided for not fewer than \pm 5 percent of parking stalls.</p> <p>{An additional 2 points can be earned for each additional 5% points above \pm 5% for a maximum of 10 points}.</p> <p>Fractional values shall be rounded up to the nearest whole number. Electrical capacity in main electric panels supports Level 1 or 2 charging (208/240V- up to 80 amps or in accordance with SAE J1772). Each stall is provided with conduit and wiring infrastructure from the electric panel to support Level 1 or Level 2 charging (208/240V- up to 80 amps or in accordance with SAE J1772) service to the designated stalls, and stalls are equipped with either Level 1 or Level 2 charging AC grounded outlets (208/240V- up to 80 amps or in accordance with SAE J1772) or Level 1 or Level 2 charging stations (208/240V- up to 80 amps or in accordance with SAE J1772) by a third party charging station.</p>		
Reason:	The demand for electric vehicles is increasing. In residential buildings Level 1 charging requires less expensive infrastructure, reduces peak electrical load, and since residents are usually parked for longer periods of time rapid Level 2 charging isn't required except for guest or employee usage.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	EV market penetration differs based on geography and the existing Standard provision recognizes various baselines nationwide.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A019	ID 8122	505.10 Exercise and Recreation Area.	Final Formal Action: Disapprove
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	Delete Section entirely.		
Reason:	Exercise and recreation aren't sustainability measures. There are fitness/wellness building certifications that already meet this need. Including non-sustainability measures in NGBS reduces the focus on sustainability within the NGBS program. Non-sustainability points allows projects to achieve certification without delivering on sustainability. Non-sustainability measures divert time/resources for users of the NGBS program from the core sustainability goal.		

CC Action:	Disapprove
CC Modification:	
CC Reason:	Exercise and recreational areas provide important resources for residents while mitigating the needed transportation and infrastructure to go off site.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A020	ID 8119	505.11 Light Pollution Reduction	Final Formal Action: Accept as Modified
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	<p><u>1. Install exterior light fixtures that meet Backlight, Uplight and Glare (BUG) ratings appropriate for the site's lighting zone. Ratings are per IDA/IES Model Lighting Ordinance (MLO) 2011, Table C (3 pts).</u></p> <p><u>2. Or, install exterior lighting to not emit light above a horizontal plane. No more than 10% of exterior lighting lumens can be emitted above horizontal. Uplighting that is shielded by architectural features is exempt (2 pts).</u></p>		
Reason:	Reduce the effects of natural light on wildlife.		
CC Action:	Accept as Modified		
CC Modification:	<p><u>505.11 Light Pollution Reduction</u></p> <p><u>Lighting for all public exteriors in the project complies with the maintained vertical and horizontal illuminance and uniformity recommendations per for the lighting zone as appropriate applicable to of at least-not less than one of the following (2 points per item):</u></p> <p><u>IES RP-33-14, IECC, or ANSI/ASHRAE/IESNA Standard 90.1-2007 or any updated versions of the text.</u></p> <p><u>Install exteriorExterior light fixtures are installed that meet comply with Backlight, Uplight and Glare (BUG) ratings appropriate for applicable to the site's lighting zone. Ratings are per in accordance with IDA/IES Model Lighting Ordinance (MLO) 2011, Table C.</u></p> <p><u>Install exteriorExterior lighting is installed that does to not emit light above a horizontal plane such as IES designated "Zero Uplight", or "fully shielded" fixtures. No more than 10% of exterior lighting lumens can be emitted above horizontal. Uplighting that is shielded by architectural features is exempt.</u></p>		
CC Reason:	Adjustments have been made to fully incorporate aspects of light trespass in order to mitigate environmental impacts of light pollution for people, surrounding adjacent properties.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

Section 6 Resource Efficiency

P009	ID 8017	601.5 Prefabricated components	Final Formal Action: Accept as Modified
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	(5) manufactured home construction for the entire building located above grade		
Reason:	The NGBS does not apply to manufactured housing.		
CC Action:	Accept as Modified		
CC Modification:	<p>In addition to the proposal above, remove the definition from Manufactured home and the reference standard to HUD code.</p> <p>‘MANUFACTURED HOME CONSTRUCTION. Threedimensional sections of the complete building, dwelling unit, or sleeping unit built in a factory in conformance with the HUD Manufactured Home Construction and Safety Standards (24 CFR, Part 3280) and transported to the jobsite to be joined together on a foundation.’</p>		
CC Reason:	<p>The NGBS never included ‘manufactured housing under HUD code’. (Manufactured housing falls under HUD code and does not fall under IRC- designated by OA). Site and development chapter of NGBS would not apply to manufactured housing given their different process, foundation structures, etc.</p> <p>CC recommends removing Manufactured Housing section as it falls outside of the ‘Residential Designation’ in section 101.2.1 so it is out of scope of NGBS.</p> <p>CC recommends that HI work with HUD and interested parties that explores Manufactured Housing.</p>		
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P010	ID 8046	602.1 Moisture management ? building envelope	Final Formal Action: Accept as Modified
Submitter:	Carl Seville, SK Collaborative		
Comment:	<p>(2) All window and door head and jamb flashing is either self-adhered flashing complying with AAMA 711 or liquid applied flashing complying with AAMA 714 and installed in accordance with fenestration or flashing manufacturer’s installation instructions. 2 M</p> <p>(3) Pan flashing is installed at sills of all exterior windows and doors. 3 M</p> <p>(4) Seamless, preformed kickout flashing or prefabricated metal with soldered seams is provided at all roof-to-wall intersections. The type and thickness of the material used for roof flashing including but not limited kickout and step flashing is commensurate with the anticipated service life of the roofing material. 3 M</p>		
Reason:	Window and door head, jamb, and sill flashing and kickout flashing are critical elements to preventing moisture damage in wood framed structures. These should all be required.		
CC Action:	Accept as Modified		

P012	ID 8012	602.1 Moisture management ? building envelope	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	Move entire 602.1.15 practice to section 608 and renumber. Apply a similar change to 11.602.1.15.		
Reason:	It is incorrect to have the kitchen cabinet practice under section 602.1 Moisture Management. It is better suited under 608 Resource-Efficient Materials.		
CC Action:	Accept as Modified		
CC Modification:	Move section to a new section 602.5 and 11.602.5, and renumber remaining sections.		
CC Reason:	Move the section out of the Moisture Section, but have it remain under durability and reduced maintenance.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P013	ID 8006	602.2 Roof surfaces	Final Formal Action: Accept
Submitter:	Jonathan Humble, American Iron and Steel Institute		
Comment:	<p>CHAPTER 6 <i>(Modify as shown below)</i></p> <p>602.2 Roof surfaces. A minimum of 90% of roof surfaces, not used for roof penetrations and associated equipment, on-site renewable energy systems such as photovoltaics or solar thermal energy collectors, or rooftop decks, amenities and walkways, are constructed of one or more of the following:</p> <p>(1) products that are in accordance with the ENERGY STAR® cool roof certification or equivalent.</p> <p>(2) a vegetated roof system.</p> <p>(3) (1) Minimum initial SRI of 78 for low-sloped roof (a slope less than 2:12) and a minimum initial SRI of 29 for a steep-sloped roof (a slope equal to or greater than 2:12). The SRI is calculated in accordance with ASTM E1980. Roof products are <u>certified rated</u> and labeled <u>in accordance with the CRRC-1 Program</u>.</p> <p><u>(2) a vegetated roof system.</u></p> <p>CHAPTER 11</p> <p><i>(Modify as shown below)</i></p> <p>11.602.2 Roof surfaces. A minimum of 90% of roof surfaces, not used for roof penetrations and associated equipment, on-site renewable energy systems such as photovoltaics or solar thermal energy collectors, or rooftop decks, amenities and walkways, are constructed of one or more of the following...</p> <p>(1) products that are in accordance with the ENERGY STAR® cool roof certification or equivalent.</p> <p>(2) a vegetated roof system.</p> <p>(3) (1) Minimum initial SRI of 78 for low-sloped roof (a slope less than 2:12) and a minimum initial SRI of 29 for a steep-sloped roof (a slope equal to or greater than 2:12). The SRI is calculated in accordance with ASTM E1980. Roof products are <u>certified rated</u> and labeled <u>in accordance with the CRRC-1 Program</u>.</p>		

(2) a vegetated roof system.

Section 14

REFERENCED DOCUMENTS

1402.0 Referenced Documents

(Modify as shown below)

ENERGY STAR® Documents

DOCUMENT

DATE

TITLE

SECTION

~~ENERGY STAR®~~

~~2012~~

~~ENERGY STAR Program Requirements for Roof Products — Eligibility Criteria Version 2.3~~

~~602.2(1)~~

~~11.602(1)~~

Cool Roof Rating Council Documents

DOCUMENT

DATE

TITLE

SECTION

CRRC-1 Program

2021

CRRC-1 Product Rating Program Manual

602.2(1)

11.602(1)

Reason:

Problem statement: The U.S. Environmental Protection Agency (EPA) announced in 2018 that it will sunset the EPA ENERGY STAR roof product certification program on June 1, 2022, which means there will no longer be ENERGY STAR certified roofing products in the marketplace or a publicly available list of certified products to

	<p>help consumers with compliance. The references to ENERGY STAR certified roofing products in the ICC 700 standard will no longer be relevant beginning June 1, 2022. Proposal: We recommend that the existing references to ENERGY STAR certified roofing products be replaced with references to the CRRC-1 Program in the next edition of ICC 700 standard. Also, we proposed that the listing be organized such that the roof requirements appear as #1 and the option to install a vegetated roof be #2 since the title to the provisions is “roof surfaces.” Reason Statement: The sunset of the ENERGY STAR roofing program will make it virtually impossible for users of the ICC 700 standard to comply with the cool roof compliance options, as EPA will prohibit the use of the ENERGY STAR logo on roofing products (including marketing materials and data sheets) on and after June 1, 2022. Additionally, the ENERGY STAR Qualified Products List will no longer include certified roofing products as of June 1, 2022. This means that architects, contractors, and builders will not be able to comply with the cool roof compliance options in the ICC 700 standard because ENERGY STAR certified roofing products will no longer be in existence. This is problematic because peer-reviewed, independent research has extensively shown that cool roofs are a relatively inexpensive option for reducing building energy use. Moreover, cool roofs can help mitigate the impacts of the urban heat island effect; improve occupant comfort; improve outdoor air quality by reducing smog production; lower peak energy demand and increase electrical grid stability (which helps lower brownouts and blackouts); and decrease the generation of greenhouse gas emissions. The CRRC is the only other third-party and independent resource with a publicly available list of rated roofing products and initial and three-year aged solar reflectance, thermal emittance, and SRI values. The CRRC is a 501(c)(3) nonprofit organization established in 1998 to develop accurate and credible methods for evaluating and labeling the radiative properties of roofing products. The CRRC also provides education to the public on how cool roofs can help improve building energy efficiency, increase occupant comfort, mitigate the impacts of the urban heat Island effect, and reduce greenhouse gas emissions. The CRRC created a third-party rating system for the radiative performance of roofing products in 2002 called the CRRC-1 Product Rating Program (CRRC-1 Program). The CRRC-1 Program is referenced in several building energy codes, including California’s Title 24, Part 6 standards. The CRRC-1 Program is regularly updated with participation and input from a diverse array of stakeholders. Please note that participation in the CRRC-1 Program is separate and distinct from CRRC Membership. A roofing product manufacturer is not required to be a member of the CRRC to have their product(s) tested and listed in accordance with the CRRC-1 Program, which also includes listing in the free, online CRRC Rated Roof Products Directory (https://coolroofs.org/directory/roof). Through the CRRC-1 Program, roofing product manufacturers and sellers have the opportunity to get their products tested and labeled with measured initial and three-year aged radiative properties. These properties are determined and verified through testing by Accredited Independent Testing Laboratories (AITL) and a process of random testing. The CRRC-1 Program requirements are detailed in the CRRC-1 Product Rating Program Manual. The CRRC-1 Product Rating Program Manual includes:</p> <ul style="list-style-type: none"> • Accredited testing laboratories requirements • Approved test farms weathering requirements • Testing requirements • Product rating and licensing requirements • Random Testing procedures • Labeling requirements <p>CRRC Rated Roof Products Directory: This is a free, online database that currently lists the initial and three-year aged solar reflectance, thermal emittance, and solar reflectance index (SRI) values of over 3,000 roofing products. A CRRC product rating describes the radiative performance (solar reflectance and thermal emittance) of a roofing material; it does not indicate a ranking or approval. A product’s placement in the Rated Products Directory does not mean that the product is “cool” as defined by any particular code or program. Only products with active ratings can be found in the Rated Roof Products Directory. Request to meet with ICC-700 Committee: The CRRC would appreciate the opportunity to speak with the ICC-700 consensus committee when this item is presented for consideration. Resources: About the CRRC please see: https://coolroofs.org/about A copy of the CRRC-1 Product Rating Program Manual can be downloaded at no charge at this address: https://coolroofs.org/documents/CRRC-1-Program-Manual.pdf To view the CRRC Rated Roof Products Directory please see: https://coolroofs.org/directory/roof</p>
CC Action:	Accept
CC Modification:	
CC Reason:	

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P014	ID 8073	604.1 Recycled content	Final Formal Action: Accept as Modified
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	604.1 Recycled content. Building materials with recycled content are used for two minor and/or two major components of the building are installed for a minimum of 10% (2 pts), 15% (3 pts), 20% (4 pts), 25% (5 pts), or 30% (6 pts) of all building materials, by cost. Exclude mechanical, electrical, and plumbing materials from total material cost.		
Reason:	The current component-based criteria limits the incentive for projects to specify recycled content materials beyond a few materials.		
CC Action:	Accept as Modified		
CC Modification:	<p>604.<u>0</u> Recycled content. <u>Choose one of the following:</u></p> <p>(1) <i>Existing language from 604.1</i></p> <p>(2) Weight/volume</p> <p><u>Exclude mechanical, electrical, and plumbing materials from total material cost.</u></p> <p><u>Building materials with recycled content are used for two minor and/or two major components of the building are installed for a minimum of 10% (2 pts), 15% (3 pts), 20% (4 pts), 25% (5 pts), or 30% (6 pts) of all building materials, by cost, weight, or volume. Or, building materials with a minimum of 20% pre- or post-consumer recycled content are used for at least 4 minor components or 2 major components (1 pt).</u></p> <p><i>Strike existing table with point values</i></p>		
CC Reason:	Have a whole building approach for using recycled content. Give the option of component and percentage base		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P015	ID 8074	605.2 Construction waste management plan	Final Formal Action: Disapprove
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	Change from optional to mandatory.		
Reason:	Construction waste management is readily achievable.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	In favor of action on A029.		

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. APPROVE - Joshua Robert Stack: Following committee recommendation.

P016	ID 8071	606.2 Wood-based products	Final Formal Action: Accept as Modified
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	<u>Mandatory Provision: Tropical wood products must be certified by either the Forest Stewardship Council (FSC) or have SFI certification (or equivalent certification).</u>		
Reason:	Tropical wood harvesting has significant environmental impacts to biodiversity and carbon sequestration.		
CC Action:	Accept as Modified		
CC Modification:	<p><u>606.2.1 Tropical Wood Products. Tropical wood products must be certified to one of the standards in 606.2.2.</u></p> <p><i>Prior 606.2 language is now 606.2.2.</i></p> <p><u>Include the following definition to Chapter 2:</u></p> <p><u>TROPICAL WOOD PRODUCTS: products sourced from between the Tropic of Cancer and Tropic of Capricorn.</u></p>		
CC Reason:	Added definition to increase clarity. Be inclusive of the previously recognized wood certification programs.		

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 1 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. DISAPPROVE COMMITTEE ACTION - Jeff Bradley: Responsible sourcing requirements are beneficial for tropical woods, but this provision may have an unintended consequence of discouraging locally harvested wood use in areas such as Puerto Rico. Recommend requiring responsibly sourced wood requirements such as ASTM D7612 responsibly sourced or SFI Certified Sourcing for those tropical areas. Task Group 1 Response: Non-persuasive Reason: Provisions for D7612 and SFI Certified Sourcing currently exist in the standard. The TG encourages that specific changes to the language be submitted during the public comment period on the Draft Standard.

P017	ID 8072	606.2 Wood-based products	Final Formal Action: Disapprove
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	<u>Mandatory Provision: A minimum of at least 20% of permanently installed wood material, by cost, must be certified to one of the standards listed in 606.2.</u>		

Reason:	The intent of the proposed change is to set a minimum environmental standard for NGBS certified buildings. Many NGBS projects are wood framed. Since wood is a primary building material there would be environmental benefits to setting a minimum requirement for certified wood. SFI and FSC are widely available and are cost effective in many applications.
CC Action:	Disapprove
CC Modification:	
CC Reason:	In favor of action on A030.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. APPROVE - Joshua Robert Stack: Following committee recommendation.

P018	ID 8090	612 INNOVATIVE PRACTICES	Final Formal Action: Disapprove
Submitter:	Marla Esser Cloos, Self		
Comment:	<u>Health and Wellness Professional.</u> At least one member of the design and build team will be trained or certified in health and wellness with regards to resource, product and material selections, practices and uses in the project.		
Reason:	Many practices in Chapter 6: Resource Efficiency inherently include health and wellness considerations around moisture management, materials selection, and product declarations. One or more team members being trained or certified in health and wellness will help to ensure that resource, product and material selections, practices and uses are chosen and implemented to prioritize building workers' and residents' health and wellness in the home. Additional information about the importance of materials, moisture management, material selection and sustainable products to support residents' health and wellness may be found in NGBS Green+ Badges Workbook, NGBS+ Wellness section, starting on p. 14.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	While many materials that could receive credit in Chapter 6 undoubtedly have health and wellness impacts, those considerations do not fit within the material properties that receive credit under Chapter 6.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P019	ID 8058	613 RESILIENT CONSTRUCTION	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	Delete the entire 613 section and replace with the following: <u>613 RESILIENT CONSTRUCTION</u>		

	<p><u>613.1 Vulnerability Assessment. An assessment of the property's risks to climate, seismic, and natural disasters is performed. Strategies are identified to enable the project to adapt to and mitigate hazard risks. The assessment is shared with the Building Owner. ...3 points</u></p> <p><u>613.2 Resilient Energy Systems & Passive Survivability</u></p> <p><u>613.2(1) On-site PV systems and/or efficient generators are designed and installed to provide emergency power for residents to safely shelter during power outages. ...3 points</u></p> <p><u>613.2(2) Water storage and purifications systems are designed and installed to provide potable water during power outages. ...4 points</u></p> <p><u>613.3 Floodproofing. Lower floors and all mechanical areas are floodproofed. ...2 points</u></p>
Reason:	Home Innovation has observed that practically no users have pursued 613 Resilient Construction. Two main factors have handicapped its usefulness. First, the practice offers too much flexibility. When many are still learning how to factor resiliency into their design and construction, users need more structure to be successful. (2) The Resilient Construction practice requires a design professional to generate the performance-based analysis. This adds additional cost and time. Projects that are being constructed/re-built using federal disaster recovery funds have especially tight budgets and are unable to factor in this additional cost.
CC Action:	Accept as Modified
CC Modification:	<p><i>Modify as follows:</i></p> <p><u>613.2 Resilient Energy Systems & Passive Survivability</u></p> <p><u>Buildings are designed and constructed to maintain safe thermal conditions and safe water availability in the event of an extended power outage or loss of heating fuel, or provide back-up power to satisfy critical loads:</u></p> <p><u>613.2(1) On-site PV systems with battery backup and/or generators are designed and installed to provide emergency power for residents to safely shelter during power outages. ... (4 points for PV, 2 points for generator)</u></p>
CC Reason:	Removed vulnerability assessment and floodproofing that's covered by 613 and added passive survivability through envelope design. Note: Consensus Committee took out water filtration and thermal envelope requirements with the intent of addressing this section further during the public comments phase.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

Additional TG Proposed Changes

A021	ID 8126	602.1.1 Capillary breaks	Final Formal Action: Accept
Submitter:	Aaron Gary, Tempo, Inc.		
Comment:	<p><u>602.1.1.1 A capillary break and vapor retarder are installed at concrete slabs in accordance with IRC Sections R506.2.2 and R506.2.3 or IBC Sections 1907 and 1805.4.1 IRC Sections R506.2.2 and R506.2.3 or IBC Sections 1907 and 1805.4.1. M</u></p>		

	11.602.1.1.1 A capillary break and vapor retarder are installed at concrete slabs in accordance with IRC Sections R506.2.2 and R506.2.3 or IBC Sections 1907 and 1805.4.1 IRC Sections R506.2.2 and R506.2.3 or IBC Sections 1907 and 1805.4.1. M*
Reason:	Update ICC Section #s to correlate with 2024 IBC & IRC
CC Action:	Accept
CC Modification:	
CC Reason:	
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A022	ID 8125	602.1.1 Capillary breaks	Final Formal Action: Accept
Submitter:	Tom Marks and Ryan Goodwin, Stego Industries, LLC		
Comment:	<p><i>(Modify as shown below)</i></p> <p>Section 602.1.1 Capillary breaks 602.1.1.1 A capillary break and vapor retarder are installed at concrete slab in accordance with IRC Sections R506.2.2 and R506.2.3 or IBC 1907 and 1805.4.1.....M</p> <p>602.1.1.2 A capillary break between the footing and the foundation wall is provided to prevent moisture migration into foundation wall.....3</p> <p><u>602.1.1.3 A minimum 10-mil vapor retarder meeting ASTM E1745 is installed per ASTM E1643.....3</u></p> <p><u>602.1.1.4 A minimum 15-mil vapor retarder meeting ASTM E1745 with water vapor permeance rating below 0.01 US perms [grains/(ft²*hr*in-Hg)] is installed per ASTM E1643.....6</u></p> <p><u>Additional Reference Standards:</u></p> <p><u>ASTM E1745-17 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs</u></p> <p><u>ASTM E1643-18a Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs</u></p>		
Reason:	A below-slab vapor retarder that meets ASTM E1745 is a simple and low-cost pathway to contribute to a healthier and more durable building or home. Below-slab vapor retarders meeting ASTM E1745, the consensus-developed standard specification, will have better and more consistent performance (e.g. water vapor permeance, material strength, and longevity) compared to generic 6-mil polyethylene sheeting historically referenced in the IRC and IBC. Below-slab vapor retarders which meet ASTM E1745 are recommended industry best practice and referenced in other industry guidelines and standards. This is an opportunity to reward project teams who are already incorporating better foundation vapor control and incentivize above-code best practice for others.		

	<p>A vapor retarder with less than 0.01 perms is recognized by the American Concrete Institute as beneficial for slabs which will or could receive moisture-sensitive flooring (note: ACI defines a below-slab vapor membrane with less than 0.01 perms as a vapor “barrier”). A 15-mil thick membrane is most likely to achieve this referenced vapor permeance before and after mandatory conditioning tests per ASTM E1745 given current high-performance membrane technology. A minimum thickness is also helpful for third-party verifiers.</p> <p>The current consensus standard for the installation of a below-slab plastic vapor retarder is ASTM E1643. These best practices help ensure the efficacy of the installed system. Project teams should be recognized for ensuring proper installation of all building envelope materials, including the first side of the building below the slab/foundation.</p>
CC Action:	Accept
CC Modification:	
CC Reason:	
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A023	ID 8128	602.1.4 Crawlspace	Final Formal Action: Accept
Submitter:	Aaron Gary, Tempo, Inc.		
Comment:	<p>602.1.4.2 Crawlspace that is built as a conditioned area is sealed to prevent outside air infiltration and provided with conditioned air at a rate not less than 0.02 cfm (.009 L/s) per sq. ft. of horizontal area and one of the following is implemented:</p> <p>(1) a concrete slab over 6-mil polyethylene sheeting, or other Class I vapor retarder installed in accordance with IRC Section 408.3 or Section 506 <u>IRC Section R408.3 or Section R506.</u> 8</p> <p>(2) 6-mil polyethylene sheeting, or other Class I vapor retarder installed in accordance with IRC Section 408.3 or Section 506 <u>R408.3 or Section R506.</u> M</p> <p>11.602.1.4.2 Crawlspace that is built as a conditioned area is sealed to prevent outside air infiltration and provided with conditioned air at a rate not less than 0.02 cfm (.009 L/s) per sq. ft. of horizontal area and one of the following is implemented:</p> <p>(1) a concrete slab over 6-mil polyethylene sheeting, or other Class I vapor retarder installed in accordance with IRC Section 408.3 or Section 506 <u>IRC Section R408.3 or Section R506.</u> 8</p> <p>(2) 6-mil polyethylene sheeting, or other Class I vapor retarder installed in accordance with IRC Section 408.3 or Section 506 <u>R408.3 or Section R506.</u> M*</p>		
Reason:	Update ICC Section #s to correlate with 2024 IBC & IRC		
CC Action:	Accept		

CC Modification:	
CC Reason:	
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A024	ID 8127	602.1.4 Crawlspace	Final Formal Action: Accept
Submitter:	Tom Marks and Ryan Goodwin, Stego Industries, LLC		
Comment:	<p><i>(Modify as show below)</i></p> <p>602.1.4 Crawlspace</p> <p>602.1.4.1 Vapor retarder in unconditioned vented crawlspace is in accordance with the following, as applicable. Joints of vapor retarder overlap a minimum of 6 in. (152 mm) and are taped.</p> <p>(2)(1) Walls. Dampproof walls are provided below finished grade.....M</p> <p>(1)(2) Floors. Minimum 6-mil Class I vapor retarder installed on the crawlspace floor and extended at least 6 in. up the wall and is attached and sealed to the wall.....6</p> <p><u>(3) Floors. Class I vapor retarder which complies with ASTM E1745 installed on the crawlspace floor and extended at least 6 in. up the wall and is attached and sealed to the wall.....8</u></p> <p>602.1.4.2 Crawlspace that is built as conditioned area is sealed to prevent outside air infiltration and provided with conditioned air at a rate not less than 0.02 cfm (.009 L/s) per sq. ft. of horizontal area and one of the following is implemented:</p> <p>(2)(1) 6-mil polyethylene sheeting, or other Class I vapor retarder installed in accordance with IRC Section 408.3 or Section 506.....M</p> <p>(1)(2) a concrete slab over 6-mil polyethylene sheeting, or other a Class I vapor retarder <u>or vapor retarder per Section 602.1.1</u> installed in accordance with IRC Section 408.3 or Section 506.....8</p> <p><u>(3) a vapor retarder which complies with ASTM E1745 and minimum 10-mil thick installed on the crawlspace floor and extended at least 6 in. up the wall and is attached and sealed to the wall...8</u></p>		
Reason:	<p>The IRC references a Class I vapor retarder as ground cover in crawl spaces, not a 6-mil thick vapor retarder. If there was intent to align the Mandatory practices with the IRC, reference to 6-mil polyethylene should be removed. 6-mil polyethylene sheeting may not always have a Class I water vapor permeance.</p> <p>Class I only correlates to material water vapor permeance and has nothing to do with the vapor retarder strength, durability, or longevity in a crawl space. ASTM E1745 is a useful performance standard for higher performance, more durable, and long-lasting vapor retarder films. Particularly for an exposed membrane (not covered by concrete) a minimum thickness is also helpful to achieve vapor protection that withstands future</p>		

	<p>traffic and crawlspace conditions. This is important for a Section related to Enhanced Durability and Reduced Maintenance.</p> <p>Section 506 of the IRC is in reference to vapor retarders below slabs and should not be referenced for exposed vapor retarder as ground cover in a crawl space.</p> <p>Also, have reordered, per sub-group discussion, to make Mandatory path first.</p>
CC Action:	Accept
CC Modification:	
CC Reason:	
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A025	ID 8129	602.1.7 Moisture control measures	Final Formal Action: Accept as Modified
Submitter:	Theresa Weston, The Holt Weston Consultancy representing ABAA		
Comment:	<p>602.1.7.3 Building envelope assemblies are designed for moisture control based on documented hygrothermal simulation or field study analysis. Hygrothermal analysis is required to <u>shall comply with ASHRAE 160 or equivalent criteria and</u> shall incorporate representative climatic conditions, interior conditions and include heating and cooling seasonal variation. <u>Results of the hygrothermal simulation shall be reported in accordance with ASTM E3054..... 4</u></p> <p>Add References:</p> <p>ASHRAE Standard 160-2021 -- Criteria for Moisture-Control Design Analysis in Buildings</p> <p>ASTM E3054/E3054M-16 Standard Guide for Characterization and Use of Hygrothermal Models for Moisture Control Design in Building Envelopes</p>		
Reason:	Adds standardization of the hygrothermal simulation through appropriate industry standards.		
CC Action:	Accept as Modified		
CC Modification:	<p><i>Modify as follows</i></p> <p>602.1.7.3 Building envelope assemblies are designed for moisture control based on documented hygrothermal simulation or field study analysis. Hygrothermal analysis is required to <u>shall comply with ASHRAE 160 or equivalent criteria and</u> shall incorporate representative climatic conditions, interior conditions and include heating and cooling seasonal variation. <u>Results of the hygrothermal simulation shall be reported in accordance with ASTM E3054..... 4</u></p> <p>Add References:</p> <p>ASHRAE Standard 160-2021 -- Criteria for Moisture-Control Design Analysis in Buildings</p>		

	ASTM E3054/E3054M-16 Standard Guide for Characterization and Use of Hygrothermal Models for Moisture Control Design in Building Envelopes
CC Reason:	ASHRAE 160 includes a section on reporting requirement. Adding an additional reporting standard did not seem necessary.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 1 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. DISAPPROVE COMMITTEE ACTION - Jeff Bradley: Unsure that ASHRAE 160 is necessary in this case, may be better to leave this requirement more open. Task Group 1 Response: Non-Persuasive Reason: If an applicable, widely used, and recognized standard exists, then it should be used.

A026	ID 8130	602.1.9 Flashing	Final Formal Action: Accept
Submitter:	Theresa Weston, The Holt Weston Consultancy representing ABAA		
Comment:	<p>Add to Section 202 Definitions:</p> <p><u>RAINSCREEN SYSTEM. An assembly applied to the exterior side of an exterior wall which consists of, at minimum, an outer layer, an inner layer, and a cavity between them sufficient for the passive removal of liquid water and water vapor.</u></p> <p><i>Modify Section 602.1.9 (5) as follows:</i></p> <p>602.1.9 (5) <u>602.1.10 Rainscreen Systems. A rainscreen system wall design as follows is used for in exterior wall assemblies. 4 max</u></p> <p><u>(1) (a) A system designed with minimum 1/4-in. air space3/16-in ventilated and drained space exterior to the water-resistive barrier for buildings not greater than 3 stories or 3/8-in ventilated and drained space exterior to the water-resistive barrier for buildings greater than 3 stories. vented to the exterior at top and bottom of the wall, and integrated with flashing details. The space shall allow for ventilation to the exterior at top and bottom of the wall, and shall be integrated with flashing details with a clear drainage path to the exterior; or</u> 4</p> <p><u>(b) A cladding material or a water-resistive barrier with enhanced drainage, meeting 75<u>90</u>% drainage efficiency determined in accordance with ASTM E2273 or Annex A2 of ASTM E2925. 2</u></p> <p><i>Renumber Remaining Section as appropriate.</i></p>		
Reason:	<p>This proposal has several parts all aimed at clarifying the “rainscreen” credit section:</p> <p>(1) Adds the definition of “rainscreen system” which was added to the IBC-2024</p> <p>(2) Moves the rainscreen system out of flashing section, as rainscreen systems are more than just a flashing subset</p> <p>(3) Modifies the behind cladding air space size to be better aligned with industry products and to be responsive to the building height</p>		

	(4) Adds an alternate drainage test method which is a more general method. The current method is specific to EIFS. This is consistent with the IBC and IRC stucco provisions.
CC Action:	Accept
CC Modification:	
CC Reason:	
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A027	ID 8155	602.2 Roof Surfaces	Final Formal Action: Disapprove
Submitter:	Craig Conner, Building Quality		
Comment:	The following help cool the building cool roofs with an SRI of XXX asphalt surfaces with an XXX of XXX		
Reason:	The asphalt surfaces are being used (tested?) under the Phoenix Cool Pavement Program. I believe the cool pavements have been in place to about 2 years. Program is managed by City of Phoenix Street Transportation Department. Cool roofs should use same criteria that is in place for EPA cool roofs and NGBS. NGBS should only require the SRI, not the whole EPA cool roof program. Should there be a criteria for concrete surfaces too? Should cool walls somehow be included? Maybe not.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Suggestion is already in practice and details aren't written down. SRI is included in the latest language for cool roofs.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A028	ID 8131	604.2 Concrete Materials	Final Formal Action: Accept as Modified
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	<u>Use concrete with recycled content cementitious materials per the below thresholds.</u> <u>20% Recycled Cementitious Material (1 pt).</u>		

	<p><u>25% Recycled Cementitious Material (2 pts).</u></p> <p><u>30% Recycled Cementitious Material (3 pts).</u></p> <p><u>35% Recycled Cementitious Material (4 pts).</u></p> <p><u>40% Recycled Cementitious Material (5 pts).</u></p> <p><u>Include recycled content aggregate for at least 10% of aggregate material (1 pt).</u></p> <p><u>Reduce the carbon emissions associated with portland cement production in concrete mixes per the below thresholds through strategies other than those in Section A above:</u></p> <p><u>5% reduced carbon emissions (1 pt)</u></p> <p><u>10% reduced carbon emissions (2 pts)</u></p> <p><u>20% reduced carbon emissions (3 pts)</u></p> <p><u>Points for recycled content concrete can only be achieved in either 604.1 or 604.2.</u></p>
Reason:	Cement production is a significant source of global CO2 emissions, accounting for 8% of global emissions.
CC Action:	Accept as Modified
CC Modification:	<p><i>2020 NGBS as Follows:</i></p> <p><u>Use supplementary cementitious materials instead of Portland cement in concrete with not less than the following:</u></p> <p><u>20% supplementary Cementitious Material (1 pt).</u></p> <p><u>30% supplementary Cementitious Material (3 pts).</u></p> <p><u>40% supplementary Cementitious Material (5 pts).</u></p> <p><u>Include recycled content aggregate for at least 10% of aggregate material (1 pt).</u></p> <p><i>Point Note: <u>Points not awarded if points are taken under 604.1</u></i></p>
CC Reason:	Section is for recycled content, not carbon emissions. Carbon emissions are addressed in the LCA section.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A029	ID 8132	605.2 Construction waste management plan	Final Formal Action: Accept as Modified
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	A construction waste management plan is developed, posted at the jobsite, and implemented diverting, through reuse, salvage, recycling, or manufacturer reclamation, a minimum of 50 <u>30</u> percent (by weight) of nonhazardous construction and demolition waste from disposal. For this practice, land clearing debris is not		

	<p>considered construction waste. Materials used as alternative daily cover are considered construction waste and do not count toward recycling or salvaging.</p> <p>For buildings following the new construction path that also have a renovation component, the waste management plan includes the recycling of 95 percent of electronic waste components (such as printed circuit boards from computers, building automation systems, HVAC, fire and security control boards) by an E-Waste recycling facility. <u>(Mandatory, 3 pts)</u></p> <p>Exceptions:</p> <p>Waste materials generated from land clearing, soil and sub-grade excavation and vegetative debris shall not be in the calculations.</p> <p>A recycling facility (traditional or E-Waste) offering material receipt documentation is not available within 50 miles of the jobsite. <u>Areas that don't have local construction waste recycling services must submit a plan that diverts or reduces waste generation for at least 2 materials (e.g., cardboard, metals).</u></p> <p><u>Divert at least 50% of construction and demolition waste from disposal (4 pts)</u> <u>Divert at least 70% of construction and demolition waste from disposal (6 pts)</u></p>
Reason:	Construction waste accounts for over 66% of the total waste generated in the US (EPA, 2018). This represents about 600 million tons of construction and demolition waste per year. Construction waste management is readily achievable in many areas of the country.
CC Action:	Accept as Modified
CC Modification:	<p><i>Modify as follows:</i></p> <p>A construction waste management plan is developed, posted at the jobsite, and implemented diverting, through reuse, salvage, recycling, or manufacturer reclamation, a minimum of 50-30 percent (by weight) of nonhazardous construction and demolition waste from disposal. For this practice, land clearing debris is not considered construction waste. Materials used as alternative daily cover are considered construction waste and do not count toward recycling or salvaging. <u>(Mandatory)</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Waste materials generated from land clearing, soil and sub-grade excavation and vegetative debris shall not be in the calculations. 2. A recycling <u>or comingled recycling</u> facility (traditional or E-Waste) offering material receipt documentation is not available within 50 miles of the jobsite. <p><u>Areas that don't have local construction waste recycling services per exception 2 develop and implement a plan that diverts or reduces waste generation for at least 2 materials (e.g., cardboard, metals)..... (3 points)</u></p> <p><u>Divert at least 50% of construction and demolition waste from disposal (4 pts)</u> <u>Divert at least 70% of construction and demolition waste from disposal (6 pts)</u></p> <p>For buildings following the new construction path that also have a renovation component, the waste management plan includes the recycling of 95 percent of electronic waste components (such as printed circuit boards from computers, building automation systems, HVAC, fire and security control boards) by an E-Waste recycling facility. <u>3 points</u></p>
CC Reason:	Modified to incentivize recycling in regions that do not have recycling facilities. E-waste should not be mandatory but should be rewarded with points.

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. APPROVE WITH COMMENT - Farah Qadeer: It is unclear to me why the threshold has been lowered to 30%, from 50%. This should be clarified under Committee Reason.

A030	ID 8133	606.2 Wood-based products	Final Formal Action: Accept as Modified
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	<p>Wood or wood-based products are certified to the requirements of one of the following.</p> <p><u>(1) A minimum of at least 10% of permanently installed wood material, by cost, or area must be certified to one of the standards listed below. Alternatively, 1 major component or 2 minor components certified to a standard listed below comply. Projects that achieve 3 points under 601.2, Material Usage, automatically comply (Mandatory, 2 pts)</u></p> <p><u>(2) A minimum of at least 30% of permanently installed wood material, by cost, or area must be certified to one of the standards listed below. Alternatively, 2 major components or 3 minor components certified to a standard listed below comply (3 pts)</u></p> <p><u>(3) A minimum of at least 50% of permanently installed wood material, by cost, or area must be certified to one of the standards listed below. Alternatively, 3 major components or 4 minor components certified to a standard listed below comply (4 pts)</u></p> <p>American Forest Foundation’s American Tree Farm System (ATFS) Canadian Standards Association’s Sustainable Forest Management System Standards (CSA Z809) Forest Stewardship Council (FSC) Program for Endorsement of Forest Certification Systems (PEFC) Sustainable Forestry Initiative Program (SFI) National Wood Flooring Association’s Responsible Procurement Program (RPP) Other product programs mutually recognized by PEFC A manufacturer’s fiber procurement system that has been audited by an approved agency as compliant with the provisions of ASTM D7612 as a responsible or certified source. Government or tribal forestlands whose water protection programs have been evaluated by an approved agency as compliant with the responsible source designation of ASTM D7612 are exempt from auditing in the manufacturer’s fiber procurement system.</p>		
Reason:	<p>Certified wood has significant environmental benefits including habitat protection. Wood materials form the majority of most residential building materials, particularly for single family, low-rise and mid-rise buildings. The NGBS list of qualifying materials in 606.2 is comprehensive and represents widely available products. FSC estimates that ~16% of global timber are FSC certified. In the US an estimated 13% of all forest areas are certified forest (US Endowment for Forestry and Communities). The additional options in 606.2 increase the percent of the market that qualifies. Certified wood is a marketable feature of a green home.</p> <p>A cost analysis based on the 10% threshold is as follows. Assuming wood materials account for \$40,000 of a single family home cost, which is at the higher end of the cost scale the practice can be achieved with \$4,000 of certified wood materials. Assuming a 25% premium for certified wood, which is also on the higher end of the scale, the practice would have an \$800 cost premium or 2% of the overall wood cost for the project.</p>		

CC Action:	Accept as Modified
CC Modification:	<p><i>Modify as follows:</i></p> <p>Wood or wood-based products are certified to the requirements of one of the following.</p> <p>(1) A minimum of two responsible or certified wood-based products are used for minor components of the building (3 pts).</p> <p>(2) A minimum of two responsible or certified wood-based products are used in major components of the building (4 pts).</p> <p><u>(1) A minimum of at least 10% of permanently installed wood material, by cost, or area must be certified to one of the standards listed below. Alternatively, 1 major component or 2 minor components certified to a standard listed below comply. (2 pts)</u></p> <p><u>(2) A minimum of at least 30% of permanently installed wood material, by cost, or area must be certified to one of the standards listed below. Alternatively, 2 major components or 3 minor components certified to a standard listed below comply (3 pts)</u></p> <p><u>(3) A minimum of at least 50% of permanently installed wood material, by cost, or area must be certified to one of the standards listed below. Alternatively, 3 major components or 4 minor components certified to a standard listed below comply (4 pts)</u></p> <p>American Forest Foundation’s American Tree Farm System (ATFS) Canadian Standards Association’s Sustainable Forest Management System Standards (CSA Z809) Forest Stewardship Council (FSC) Program for Endorsement of Forest Certification Systems (PEFC) Sustainable Forestry Initiative Program (SFI) National Wood Flooring Association’s Responsible Procurement Program (RPP) Other product programs mutually recognized by PEFC A manufacturer’s fiber procurement system that has been audited by an approved agency as compliant with the provisions of ASTM D7612 as a responsible or certified source. Government or tribal forestlands whose water protection programs have been evaluated by an approved agency as compliant with the responsible source designation of ASTM D7612 are exempt from auditing in the manufacturer’s fiber procurement system.</p>
CC Reason:	Prefer this practice remain optional. Points can be reviewed during public comment phase.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A031	ID 8134	607.1 Recycling and Composting	Final Formal Action: Accept as Modified
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	1. A readily accessible space(s) for recyclable material containers is provided and identified on the		

	<p>floorplan of the house or dwelling unit or a readily accessible area(s) outside the living space is provided for recyclable material containers and identified on the site plan for the house or building. The area outside the living space shall accommodate recycling bin(s) for recyclable materials accepted in local recycling programs.</p> <p><u>2. Provide recycling storage in multifamily common areas including a central storage area adequately sized to meet the anticipated recycling volume for the building. Include recycling infrastructure in multifamily common areas including in mail and package rooms. (Mandatory)</u></p> <p><u>3.</u> A readily accessible space(s) for compostable material containers is provided and identified on the floorplan of the house or dwelling unit or a readily accessible area(s) outside the living space is provided for compostable material containers and identified on the site plan for the house or building. The area outside the living space shall accommodate composting container(s) for locally accepted materials, or, accommodate composting container(s) for onsite composting.</p>
Reason:	Multifamily recycling infrastructure can be readily provided.
CC Action:	Accept as Modified
CC Modification:	<p><i>Modify as follows:</i></p> <p>1. A readily accessible space(s) for recyclable material containers is provided and identified on the floorplan of the house or dwelling unit or a readily accessible area(s) outside the living space is provided for recyclable material containers and identified on the site plan for the house or building. The area outside the living space shall accommodate recycling bin(s) for recyclable materials accepted in local recycling programs.</p> <p><u>2. Provide recycling storage in multifamily common areas including a central storage area to meet the anticipated recycling volume. (...2 points)</u></p> <p><u>3.</u> A readily accessible space(s) for compostable material containers is provided and identified on the floorplan of the house or dwelling unit or a readily accessible area(s) outside the living space is provided for compostable material containers and identified on the site plan for the house or building. The area outside the living space shall accommodate composting container(s) for locally accepted materials, or, accommodate composting container(s) for onsite composting.</p>
CC Reason:	Felt this practice should be optional, not mandatory due to regional differences in recycling availability.
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 1 Abstain: 1 Non-voting: 2</p>
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>DISAPPROVE COMMITTEE ACTION - Farah Qadeer: Unclear why "regional differences in recycling availability" prohibit the allocation of a central recycling location. What are the regional differences?</p> <p>Task Group 1 Response: Non-Persuasive</p> <p>Reason: There are certain regions where recycling programs do not exist. Making the provision optional (worth points) does not prohibit its use but adds flexibility.</p>

A032	ID 8137	612 Innovative Practices	Final Formal Action: Accept
Submitter:	Theresa Weston, The Holt Weston Consultancy representing ABAA, Aaron Gary, Jillian Cooke, Greg Coolidge		
Comment:	<p><i>Move Universal Design practices from 612 (Innovative Practices) into 601. No changes to the practice or points:</i></p> <p>612.3 <u>601.9</u> Universal design elements. Dwelling incorporates one or more of the following universal design elements. Conventional industry construction tolerances are permitted. 12 max</p> <p>(1) Any no-step entrance into the dwelling which 1) is accessible from a substantially level parking or drop-off area (no more than 2%) via an accessible path which has no individual change in elevation or other obstruction of more than 1-1/2 in. in height with the pitch not exceeding 1 in 12; and 2) provides a minimum 32-in. wide clearance into the dwelling. 3</p> <p>(2) Minimum 36-in. wide accessible route from the no-step entrance into at least one visiting room in the dwelling and into at least one full or half bathroom which has a minimum 32-in. clear door width and a 30-in. by 48-in. clear area inside the bathroom outside the door swing. 3</p> <p>(3) Minimum 36-in. wide accessible route from the no-step entrance into at least one bedroom which has a minimum 32-in. clear door width. 3</p> <p>(4) Blocking or equivalent installed in the accessible bathroom walls for future installation of grab bars at water closet and bathing fixture, if applicable. 1</p> <p>(5) All interior and exterior door handles are levers rather than knobs. 1</p> <p>(6) All sink, lavatory and showering controls comply with ICC A117.1. 1</p> <p>(7) Interior convenience Power receptacles, communication connections (for cable, phone, Ethernet, etc.) and switches are placed between 15 in. and 48 in. above the finished floor. Additional switches to control devices and systems (such as alarms, home theaters and other equipment) not required by the local building code may be installed as desired. 1</p> <p>(8) All light switches are rocker-type switches or other similar switches that can be operated by pressing them (with assistive devices). Toggle-type switches may not be used. 1</p> <p>(9) Any of the following systems are automated and can be controlled with a wireless device or voice-activated device: HVAC, all permanently-installed lighting, alarm system, window treatments, or door locks. [1 point awarded per system] 1 [5 max]</p>		
Reason:	The use of the universal design has moved beyond being an “innovative practice” and promotes aging-in-place, thereby reducing future resources required for rework and remodeling.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		

Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.
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A033	ID 8135	612.2 Sustainable products.	Final Formal Action: Accept
Submitter:	Aaron Gary, Tempo, Inc.		
Comment:	<p>612.2 Sustainable products. One or more of the following products are used for at least 30% of the floor or wall area of the entire dwelling unit or the sleeping unit, as applicable. Products are certified by a third-party agency accredited to ISO 17065. 9 max</p> <p>(1) greater than or equal to 50% of carpet installed (by square feet) is certified to NSF 140 or equivalent. 3</p> <p>(2) greater than or equal to 50% of resilient flooring installed (by square feet) is certified to NSF 332 or equivalent. 3</p> <p>(3) greater than or equal to 50% of the insulation installed (by square feet) is certified to UL 2985 or equivalent. 3</p> <p>(4) greater than or equal to 50% of interior wall coverings installed (by square feet) is certified to NSF 342 or equivalent. 3</p> <p>(5) greater than or equal to 50% of the gypsum board installed (by square feet) is certified to UL 100 or equivalent. 3</p> <p>(5) greater than or equal to 50% of the door leafs installed (by number of door leafs) is certified to UL 102 or equivalent. 3</p> <p>(5) greater than or equal to 50% of the tile installed (by square feet) is certified to TCNA A138.1 Specifications for Sustainable Ceramic Tiles, Glass Tiles and Tile Installation Materials or equivalent.. 3</p> <p>11.612.2 Sustainable products. One or more of the following products are used for at least 30% of the floor or wall area of the entire dwelling unit or the sleeping unit, as applicable. Products are certified by a third-party agency accredited to ISO 17065. 9 max</p> <p>(1) greater than or equal to 50% of carpet installed (by square feet) is certified to NSF 140 or equivalent. 3</p> <p>(2) greater than or equal to 50% of resilient flooring installed (by square feet) is certified to NSF 332 or equivalent. 3</p> <p>(3) greater than or equal to 50% of the insulation installed (by square feet) is certified to UL 2985 or equivalent. 3</p> <p>(4) greater than or equal to 50% of interior wall coverings installed (by square feet) is certified to NSF 342 or equivalent. 3</p> <p>(5) greater than or equal to 50% of the gypsum board installed (by square feet) is certified to UL 100 or equivalent. 3</p> <p>(5) greater than or equal to 50% of the door leafs installed (by number of door leafs) is certified to UL 102 or equivalent. 3</p>		

	(57) greater than or equal to 50% of the tile installed (by square feet) is certified to TCNA A138.1 Specifications for Sustainable Ceramic Tiles, Glass Tiles and Tile Installation Materials or equivalent.. 3
Reason:	UL 100 is no longer used in practice and should be removed from the NGBS standard.
CC Action:	Accept
CC Modification:	
CC Reason:	
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A034	ID 8136	612.3 Universal design elements	Final Formal Action: Disapprove
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	Delete section entirely.		
Reason:	Universal design is addressed by other codes and isn't a sustainability measure. Including non-sustainability measures in NGBS reduces the focus on sustainability within the NGBS program. Non-sustainability points allows projects to achieve certification without delivering on sustainability. Non-sustainability measures divert time/resources for users of the NGBS program from the core sustainability goal.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	The use of the universal design promotes aging-in-place, thereby reducing future resources required for rework and remodeling. Universal design also supports financial equity and stability in homes.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A035	ID 8138	613.1 Resilient Construction	Final Formal Action: Accept
Submitter:	Michael D. Blanford, Department of Housing and Urban Development (HUD)		
Comment:	Delete Section 613.1 and 11.613 in their entirety. Replace with the following for both Chapter 6 and Chapter 11: <u>613.1 Vulnerability Assessment. An assessment of the property's risks to climate, seismic, and natural disasters is performed by a qualified professional. Strategies are identified to enable the project to adapt to and mitigate hazard risks. The assessment is shared with the Building Owner. ...4 points</u>		

	<p>613.2 Building incorporates resilience construction practices from HUD Guides (Designing for Natural Hazards). Select guidance from a maximum of two hazard categories identified by the vulnerability assessment in practice 613.1.16 points max</p> <p>1.1 Wind Resilience: Practices listed on the following one-pager titles of the HUD Guides (Volume 1-Wind) are met. (0.5 point per practice, 2 points max per one pager)8 points max</p> <ul style="list-style-type: none"> <u>Openings- Shutters</u> <u>Roof Deck & Underlayment</u> <u>High-Wind Roof Covering</u> <u>Continuous Load Path</u> <u>Garage doors</u> <p>1.2 Water Resilience: Practices listed on the following one-pager titles of the HUD Guides (Volume 2-Water) are met. (0.5 point per practice, 2 points max per one pager)8 points max</p> <ul style="list-style-type: none"> <u>Roof Underlayment & Vents</u> <u>Wall Assembly</u> <u>Utilities and Mechanical Equipment</u> <u>Freeboard Elevation</u> <p>1.3 Fire Resilience: Practices listed on the following one-pager titles of the HUD Guides (Volume 3-Fire) are met. (0.5 point per practice, 2 points max per one pager)8 points max</p> <ul style="list-style-type: none"> <u>Defensible space</u> <u>Roof Assembly</u> <u>Foundation Components</u> <u>Ducts, Vents, & Openings</u> <p>1.4 Earth Resilience: Practices listed on the following one-pager titles of the HUD Guides (Volume 4-Earth) are met. (0.5 point per practice, 2 points max per one pager) Points for d. and e. cannot be claimed if those practices are already claimed in a.8 points max</p> <ul style="list-style-type: none"> <u>Continuous Load Path</u> <u>Post and Beam Connections</u> <u>Drywall (to Prevent Cracks)</u> <u>Garage Openings</u> <u>Exterior Wall Construction</u> <u>Roof to Wall Connection</u> <p>Add HUD resilience guides to reference section.</p>
Reason:	<p>The HUD Resilient Construction Guides provide a set of practices that can be used as guidance by builders and developers to minimize damages in the event of various disasters. The one pagers of the guide listed in this proposal are categorized as ‘good’ resilience practices are focused on most frequently occurring damages during the specific disaster event. The HUD Guides also include guidance for AUXILLARY category but is potentially out of scope for the NGBS because of its’ focus on disasters like volcano, hailstorm and extreme temperatures, but that is up to the TG to determine. The maximum points for this practice is capped such that only two hazard categories can be selected to not penalize houses in locations which is not vulnerable to many hazards.</p>
CC Action:	Accept
CC Modification:	

CC Reason:	The initial language was developed by the TG and Task Group 1 believes the language should be included in the draft standard for public comment. If necessary, further revisions to the language can be made via public comment. The original reason statement provided by the committee was that the HUD Guidelines were not published yet, they have since been published.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>APPROVE WITH COMMENT - Theresa Weston: The revision has resolved my earlier disapproval.</p> <p>APPROVE WITH COMMENT - Farah Qadeer: https://hazards.fema.gov/nri/community-resilience should be looked to as a future resource to identify more regional hazards and increase the number of regions that can accrue points.</p>

Section 7 Energy Efficiency

P020	ID 8020	701.1.4 Alternative Bronze and Silver level compliance	Final Formal Action: Accept as Modified
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	701.1.4 Alternative Bronze and Silver level compliance. As an alternative, any building that qualifies as an ENERGY STAR Version 3.0 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 building or demonstrates compliance with the ICC IECC or IRC Chapter 11 achieves the Bronze level for Chapter 7. As an alternative, any building that qualifies as an ENERGY STAR Version 3.1 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 (with the baseline at ASHRAE 90.1-2010) building achieves the Silver level for Chapter 7. As an alternative in the Tropical Climate Zone, any building that meets all the requirements in ICC IECC Section R401.2.1 (Tropical Zone) achieves the Silver level for Chapter 7. <u>Unconditioned buildings in the Tropical Zone are eligible to earn Silver even if they are located above the IECC elevation limit.</u> The buildings achieving compliance under § 701.1.4 are not eligible for achieving a rating level above Silver.		
Reason:	The elevation limit is designed to recognize buildings at higher elevations may install heating equipment and therefore should comply with conventional energy efficient requirements, however, buildings without heating installed should still be able to use the Tropical Zone compliance requirements.		
CC Action:	Accept as Modified		
CC Modification:	<u>Buildings without heating and 50% or less air-conditioned space in the Tropical Zone are eligible to earn Silver even if they are located above the IECC elevation limit.</u>		
CC Reason:	Modification allows partially conditioned building to be exempted.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P021	ID 8100	701.1.6 Alternative Gold level compliance for tropical zones	Final Formal Action: Disapprove
Submitter:	Steven Rosenstock, Self		
Comment:	701.1.6 Alternative Gold level compliance for tropical zones. One- or two-family dwelling in the tropical zone at an elevation less than 2,400 ft. (731.5 m) above sea level that complies with the following shall achieve the Gold level for Chapter 7: (1) The residence complies with ICC IECC R401.2.1 Tropical zone. (2) The residence includes a minimum of 2 kW of PV <u>an on-site renewable energy system</u> and a minimum of 6 kWh of battery storage. ... <i>(rest of the section is unchanged)</i>		
Reason:	This change will allow the use of multiple renewable energy production systems, and is consistent with item 4 (of 9) that allows multiple renewable energy technologies to be used to provide water heating.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	In favor of the new proposed stand along Tropical Zone Section.		

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P022	ID 8007	701.1.6 Alternative Gold level compliance for tropical zones	Final Formal Action: Disapprove
Submitter:	Jonathan Humble, American Iron and Steel Institute		
Comment:	<p>PROPOSED CHANGES TO ICC 700-2020</p> <p>701.1.6 Alternative Gold level compliance for tropical zones. One- and two-family in the tropical zone at an elevation less than 2,400 ft. (731.5 m) above sea level that complies with the following shall achieve the Gold level for Chapter 7:</p> <p><i>(Subparts #1 through #6 remain unmodified)</i></p> <p>(7) Walls comply with at least one of the following:</p> <ul style="list-style-type: none"> a) Walls have an overhang with a projection factor equal to or greater than 0.30. b) Walls have insulation with an R-value of R-13 or greater. c) Walls have a <u>minimum initial</u> solar reflectance of 0.64 measured <u>in accordance with the CRRC-2 Wall Rating Program</u>. <p><i>(Subparts #8 through #9 remain unmodified)</i></p> <p>Section 14</p> <p>REFERENCED DOCUMENTS</p> <p>1402.0 Referenced Documents</p> <p><i>(Modify as shown below)</i></p> <p><u>Cool Roof Rating Council Documents</u></p> <p>DOCUMENT</p> <p>DATE</p> <p>TITLE</p> <p>SECTION</p> <p><u>CRRC-2</u></p> <p><u>2022</u></p> <p><u>CRRC-2 Wall Product Rating Program Manual</u></p>		

	<u>701.1.6(7)</u>
Reason:	<p>Problem Statement: The current exterior wall provisions in the ICC 700 standard include a requirement to meet a single solar reflectance value. It is not clear if the intent is to require only the installation of exterior wall products with a solar reflectance of 0.64 or to allow products that exceed this value. By only stating a single value, this greatly reduces the number of eligible products that can be installed, including those that are more reflective. Furthermore, the existing requirement does not reference any standards or programs that would ensure that a product’s solar reflectance value is credible. The lack of a referenced standard or program also greatly reduces the ability for consumers to easily identify compliant products in the market. Proposal and Rationale: We recommend that the phrase “minimum initial” be included as shown in the proposal. Currently, the provision states that the wall product must have a solar reflectance value of 0.64. By not stating “minimum” solar reflectance of 0.64, it greatly reduces the number of products eligible for installation, including those that are more reflective. We recommend inserting “initial” to be consistent with the phrasing in the existing requirements for cool roofs in Sections 602.2 and 11.602.2 of ICC 700-2020. In addition, we propose adding a reference to the CRRC-2 Wall Product Rating Program Manual, a document that details the testing and labeling requirements of the CRRC Wall Rating Program. The manual was developed and vetted over a two-year period by a 27-member committee comprising 21 different organizations, including manufacturing and trade associations. Through the CRRC Wall Rating Program, manufacturers and sellers have the opportunity to get their wall products tested and labeled in accordance with the CRRC’s strict protocols outlined in the CRRC-2 Program Manual. The CRRC is a 501(c)(3) nonprofit organization established in 1998 to develop accurate and credible methods for evaluating and labeling the radiative properties of roofing products. The CRRC also provides education to the public on how cool roofs and solar-reflective walls can help improve building energy efficiency, increase occupant comfort, mitigate the impacts of the urban heat Island effect, and reduce greenhouse gas emissions. In 2018, the CRRC officially expanded the organization’s scope and mission to include the rating of exterior wall products. The CRRC worked closely with stakeholders from industry and end users on the development of the program over a two-year period. The program, which is the first and only in the world, officially launched on January 17, 2022. The CRRC Wall Rating Program is similar to the CRRC Roof Rating Program (CRRC-1), but with some technical differences. Please note that participation in the CRRC Wall Rating Program is separate and distinct from CRRC Membership. A wall product manufacturer is not required to be a member of the CRRC to have their product(a) tested and listed in accordance with the CRRC-2 Wall Rating Program Manual, which also includes listing in the free, online CRRC Rated Wall Products Directory (https://coolroofs.org/directory/wall). The CRRC-2 Wall Product Rating Program Manual includes: • Accredited testing laboratory requirements • Approved test farms weathering requirements • Testing requirements • Product rating and licensing requirements • Labeling requirements CRRC Rated Wall Products Directory: This is a free, online database that will list the initial and three-year aged solar reflectance and thermal emittance of exterior wall products. The directory will go live once wall products are initially rated. Products with only initial values will be listed through the duration of the three-year weathering process. The aged values will be added to the product listing after the weathering period is complete and aged testing performed. A CRRC product rating describes the radiative performance (solar reflectance and thermal emittance) of an exterior wall material; it does not indicate a ranking or approval. A product’s placement in the CRRC Rated Wall Products Directory does not mean that the product is “cool” as defined by any particular code or program. Only products with active ratings can be found in the Rated Wall Products Directory. Request to meet with ICC-700 Committee: The CRRC would appreciate the opportunity to speak with the ICC-700 consensus committee when this item is presented for consideration. Resources: A copy of CRRC-2 Wall Product Rating Program Manual can be downloaded at no charge from the following address: https://coolroofs.org/programs/wall-rating-program/all-forms-2 The CRRC Wall Rating Program can be seen at: https://coolroofs.org/programs/wall-rating-program</p>
CC Action:	Disapprove
CC Modification:	
CC Reason:	In favor of new stand alone Tropical Zone Section.
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0</p>

	Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P023	ID 8101	701.1.6 Alternative Gold level compliance for tropical zones	Final Formal Action: Disapprove
Submitter:	Steven Rosenstock, Self		
Comment:	<p>701.1.6 Alternative Gold level compliance for tropical zones. One- or two-family dwelling in the tropical zone at an elevation less than 2,400 ft. (731.5 m) above sea level that complies with the following shall achieve the Gold level for Chapter 7:</p> <p>(1) The residence complies with ICC IECC R401.2.1 Tropical zone...</p> <p>...</p> <p>(9) Wiring sufficient for a <u>A</u> Level 2 (208/240V 40-80 amp) electric vehicle charging station is installed on the building site.</p> <p><i>(rest of the section is unchanged)</i></p>		
Reason:	This proposed change will help to eliminate any confusion about whether this item requires "EV Capable" or "EV Ready" equipment installation, or if it require the actual installation of an EV charging station. All light duty vehicles sold in the US are able to charge at a Level 2 charging station. Installing the station at the time of construction costs much less than to do the installation after the house is built.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	In favor of stand alone Tropical Zone Section.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P024	ID 8061	701.4.1 HVAC systems	Final Formal Action: Accept as Modified
Submitter:	Chinedu Moneke, Home Innovation Research Labs (NGBS Green)		
Comment:	<p>This mandatory section does not require insulation for HVAC systems in unconditioned space.</p> <p>Language: " Supply and Return located in unconditioned space shall be insulated to a minimum of R-8. "</p>		
Reason:	For 701.4, we should include a mandatory practice for HVAC insulation if in unconditioned space in the next standard. This is important for energy efficiency		
CC Action:	Accept as Modified		
CC Modification:	701.4.2.4 Duct Insulation. Supply and return located outside conditioned space shall be insulated to an R-value of not less than R-8 for ducts 3 inches (76 mm) in diameter and larger and not less than R-6 for ducts smaller than 3 inches (76 mm) in diameter. Mandatory		
CC Reason:	New language was not properly formatted when submitted. 701.4.2 is better location for this item.		

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P025	ID 8075	701.4.3 Insulation and air sealing	Final Formal Action: Accept as Modified
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	Testing. Building envelope tightness is tested. Testing is conducted in accordance with ASTM E-779 using a blower door at a test pressure of 1.04 psf (50 Pa). Testing is conducted after roughin and after installation of penetrations of the building envelope, including penetrations for utilities, plumbing, electrical, ventilation, and combustion appliances. <u>Air leakage of dwelling units shall not exceed 7ACH50.</u> Testing is conducted under the following conditions: <i>(no change to testing procedure)</i>		
Reason:	Current blower door testing requirement without a leakage limit doesn't create sufficient incentive for air sealing.		
CC Action:	Accept as Modified		
CC Modification:	<p><i>Modify the practice number to 701.4.3.2.</i></p> <p><u>Testing. Conduct airtightness testing in accordance with procedures in ANSI/RESNET/ICC Std. 380, ASTM E779, or ASTM 1827 demonstrating compliance with the following leakage rates, as applicable to the type of home or dwelling unit:</u></p> <p><u>For detached homes $\geq 1,500$ ft², -measured airtightness shall be no greater than 5 ACH50.</u></p> <p><u>For all other homes or dwelling units, the weighted average of the unguarded compartmentalization testing shall be no greater than 0.30 CFM50 per square foot of dwelling unit enclosure area.</u></p> <p><i>Strike current language and replace with above.</i></p>		
CC Reason:	Amended text to align with IECC 2021.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 0 Abstain: 2 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. ABSTAIN - Theresa Weston: This practice should be further updated to align with the IECC 2024 once it is available.		

P026	ID 8045	701.4.3 Insulation and air sealing	Final Formal Action: Disapprove
Submitter:	Carl Seville, SK Collaborative		
Comment:	<p>(1) Inspection is conducted before insulation is covered.</p> <p>(2) Air-permeable insulation is enclosed on all six sides and is in substantial contact with the sheathing material on one or more sides (interior or exterior) of the cavity. Air permeable insulation in ceilings is not</p>		

	<p>required to be enclosed when the insulation is installed in substantial contact with the surfaces it is intended to insulate.</p> <p>(3) Cavity insulation uniformly fills each cavity side-to-side and top-to-bottom, without substantial gaps or voids around obstructions (such as blocking or bridging).</p> <p>(4) Cavity insulation compression or incomplete fill amounts to 2% or less, presuming the compressed or incomplete areas are a minimum of 70% of the intended fill thickness; occasional small gaps are acceptable.</p> <p>(5) Exterior rigid insulation has substantial contact with the structural framing members or sheathing materials and is tightly fitted at joints.</p> <p>(6) Cavity insulation is split, installed, and/or fitted tightly around wiring and other services.</p> <p>(7) Exterior sheathing is not visible from the interior through gaps in the cavity insulation.</p> <p>(8) Faced batt insulation is permitted to have side-stapled tabs, provided the tabs are stapled neatly with no buckling, and provided the batt is compressed only at the edges of each cavity, to the depth of the tab itself.</p> <p>(9) Where properly installed, ICFs, SIPs, and other wall systems that provide integral insulation are deemed in compliance with this section.</p> <p><u>(10) Foil sheet and bubble wrap insulation shall not be used as the sole thermal insulation in any exterior walls, floors, or ceilings. These products may be used in conjunction with glass fiber, mineral wool, foam, or cellulose insulation when installed with the designated air space and completely air sealed per manufacturer's installation instructions.</u></p>
Reason:	We see some masonry buildings in Climate zone 1 using foil faced insulation and an air gap as the only insulation and regardless of manufacturer's claims they are not shown to provide adequate thermal value.
CC Action:	Disapprove
CC Modification:	
CC Reason:	There were concerns about the language used (foil sheet and bubble wrap). Also, there were concerns about the list of insulation products not being totally inclusive. In favor of action on A050.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>APPROVE - Joshua Robert Stack: Good thought but requires more building science/details to ensure it works.</p>

P027	ID 8083	702.2 Energy performance levels	Final Formal Action: Accept as Modified
Submitter:	Steven Rosenstock, Self		
Comment:	702.2.1 ICC IECC analysis. Energy efficiency features are implemented to achieve energy cost or <u>site energy</u> or <u>source energy</u> or <u>carbon</u> performance that meets the ICC IECC		
Reason:	Different jurisdictions use different metrics to judge building performance. The green standard should be flexible enough to adapt to the different metrics that are being used by different cities and different states (or if they are using multiple metrics). It should be noted that site energy was used in the first 2 version of the NGBS, and carbon is being used by more jurisdictions over the past few years.		
CC Action:	Accept as Modified		

CC Modification:	702.2.1 ICC IECC analysis. Energy efficiency features are implemented to achieve energy cost, or site energy, source energy, <u>or carbon dioxide equivalent emissions</u> performance that meets the ICC IECC, <u>using methodology in ANSI/ASHRAE Standard 105 or ASHRAE 189.1.</u>
CC Reason:	Broadened term to “carbon dioxide equivalent emissions.” Added methodology.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 1 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. DISAPPROVE COMMITTEE ACTION - Craig Charles Conner: Several reasons. -Carbon or CO2 equivalent should not be with the three other energy metrics list (cost, source, site) with an ""or"", as carbon/CO2e are an additional dimension rather than another energy metric. -I am skeptical of the carbon/CO2e calculation. -I live in the Pacific Northwest, where we have areas of very high hydro. Does that mean those areas have almost no carbon/CO2 so that carbon/CO2e ""measure of energy"" is almost zero in the land of high hydro? -Electricity generation from natural gas has less than half the CO2e than electricity from fossil fuels so electricity CO2e is sometimes difficult to even know. -In my experience many jurisdictions will not even understand the difference between site energy, source energy, energy cost, and CO2. You can test this by asking them which they have. Task Group 1 Response: Non-Persuasive Reason: The requirement as stated will allow flexibility to local jurisdictions who may be using carbon emissions as their standards. Carbon dioxide equivalence are being used in several different programs.

P028	ID 8099	702.2 Energy performance levels	Final Formal Action: Disapprove
Submitter:	Jamie Carr, Self		
Comment:	<p>702.2.1 ICC IECC analysis.</p> <p>Energy efficiency features are implemented to achieve energy cost or source energy performance that meets the ICC IECC. A documented analysis using software in accordance with ICC IECC Section R405, or ICC IECC Section C407.2 through C407.5, applied as defined in the ICC IECC, is required.</p> <p><u>For ICC IECC residential buildings, demonstrate Section R405.2 Performance-based compliance according to the documentation requirements in Section R405.3. The calculation procedure should be in accordance with R405.4 using calculation software tools in accordance with Section R.405.5.</u></p> <p><u>For ICC IECC commercial buildings, demonstrate Section C407.2 mandatory requirements according to the documentation requirements in Section C407.3. The calculation procedure should be in accordance with C407.4 using calculation software tools in accordance with Section C407.5.</u></p> <p>702.2.2 Energy performance analysis.</p> <p>The energy performance analysis savings levels above the ICC IECC are shall be determined through an <u>analysis energy model</u> that includes improvements in <u>consideration of the</u> building envelope, air infiltration, heating system efficiencies, cooling system efficiencies, duct sealing, water heating system efficiencies, lighting, appliances, and on- site renewable energy. Points are assigned using the following formula:</p>		

	Points = 30 + (percent above NGBS Reference Home for ICC residential buildings or percent above ICC IECC for ICC commercial buildings- ICC IECC) * 2
Reason:	As a matter of practice, Home Innovation refers to NGBS as an above-code program and speaks of performance at the Silver, Gold, Emerald levels as being such-as-such percent above code. The reality is that because of how the standard has been written and interpreted, NGBS certified building are often below code and claims of being such-and-such a percentage above code are often not true. For example, for a low-rise residential building the IECC code requires that the HVAC equipment in the baseline and proposed versions of the energy model be the same in most cases. But NGBS allows the baseline model to use the NGBS reference home value while the proposed model can use the actual proposed equipment value. This means that a building could fail to meet code, but the NGBS report would say it is performing significantly above code. In fact, it's not performing significantly above code, it is only performing significantly above the NGBS reference home (which is not the same as code). Furthermore, the performance path allows for other below-code practices for low-rise buildings, like not having to test ducts that are in unconditioned space or not having to hit the code blower door threshold. I propose that we amend the NGBS standard so that it is no less stringent than the 2021 IECC, and so that when we talk about higher level of performance we are more careful about how that may compare to code.
CC Action:	Disapprove
CC Modification:	
CC Reason:	This would take away energy efficiency measures that reduce consumption as a tool for compliance.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P029	ID 8008	702.2 Energy performance levels	Final Formal Action: Accept as Modified
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	702.2.1 ICC IECC analysis. Energy efficiency features are implemented to achieve energy cost or source energy performance that meets the <u>2024</u> ICC IECC.		
Reason:	The 2024 NGBS should be aligned with the performance baselines of the 2024 I-codes, specifically the 2024 IRC, 2024 IBC, and the 2024 IECC.		
CC Action:	Accept as Modified		
CC Modification:	702.2.1 ICC IECC analysis. Energy efficiency features are implemented to achieve energy cost or source energy performance that meets the <u>2021</u> ICC IECC. See P029 Supplemental information.		
CC Reason:	For our review of the proposals, we are using 2021 IECC as a known commodity to more easily decide on the proposals and do point adjustments. At this time, it is premature to base our decisions on the 2024 code with the knowledge that there are very big changes that may be adopted that will have a significant impact on the NGBS.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 0 Abstain: 2 Non-voting: 2		

Ballot 1 Comments:	ABSTAIN - Theresa Weston: This practice should be further updated to align with the IECC 2024 once it is available. ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.
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P030	ID 8108	703 PRESCRIPTIVE PATH	Final Formal Action: Disapprove
Submitter:	Joe Baumann, SK Collaborative		
Comment:	Include minimum requirements for HVAC and appliances as part of the prescriptive path.		
Reason:	Right now, if a ComCheck is provided, projects qualify for all the points needed to hit Bronze under the prescriptive path. Practices related to HVAC and appliance efficiencies become optional at the Bronze level, but there should be some requirement for those items.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Proposal lacks specific language to include within the standard.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P031	ID 8018	703.1 Mandatory practices	Final Formal Action: Accept as Modified
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	703.1.1.2 Prescriptive R-values and fenestration requirements. The building thermal envelope is in accordance with the insulation and fenestration requirements of ICC IECC Table R402.1.2 or Table C402.1.3. The fenestration U-factors and SHGC's are in accordance with Table 703.2.5.1 or ICC IECC Table C402.4. <u>Unconditioned buildings in the Tropical Zone are exempt from this practice.</u>		
Reason:	Buildings in the TZ that are unconditioned are typically concrete construction without insulation and do not benefit from higher performing windows. Such buildings are likely to have the windows open most of the year.		
CC Action:	Accept as Modified		
CC Modification:	703.1.1.2 Prescriptive R-values and fenestration requirements. The building thermal envelope is in accordance with the insulation and fenestration requirements of ICC IECC Table R402.1.2 or Table C402.1.3. The fenestration U-factors and SHGC's are in accordance with Table 703.2.5.1 or ICC IECC Table C402.4. <u>Unconditioned buildings 3 stories or less in height located in the Tropical Zone are exempt from this practice if the building meets a minimum roof SRI of 0.85, and a minimum wall reflectivity of 0.39.</u>		
CC Reason:	Amendments are tailored to unique conditions in the tropical zone allowing more flexibility in the use of fenestration in the Tropical zone. The amendments recognize that efficiency gains from reflective roofs and walls are more significant than the energy efficiency from high performance windows.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P032	ID 8019	703.2 Building envelope	Final Formal Action: Accept as Modified
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	<p>703.2.5 Fenestration</p> <p>703.2.5.1 NFRC-certified (or equivalent) U-factor and SHGC of windows, exterior doors, skylights, and tubular daylighting devices (TDDs) on an area-weighted average basis do not exceed the values in Table 703.2.5.1. Area weighted averages are calculated separately for the categories of 1) windows and exterior doors and 2) skylights and tubular daylighting devices (TDDs). Decorative fenestration elements with a combined total maximum area of 15 sq. ft. (1.39 m2) or 10% of the total glazing area, whichever is less, are not required to comply with this practice. <u>Unconditioned buildings in the TZ are exempt from this practice.</u></p>		
Reason:	Unconditioned buildings in the TZ do not benefit from high performance windows because the windows are likely to be open all year.		
CC Action:	Accept as Modified		
CC Modification:	<p>703.2.5 Fenestration</p> <p>703.2.5.1 NFRC-certified (or equivalent) U-factor and SHGC of windows, exterior doors, skylights, and tubular daylighting devices (TDDs) on an area-weighted average basis do not exceed the values in Table 703.2.5.1. Area weighted averages are calculated separately for the categories of 1) windows and exterior doors and 2) skylights and tubular daylighting devices (TDDs). Decorative fenestration elements with a combined total maximum area of 15 sq. ft. (1.39 m2) or 10% of the total glazing area, whichever is less, are not required to comply with this practice. <u>Unconditioned buildings 3 stories or less in height located in the Tropical Zone are exempt from this practice if the building meets a minimum roof SRI of 0.85, and a minimum wall reflectivity of 0.39.</u></p>		
CC Reason:	Amendments are tailored to unique conditions in the tropical zone allowing more flexibility in the use of fenestration in the Tropical zone. The amendments recognize that efficiency gains from reflective roofs and walls are more significant than the energy efficiency from high performance windows.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P033	ID 8027	703.2 Building envelope	Final Formal Action: Accept as Modified
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	<p>11.703.2.5 Fenestration</p> <p>11.703.2.5.1 NFRC-certified (or equivalent) U-factor and SHGC of windows, exterior doors, skylights, and tubular daylighting devices (TDDs) on an area-weighted average basis do not exceed the values in Table 11.703.2.5.1. Area weighted averages are calculated separately for the categories of 1) windows and exterior doors and 2) skylights and tubular daylighting devices (TDDs). Decorative fenestration elements with a combined total maximum area of 15 sq. ft. (1.39 m2) or 10% of the total glazing area, whichever is less, are not required to comply with this practice. <u>Unconditioned or low energy buildings in the Tropical Zone are exempt.</u></p>		
Reason:	High-performance windows do not provide the same efficiency value for unconditioned or low energy buildings located in the TZ. They should be exempt.		
CC Action:	Accept as Modified		

CC Modification:	11.703.2.5 Fenestration 11.703.2.5.1 NFRC-certified (or equivalent) U-factor and SHGC of windows, exterior doors, skylights, and tubular daylighting devices (TDDs) on an area-weighted average basis do not exceed the values in Table 11.703.2.5.1. Area weighted averages are calculated separately for the categories of 1) windows and exterior doors and 2) skylights and tubular daylighting devices (TDDs). Decorative fenestration elements with a combined total maximum area of 15 sq. ft. (1.39 m ²) or 10% of the total glazing area, whichever is less, are not required to comply with this practice. <u>Unconditioned buildings 3 stories or less in height located in the Tropical Zone are exempt from this practice if the building meets a minimum roof SRI of 0.85, and a minimum wall reflectivity of 0.39.</u>
CC Reason:	Amendments are tailored to unique conditions in the tropical zone allowing more flexibility in the use of fenestration in the Tropical zone. The amendments recognize that efficiency gains from reflective roofs and walls are more significant than the energy efficiency from high performance windows.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P034	ID 8004	703.2 Building envelope	Final Formal Action: Disapprove
Submitter:	Brad Bray, Self		
Comment:	703.1.2 Building envelope leakage. The building thermal envelope (<u>dwelling unit/sleeping unit</u>) is in accordance with ICC IECC R402.4.1.2 or C402.5 as applicable <u>for all residential use space.</u>		
Reason:	Require infiltration testing for residential spaces, regardless of height of building. Eliminate the exemption for "commercial" IECC due to height of building. People should have the same QC regardless of height of the building.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	There are dwelling unit requirements under both the residential and commercial sections of the 2021 IECC, so both spaces need to be consider. It would be inappropriate to remove commercial references. Parentheses are confusing and should not be included in code language.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P035	ID 8105	703.3 HVAC equipment efficiency	Final Formal Action: Accept as Modified
Submitter:	Kegan Daugherty, North American Gas Heat Pump Collaborative		
Comment:	Add a row to tables 703.3.2.(1)(a-c)		
Reason:	For committee consideration, inclusion of gas heat pumps and gas heating technologies greater than 100% AFUE equivalent in section 703.3, and updating relevant tables with residential heating equipment that meets		

	the Advanced Tier of CEE's Gas-Forced Air Specification, according to the ANSI Z21.40.4 Performance Testing and Rating of Gas-Fired, Air Conditioning and Heat Pump Applications. Amend tables 703.3.2(1)(a-c) to include additional row labeled: >120% AFUE, with proportionate point values for each climate zone. CEE details available at: https://library.cee1.org/system/files/library/12048/CEE_ResHVAC_GasSpecs_15Jan2021.pdf																		
CC Action:	Accept as Modified																		
CC Modification:	<p>Table 703.3.2(1a & 1b) Change Heaters to Heating Systems and add these tables</p> <table border="1"> <tr> <td><u>≥120% AFUE*</u></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><u>≥140% AFUE*</u></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Footnote: *This requirement is used for gas-fired heat pump systems</p>	<u>≥120% AFUE*</u>									<u>≥140% AFUE*</u>								
<u>≥120% AFUE*</u>																			
<u>≥140% AFUE*</u>																			
CC Reason:	These changes accommodate new high efficiency technologies that are going to be on the market and used in buildings.																		
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 0 Abstain: 2 Non-voting: 2</p>																		
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. ABSTAIN - Christopher Perry:</p> <p>This proposal pertains to covered products regulated through Federal rulemaking. As a matter of policy, DOE abstains on such items which could impact rulemaking activities or result in a perceived conflict of interest.</p>																		

P036 ID 8088	703.3 HVAC equipment efficiency	Final Formal Action: Accept as Modified																																												
Submitter:	Steven Rosenstock, Self																																													
Comment:	<p>{Adjust point values downward in Tables for residential gas and oil boilers due to increase in federal minimum efficiency standards as of January 15, 2021. For example:</p> <p>Table 703.3.2(4) Oil Boiler AFUE</p> <table border="1"> <thead> <tr> <th rowspan="2">AFUE</th> <th colspan="8">Climate Zone</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> </tr> </thead> <tbody> <tr> <td></td> <td colspan="8">Points</td> </tr> <tr> <td>≥85% AFUE</td> <td>0</td> <td>1</td> <td>1</td> <td>3</td> <td>3</td> <td>4</td> <td>4</td> <td>5</td> </tr> <tr> <td>≥90% AFUE</td> <td>1</td> <td>2</td> <td>3</td> <td>5</td> <td>6</td> <td>7</td> <td>9</td> <td>10</td> </tr> </tbody> </table>		AFUE	Climate Zone								1	2	3	4	5	6	7	8		Points								≥85% AFUE	0	1	1	3	3	4	4	5	≥90% AFUE	1	2	3	5	6	7	9	10
AFUE	Climate Zone																																													
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≥90% AFUE	1	2	3	5	6	7	9	10																																						
Reason:	<p>Federal standards for residential have increased as of January 15, 2021. Below are the previous and current values (from https://www.ecfr.gov/current/title-10/chapter-II/subchapter-D/part-430/subpart-C/section-430.32): Except as provided in paragraph (e)(2)(iv) of this section, the AFUE of residential boilers, manufactured on or after September 1, 2012, and before January 15, 2021, shall not be less than the following and must comply with the design requirements as follows: Product class AFUE1 (percent) Design requirements (A) Gas-fired hot water boiler 82 Constant burning pilot not permitted. Automatic means for adjusting water temperature required (except for boilers equipped with tankless domestic water heating coils). (B) Gas-fired steam boiler 80 Constant burning pilot not permitted. (C) Oil-fired hot water boiler 84 Automatic means for adjusting temperature required (except for boilers equipped with tankless domestic water heating coils). (D) Oil-fired steam boiler 82 None. (E) Electric hot water boiler None Automatic means for adjusting temperature required (except for boilers equipped with tankless domestic water heating coils). 1 Annual Fuel Utilization Efficiency, as determined in § 430.22(n)(2) of this part. Except as provided in paragraph (e)(2)(v) of this</p>																																													

	section, the AFUE of residential boilers, manufactured on and after January 15, 2021, shall not be less than the following and must comply with the design requirements as follows: Product class AFUE1 (percent) Design requirements (1) Gas-fired hot water boiler 84 Constant-burning pilot not permitted. Automatic means for adjusting water temperature required (except for boilers equipped with tankless domestic water heating coils). (2) Gas-fired steam boiler 82 Constant-burning pilot not permitted. (3) Oil-fired hot water boiler 86 Automatic means for adjusting temperature required (except for boilers equipped with tankless domestic water heating coils). (4) Oil-fired steam boiler 85 None. (5) Electric hot water boiler None Automatic means for adjusting temperature required (except for boilers equipped with tankless domestic water heating coils). (6) Electric steam boiler None None. 1 Annual Fuel Utilization Efficiency, as determined in § 430.23(n)(2) of this part.
CC Action:	Accept as Modified
CC Modification:	See reason statement below.
CC Reason:	Recognize that the points will be assigned after analysis. Approval is for the framework and elimination of the 85% category. 95% AFUE category to be incorporated when point calculations are being added. This is to update the table in light of an increase in the federal minimum standards.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 0 Abstain: 2 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. ABSTAIN - Christopher Perry: This proposal pertains to covered products regulated through Federal rulemaking. As a matter of policy, DOE abstains on such items which could impact rulemaking activities or result in a perceived conflict of interest.

P037	ID 8085	703.3 HVAC equipment efficiency	Final Formal Action: Accept
Submitter:	Steven Rosenstock, Self		
Comment:	HSPF <u>HSPF2</u> EER <u>EER2</u> SEER <u>SEER2</u>		
Reason:	In the US, for air source heating and cooling systems, the metrics will be changing (and increased) as of 1/1/2023. EER, SEER, and HSPF will be changing to EER2, SEER2, and HSPF2. Tables in Chapters 7, 11, and 12 need to be updated for the new metrics and increased stringency (e.g., new SEER2 of 14.3 is roughly equivalent to old SEER of 15). Certain definitions with EER or SEER or HSPF also need to be updated.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 0 Abstain: 2 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. ABSTAIN - Christopher Perry:		

	This proposal pertains to covered products regulated through Federal rulemaking. As a matter of policy, DOE abstains on such items which could impact rulemaking activities or result in a perceived conflict of interest.
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P038	ID 8079	705 ADDITIONAL PRACTICES	Final Formal Action: Disapprove
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	<u>(New Optional Criteria) 705.8. ENERGY STAR Certified Building. Obtain ENERGY STAR certification for multifamily buildings within 2 years of stable occupancy. Three points are achieved with an ENERGY STAR score of 75 or above, and 5 points for a score of 80 or above.</u>		
Reason:	ENERGY STAR certification for the building post-occupancy adds practices that improve energy performance of buildings in the operations phase.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	It is not clear what is meant by “stable occupancy” and how it is determined. Also, such “stable occupancy” may not occur for several years after the multi-family building is built. It is also not clear how these points would align with the different levels of NGBS certification. Also, the same number of points is achieved for buildings with a score of 80 or 90 or 100, even though buildings with higher scores have more energy savings, which does not align with other point value assignments in the NGBS.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P039	ID 8015	705.5 HVAC design and installation	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	Add the following options: (1) Associated Air Balance Council (AABC) Test and Balance Technician; (2) Associated Air Balance Council (AABC) Test and Balance Engineer; and (3) National Environmental Balancing Bureau (NEBB) Personnel Certification.		
Reason:	The current options included are relevant to low-rise residential buildings only. Add additional options that are accepted as equivalent for the multifamily/commercial sector.		
CC Action:	Accept as Modified		
CC Modification:	<p>705.5.1 Meet <u>at least one</u> or both of the following:</p> <p>HVAC contractor is certified by the Air Conditioning Contractors of America’s Quality Assured Program (ACCA/QA), or by an EPA-recognized HVAC Quality Installation Training Oversight Organization (H-QUITO), the Associated Air Balance Council (AABC) Test and Balance Technician or Engineer programs, the National Environmental Balancing Bureau (NEBB) Personnel Certification program, or Testing, Adjusting, and Balance Bureau (TABB) technician certification program. or equivalent 1 point</p> <p>HVAC installation technician(s) is certified by North American Technician Excellence, Inc. (NATE) or equivalent. 2 point</p>		
CC Reason:	This allows existing service corps or testers and balancers certified under equivalent programs to participate.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0		

	Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P040	ID 8076	705.5 HVAC design and installation	Final Formal Action: Disapprove
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	<u>705.5.2.1. In multifamily buildings, conduct third-party commissioning of common area and central HVAC, domestic hot water and lighting systems. Verify that startup is complete by the installing contractor. In addition, complete a functional test checklist for the applicable systems.</u>		
Reason:	Third party commissioning is a value to the building owner, and improves building performance. This is for multifamily buildings only.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	This is not ready for use.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P041	ID 8077	705.6 Installation and performance verification	Final Formal Action: Disapprove
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	<u>705.6.2.3, HVAC Duct Leakage Testing. Criteria is mandatory for single family home projects. One of the following is achieved: (no change to rest of criteria)</u>		
Reason:	Duct leakage testing provides an incentive to improve duct tightness and installation. This applies to single family projects only.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Per action on A048, duct testing will be mandatory for all projects.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P042	ID 8070	706.2 Renewable energy service plan	Final Formal Action: Accept as Modified
Submitter:	Heather Schrock, Self		
Comment:	(1) Builder selects a renewable energy service plan (<u>often called a green power plan</u>) provided by the local electrical utility for interim (temporary) electric service, or purchases renewable energy certificates (RECs) <u>from a third-party provider</u> to cover electricity used. The builder's local administrative office has		

	<p>renewable energy service or has otherwise been paired with RECs. Green-e Certified (or equivalent) is required for renewable electricity purchases. 1</p> <p>(2) The buyer of the building selects one of the following renewable energy service plans provided by the utility prior to occupancy of the building with a minimum two-year commitment <u>or buys RECs from a third-party provider to match the estimated projected electricity use for the building for two years.</u></p> <p>(a) less than 50% of the dwelling’s projected electricity and gas use is provided by renewable energy. 1</p> <p>(b) greater than or equal to 50% of the dwelling’s projected electricity and gas use is provided by renewable energy 2</p>
Reason:	Revise this existing practice for clarity.
CC Action:	Accept as Modified
CC Modification:	<p>(1) Builder selects a renewable energy service plan (often called a green power plan) provided by the local electrical utility for interim (temporary) electric service or purchases renewable energy certificates (RECs) <u>from a third-party provider</u> to cover electricity used. The builder’s local administrative office has renewable energy service or has otherwise been paired with RECs. Green-e Certified (or equivalent) is required for renewable electricity purchases. 1</p> <p>(2) The buyer of the building selects one of the following renewable energy service plans provided by the utility prior to occupancy of the building with a minimum two-year commitment <u>or buys RECs from a third-party provider to match the estimated projected electricity use for the building for two years.</u></p> <p>(a) less than 50% of the dwelling’s projected electricity and gas use is provided by renewable energy. 1</p> <p>(b) greater than or equal to 50% of the dwelling’s projected electricity and gas use is provided by renewable energy 2</p>
CC Reason:	Edited for clarity of requirements.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P043	ID 8102	706.5 On-site renewable energy system	Final Formal Action: Disapprove
Submitter:	Steven Rosenstock, Self		
Comment:	<p>706.5 On-site renewable energy system. One of the following options is implemented:</p> <p>(1) Building is Solar-Ready in compliance...</p> <p>...</p> <p><u>Points shall not be awarded for the capacity of an on-site renewable energy system or battery energy storage system that is required by a jurisdiction to be installed in minimum building or energy codes that have been adopted by the jurisdiction.</u></p> <p>(rest of the section is unchanged)</p>		

Reason:	There are now local jurisdiction minimum codes and state minimum energy codes (such as California's Title 24) that require new buildings to install on-site renewable energy systems. See https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency for information about CA Title 24-2022. This proposed change will prevent "double counting", or giving points for a required practice in those jurisdictions.
CC Action:	Disapprove
CC Modification:	
CC Reason:	This proposal unfairly burdens buildings in jurisdictions with solar requirements.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P044	ID 8067	706.8 Electrical vehicle charging station	Final Formal Action: Disapprove
Submitter:	Chinedu Moneke, Home Innovation Research Labs (NGBS Green)		
Comment:	For multifamily, minimum charging stations should be 1 charging station per 100 dwelling units.		
Reason:	For Multifamily, consider awarding points for percent of buildings/dwelling units		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	This requirement is already in the standard as part of section 505.6		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P045	ID 8065	706.8 Electrical vehicle charging station	Final Formal Action: Accept as Modified
Submitter:	Chinedu Moneke, Home Innovation Research Labs (NGBS Green)		
Comment:	706.8.2: The Electrical Vehicle Chargers are ENERGYSTAR certified.		
Reason:	Change 706.8 to 706.8.1 and add practice for EV Chargers that are ESTAR certified		
CC Action:	Accept as Modified		
CC Modification:	706.8.2: The Electrical Vehicle Chargers are ENERGY STAR certified <u>or equivalent1 additional</u>		
CC Reason:	This would provide extra credit for ENERGY STAR charging station.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P046	ID 8109	706.12 Smart ventilation	Final Formal Action: Accept as Modified
Submitter:	Justin Mahley, Panasonic		
Comment:	<p>706.12.1 Smart ventilation. A whole-building ventilation system is installed with automatic ventilation controls to maximize ventilation during periods of poor indoor air quality.</p> <p>706.12.1.2 IAQ remediation. A installed device that inhibits, removes, or reduces PM2.5, VOC and CO2</p>		
Reason:	To add language around further smart IAQ sensing ventilation		
CC Action:	Accept as Modified		
CC Modification:	<p>Modify as follows:</p> <p>{706.12 remains unchanged}</p> <p>904.5 Indoor Air Quality Remediation. A ventilation device is installed that automatically removes, inhibits, or reduces PM2.5, TVOC and CO2 within the conditioned space when identified by installed devices per Section 904.4.2....8</p>		
CC Reason:	Added appropriate language.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

Additional TG Proposed Changes

A036	ID 8201	Section 7 Energy Efficiency	Final Formal Action: Disapprove
Submitter:	Jamie Carr, Eco Achievers		
Comment:	NGBS should incorporate a bonus for projected net zero energy performance.		
Reason:	Perhaps this could replace the Net Zero Energy Badge. The bonus could be similar to Credit 5.4 in the Zero Energy Section of Enterprise Green Communities 2020. I propose putting together a sub-Task Group working group to develop this proposal more fully.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	No language included.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A037	ID 8202	Section 7 Energy Efficiency	Final Formal Action: Disapprove
Submitter:	Jamie Carr, Eco Achievers		

Comment:	NGBS should incorporate a more robust bonus for renewable energy.
Reason:	Currently, the way NGBS is structured there is very little weight given to on-site renewable energy systems. See Section 706.5. The bonus could be similar to Credit 5.3 Renewable Energy in the Moving to Zero Energy section of Enterprise Green Communities 2020. I propose putting together a sub-Task Group working group to develop this proposal more fully.
CC Action:	Disapprove
CC Modification:	
CC Reason:	No language included.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A038	ID 8199	Section 7 Energy Efficiency	Final Formal Action: Disapprove
Submitter:	Jamie Carr, Eco Achievers		
Comment:	NGBS should incorporate an incentive bonus for the electrification of residential buildings.		
Reason:	This bonus could be similar to Credits 5.5a Electric Ready and 5.5b All Electric in the Moving to Zero Carbon section of Enterprise Green Communities 2020. I propose putting together a sub-Task Group working group to develop this proposal more fully.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	No language included.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>APPROVE - John Barrows: NGBS should reward points for the elimination of fossil fuels. There is mounting pressure to eliminate fossil fuels in new construction and NGBS should recognize that as an Innovative Practice. The practice could reference the pending appendix, RE, in IECC 2024 should that be adapted.</p>		

A039	ID 8200	Section 7 Energy Efficiency	Final Formal Action: Disapprove
Submitter:	Jamie Carr, Eco Achievers		
Comment:	NGBS should incorporate an incentive bonus for near zero certifications, such as Zero Energy Ready Homes or Phius.		
Reason:	The bonus could be similar to Credit 5.2b in the Moving to Zero Energy section of Enterprise Green Communities 2020. I propose putting together a sub-Task Group working group to develop this proposal more fully.		

CC Action:	Disapprove
CC Modification:	
CC Reason:	No language included.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A040	ID 8207	Section 7 Energy Efficiency	Final Formal Action: Disapprove
Submitter:	Craig Conner, Building Quality		
Comment:	See A040 Supplemental information.		
Reason:	This appendix provides a simpler energy code that conserves more energy.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Certified Path already exists as a simplified NGBS compliance pathway. Some concepts here could potentially be folded into Ch 12. Potential complications from alignment with the R and C codes.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A041	ID 8180	701.1.4 Alternative Bronze and Silver level compliance	Final Formal Action: Accept
Submitter:	Asa Foss, EPA		
Comment:	701.1.4 Alternative Bronze and Silver level compliance. As an alternative, any building that qualifies as an ENERGY STAR Version 3.0 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 building <u>National Single Family New Homes Version 3.1 or ENERGY STAR National Multifamily New Construction Version 1.1 building</u> or demonstrates compliance with the 2018 2021 IECC or Chapter 11 of the 2018 IRC achieves the bronze level for Chapter 7. As an alternative, any building that qualifies as an ENERGY STAR Version 3.1 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 (with the baseline at ASRHAE 90.1-2010) building <u>National Single Family New Homes Version 3.2 or ENERGY STAR National Multifamily New Construction Version 1.2 building</u> achieves the silver level for Chapter 7. ...		
Reason:	<p>Projects must earn 30 points for Bronze, 45 for Silver, 60 for Gold</p> <p>Using the 702 Performance Path, points are awarded as Points = 30 + (% above NGBS Reference Home)*2. The NGBS Reference Home is vaguely defined/assumed to be equivalent to the 2021 IECC. To earn 30 points for Bronze, projects must be 0% better than 2021 IECC. To earn 45 points for Silver, projects must be 7.5% better than 2021 IECC. To earn 60 points for Gold, projects must be 15% better than the 2021 IECC.</p> <p><u>Residential Code</u></p> <p>ENERGY STAR Single Family New Homes v3.1 is 10% more stringent than the 2018 IECC that the Residential 2021 IECC has a 9.38% site energy savings over 2018 IECC. Meeting ENERGY STAR v3.1 slightly exceeds the</p>		

	<p>energy performance of 2021 IECC, so it should be rewarded as equivalent to NGBS Bronze. ENERGY STAR v3.2 is 10% more stringent than the 2021 IECC, which should be rewarded as more than meeting the requirements for NGBS Silver.</p> <p><u>Commercial Code</u></p> <p>ASHRAE 90.1-2016 may be used to demonstrate compliance to the commercial 2018 IECC. ASHRAE 90.1-2019 may be used to demonstrate compliance to the commercial 2021 IECC. DOE has determined that the Commercial 2021 IECC has a 4.7% site energy savings over 2018 IECC. ENERGY STAR Multifamily New Construction v1.1 requires a 15% improvement over 90.1-2016. Meeting ENERGY STAR v1.1 exceeds the performance requirements of NGBS Silver. ENERGY STAR v1.2 is 15% more stringent than ASHRAE 90.1-2019, so it should be rewarded as equivalent to NGBS Gold.</p> <p>For ease of compliance, and because Multifamily New Construction projects may use the ERI compliance path that aligns with single family, I recommend rounding down to the same performance equivalency as ENERGY STAR Single Family New Homes.</p> <p>Updated the code reference from 2018 to 2021 IECC.</p>
CC Action:	Accept
CC Modification:	
CC Reason:	
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 25</p> <p>Disapprove committee action: 0</p> <p>Abstain: 2</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	<p>ABSTAIN - Joshua Robert Stack: Not persuaded by this.</p> <p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p>

A042	ID 8189	701.1.5 Alternative Gold level compliance	Final Formal Action: Accept as Modified
Submitter:	Theresa Weston, The Holt Weston Consultancy representing ABAA		
Comment:	<p><i>Modify as follows:</i></p> <p>701.1.5 Alternative Gold level compliance. As an alternative, any building within the scope of the NGBS that complies with Chapter 7 of the ICC IgCC achieves the Gold level for Chapter 7. Additionally, acceptable air tightness of individual residential units shall be demonstrated by a blower door test. The testing and sampling procedure shall be in accordance with the ENERGY STAR Multifamily High Rise Program Testing and Verification Protocols, Version 1.0, Revision 03 - 2015, with an allowable maximum leakage of 0.3 <u>0.2</u> cfm/sf of enclosure bounding the apartment at an induced pressure difference of 50 pascals.</p>		
Reason:	Updates the allowable air leakage maximum for attached dwelling units to be consistent with ASHRAE 62.2-2019 Addendum e which was approved April 30, 2021.		
CC Action:	Accept as Modified		
CC Modification:	<p><i>Modify as follows:</i></p> <p>701.1.5 Alternative Gold level compliance. As an alternative, any building within the scope of the NGBS that complies with Chapter 7 of the ICC IgCC achieves the Gold level for Chapter 7. Additionally, <u>measured compartmentalization shall be no greater than</u> acceptable air tightness of individual residential units shall be</p>		

	<p>demonstrated by a blower door test. The testing and sampling procedure shall be in accordance with the ENERGY STAR Multifamily High Rise Program Testing and Verification Protocols, Version 1.0, Revision 03-2015, with an allowable maximum leakage of 0.3 <u>0.2</u> CFM50/sf of dwelling unit enclosure area, tested in accordance with ASTM E779, ASTM E1827, ASTM E3158 or ANSI/RESNET/ICC Std. 380. enclosure bounding the apartment at an induced pressure difference of 50 pascals.</p>
CC Reason:	To be inclusive of the testing protocols that are applicable to compartmentalization testing. ENERGY STAR reference is no longer valid.
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A043	ID 8206	701.1.6 Alternative Bronze Compliance	Final Formal Action: Disapprove
Submitter:	Craig Conner, Building Quality		
Comment:	<p>XX1.3 Energy Compliance Alternative.</p> <p>Compliance with the 3 items below is deemed to be energy compliance at the xxx level.</p> <p>XX1.3.1 Equivalent building option. Dwellings that meet both of the following criteria shall be deemed in compliance with the thermal envelop requirements of this chapter.</p> <ol style="list-style-type: none"> 1. The ratio of the air-conditioning capacity to conditioned space is less than or equal to 1.5 tons per 1000square feet. 2. The ratio of the heating system capacity to floor area of conditioned space is less than or equal to <ul style="list-style-type: none"> 10,000 Bth/h per 1000 square feet for zone 2 15,000 Bth/h per 1000 square feet for zone 3 18,000 Bth/h per 1000 square feet for zone 4 5 20,000 Bth/h per 1000 square feet for zone 6 & 7. 25,000 Bth/h per 1000 square feet for zone 8 <p>XX1.3.2 Equivalent hot water.</p> <p>The horizontal distance from the hot water supply outlet to the hot water use shall be no more than 10ft. This shall apply to the kitchens, bathrooms with showers or tub, and rooms with a clothes washer.</p> <p>XX1.3.3 Equivalent lighting.</p>		

	<p>Dwellings complying with at least one of the following requirements shall be deemed in compliance with the lighting requirements:</p> <p>1. Lamps over 15 watts shall be LED, or have an efficacy not less than 70 lumens per watt,</p> <p>or.</p> <p>2. At least 90% of the lamps or fixtures shall have an efficacy not less than 75 lumens per watt.</p> <p>Where compliance is based on efficacy the efficacy shall be on a manufacturer designation of efficacy on the lamp or fixture; or the lighting efficacy shall be on the construction plans</p>
Reason:	<p>Trying to create a simple energy option.</p> <p>Not sure what values should be in the Btu/h list of zones</p>
CC Action:	Disapprove
CC Modification:	
CC Reason:	Not usable as written; inconsistent with the energy code and total energy consumed by the building. Concept is OK but need some refinement. Question about the cooling demand by climate zone – constant versus scaled value.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A044	ID 8208	701.1.6 Alternative compliance for tropical zones	Final Formal Action: Disapprove
Submitter:	Steve Armstrong, Performance Point		
Comment:	<p>701.1.6 Alternative Gold level compliance for tropical zones. One or two family dwelling in the tropical zone at an elevation less than 2,400 ft. (731.5 m) above sea level that complies with the following shall achieve the Gold level for Chapter 7:</p> <p>(1) The residence complies with ICC IECC R401.2.1 Tropical zone.</p> <p>(2) The residence includes a minimum of 2 kW of PV and a minimum of 6 kWh of battery storage.</p> <p>(3) Any air conditioning has a minimum of 18 SEER.</p> <p>(4) Solar, wind or other renewable energy source supplies not less than 90% of the energy for service water heating.</p> <p>(5) Glazing in conditioned spaces has a solar heat gain coefficient of less than or equal to 0.25, or has an overhang with a projection factor equal to or greater than 0.30.</p> <p>(6) The exterior roof/ceiling complies with at least two of the following:</p> <p>(a) Minimum roof reflectance and emittance in ICC IECC Table C402.3.</p> <p>(b) Roof or ceiling has insulation with an R-value of R-15 or greater.</p>		

	<p>(c) Includes a radiant barrier.</p> <p>(7) Walls comply with at least one of the following:</p> <p>(a) Walls have an overhang with a projection factor equal to or greater than 0.30.</p> <p>(b) Walls have insulation with an R-value of R-13 or greater.</p> <p>(c) Walls have a solar reflectance of 0.64.</p> <p>(8) A ceiling fan is provided for bedrooms and the largest space that is not used as a bedroom; alternately a whole house fan is provided.</p> <p>(9) Wiring sufficient for a Level 2 (208/240V 40-80 amp) electric vehicle charging station is installed on the building site.</p> <p>701.1.6 Alternative compliance for tropical zones (707). Buildings in Tropical Zones where more than one-half of the occupied space is not air conditioned and 100 percent of the space is not heated can use this option to comply with chapter 7. Building can achieve either a silver or gold compliance level depending on the practices chosen. The building shall comply with the 707.1 mandatory practices and 707.2 additional practices. Note: To achieve a Gold level certification, all Gold level additional practices must be implemented</p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The full stand alone Tropical Zone Section with all of the proposed modifications recommended for approval, with or without modifications, is shown in Appendix XXXXXXXXXXXXXXX.</i></p>
Reason:	Adding compliance path for stand along Tropical Zone Section.
CC Action:	Disapprove
CC Modification:	
CC Reason:	In favor of stand alone Tropical Zone Section.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A045	ID 8204	701.1.7 Alternative Emerald Level	Final Formal Action: Accept as Modified
Submitter:	Craig Conner, Building Quality		
Comment:	Homes verified to meet the Passive House requirements shall be emerald for energy.		
Reason:	Passive Houses must meet stringent energy-related requirements. These should easily be emerald for energy.		
CC Action:	Accept as Modified		
CC Modification:	701.x.x Alternative Emerald level compliance. As an alternative, any building certified to PHIUS CORE (v3.1 - 2021) achieves the Emerald level for Chapter 7.		

	<u>Add PHIUS CORE (v3.1-2021) to reference chapter.</u>
CC Reason:	Original reason statement for disapproval was because no language was provided. This comment provided specific language to be incorporated into the standard. The TG encourages that, if necessary, additional changes to the language be submitted during the public comment period on the Draft Standard.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. APPROVE - Theresa Weston: Houses which are verified to PHIUS CORE Requirements (v3.1 2021) will be more than equivalent to emerald level. The PHIUS CORE requirements include passive energy conservation, air tightness, active conservation, renewable energy, appropriate moisture design, window comfort, ev charging infrastructure, combustion & fireplace safety, 3rd party on-site inspection & quality assurance, and electrification readiness. Suggested wording: <u>701.x.x Alternative Emerald level compliance. As an alternative, any building certified to PHIUS CORE (v3.1 - 2021) achieves the Emerald level for Chapter 7.</u>

A046	ID 8190	701.4 Mandatory practices	Final Formal Action: Accept
Submitter:	Theresa Weston, The Holt Weston Consultancy representing ABAA		
Comment:	<p><i>Modify the following sections:</i></p> <p>701.4.3.2 Air barrier, air sealing, building envelope testing, and insulation. Building envelope air barrier, air sealing envelope tightness, and insulation installation is verified to be in accordance with this Section and § 701.4.3.2.1. Insulation installation other than Grade 1 is not permitted</p> <p>(1) Testing. Building envelope tightness is tested. Testing is conducted in accordance with ASTM E779, <u>ASTM E1827, ASTM E3158 or ANSI/RESNET/ICC 380</u> using a blower door at a test pressure of 1.04 psf (50 Pa). Testing is conducted after rough-in and after installation of penetrations of the building envelope, including penetrations for utilities, plumbing, electrical, ventilation, and combustion appliances.</p> <p>.....</p> <p>705.6.2.1 Air leakage validation of building or dwelling units or sleeping units. A visual inspection is performed as described in § 701.4.3.2(2) and air leakage testing is performed in accordance with ASTM E779, or <u>ASTM E1827, ASTM E3158 or ANSI/RESNET/ICC 380.</u></p> <p>.....</p> <p>11.701.4.3.2 Air barrier, air sealing, building envelope testing and insulation. For portions of the building envelope that are exposed or created during the remodel, building envelope air tightness and insulation installation is verified to be in accordance with this Section and § 11.701.4.3.2.1. Insulation installation other than Grade 1 is not permitted.</p> <p>(1) Testing. Building envelope tightness is tested. Testing is conducted in accordance with ASTM E779, <u>ASTM E1827, ASTM E3158 or ANSI/RESNET/ICC 380</u> using a blower door at a test pressure of 1.04 psf (50 Pa). Testing</p>		

	<p>is conducted after rough-in and after installation of penetrations of the building envelope, including penetrations for utilities, plumbing, electrical, ventilation and combustion appliances.</p> <p>.....</p> <p>11.705.6.2.1 Air leakage validation of building or dwelling units or sleeping units. A visual inspection is performed as described in § 11.701.4.3.2(2) and air leakage testing is performed in accordance with ASTM E779, ASTM E1827, <u>ASTM E3158</u> or ANSI 380 <u>ANSI/RESNET/ICC 380</u>.</p> <p>-----</p> <p><i>Update the following references:</i></p> <p>E779- 2010 <u>2019</u> Standard Test Method for Determining Air Leakage Rate by Fan Pressurization</p> <p>E1827-2011(<u>2017</u>) Standard Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door</p> <p>ANSI/RESNET/ICC 380 – 2018 <u>2019</u> Standard for Testing Airtightness of Building Enclosures, Airtightness of Heating and Cooling Air Distribution Systems, and Airflow of Mechanical Ventilation Systems</p> <p>-----</p> <p><i>Add the following reference:</i></p> <p><u>ASTM E3158-2018 Standard Test Method for Measuring the Air Leakage Rate of a Large or Multizone Building</u></p>
Reason:	Update referenced air leakage testing criteria methods to correlate with those referenced in the IECC. Additionally, the publication version for test methods currently referenced in the NGBS. This is needed to keep NGBS up to date.
CC Action:	Accept
CC Modification:	
CC Reason:	
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A047	ID 8205	701.4.1.1 HVAC system sizing	Final Formal Action: Disapprove
Submitter:	Craig Conner, Building Quality		
Comment:	<p>xx1. Heating requirements.</p> <p>heating system input per sq ft building < xheat [zone]</p> <p>xx2. Cooling requirements.</p> <p>cooling system input per sq ft building < xcool [zone]</p> <p>xx3. Lighting requirements.</p> <p>Lighting shall comply with at least one of the following: Lamps over 15 watts shall be LED, or have an efficacy not less than 70 lumens per watt, or At least 90% of the lamps or fixtures shall have an efficacy not less than 75 lumens per watt. The efficacy shall be on a manufacturer designation of efficacy on the lamp or fixture; or the efficacy shall be on the construction plans.</p> <p>xx4. Water heating requirements.</p> <p>Sources of hot water are within 10 ft of the use of hot water or water heating piping has R-3 or more insulation.</p>		
Reason:	<p>This is a simple energy code to enforce.</p> <p>This proposal leaves it to the building designer to design and specify a residence with a small heating load and a small cooling load. It is up to the designer to stay within the loads specified. Of course the loads would vary by zone (climate). The values would need to be in a table in NGBS. The values are not in this proposal. Compliance means verifying that the design on the plans is within the allowed value..</p> <p>See the entertaining video at https://www.youtube.com/watch?v=Okn3XgwSX5Q</p> <p>Lighting would allow any lamps or fixtures that meet the required lighting efficacy. There is no need to try to count fixtures. Presumably code enforcement would just check a few lamps or fixtures. Checking a few is much better than trying to total the lighting wattage in the building.</p> <p>Is the lighting efficacy in this proposal reasonable?</p> <p>Hot water pipe length (approximates volume) is the most important part of water heating efficiency. Water in the pipe starts out at the temperature of surroundings, as hot water is only intermittently in the pipe but then cools. The length of hot water pipe that heated water needs to fill and the pipe that needs to be heated is more important than the efficiency of the water heating equipment says water heating expert Gary Klein.</p>		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Need more clarity. This proposal is not useable as written. Not clear what the heating and cooling inputs should be for each climate zone. This practice would be a better fit elsewhere; it does not fit in the HVAC section.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A048	ID 8183	701.4.2.1 and Duct air sealing	Final Formal Action: Accept as Modified
Submitter:	Karla Butterfield, Steven Winter Associates, Inc.		
Comment:	<p>New requirement:</p> <p><u>701.4.2.1 (2) Testing. Dwelling unit duct leakage testing. Testing is conducted following procedures in ANSI/RESNET/ICC Std. 380 or ASTM E1554 with a pressure differential of 0.1 inch w.g. (25 pa) across the entire system and demonstrating compliance with the following leakage rates:</u></p> <p><u>At rough-in test with air handler installed or at post construction, leakage shall be no greater than 4 cfm per 100 square feet of conditioned floor area (cfm/100cfa) or 40 Cfm</u></p> <p><u>At rough-in testing without the air handler installed, leakage shall be no greater than 3 cfm/100cfa or 30 Cfm</u></p> <p><u>For ducts within the thermal envelope, leakage shall be no greater than 8 cfm/100cfa or 80 Cfm</u></p>		
Reason:	Duct leakage testing is a requirement in the 2021 IECC (R403.3.6) and should be part of the standard.		
CC Action:	Accept as Modified		
CC Modification:	<p><u>701.4.2.1 (2) Testing. Dwelling unit duct leakage testing shall be required for single-family houses and multifamily structures of three stories or fewer above grade. Testing is conducted following procedures in ANSI/RESNET/ICC Std. 380 or ASTM E1554 with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system and demonstrating compliance with one of the following leakage rates:</u></p> <p><u>At rough-in test with air handler installed or at post construction, leakage shall be no greater than 4.0 CFM (113.3 L/min) per 100 square feet (9.29 m²) of conditioned floor area (CFM/100 cfa) or 40 CFM, whichever is greater; OR</u></p> <p><u>At rough-in testing without the air handler installed, leakage shall be no greater than 3 CFM/100 cfa (85 L/min/9.29 m²) or 30 CFM , whichever is greater; OR</u></p> <p><u>For ducts entirely within the thermal envelope, leakage shall be no greater than 8 CFM (226.6 L/min) /100 cfa (9.29 m²) or 80 CFM, whichever is greater.</u></p>		
CC Reason:	To accommodate mandatory duct testing for dwelling units with consideration for minimum duct leakage for smaller dwellings. Modification also reflects that there are no duct testing requirements under the commercial provisions of the IECC; it should not be mandatory under NGBS.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A049	ID 8179	701.4.3 Insulation and Air Sealing	Final Formal Action: Accept
Submitter:	Josh Hanson, US-EcoLogic		
Comment:	701.4.3.3 Multifamily air leakage alternative. Multifamily buildings four or more stories in height and in compliance with IECC section C402.5 (Air leakage thermal envelope) are deemed to comply with Sections 701.4.3.1 and 701.4.3.2.		
Reason:	Remove the exception for commercial buildings to follow the visual inspection path As it is now required in commercial and residential multifamily buildings.		

CC Action:	Accept
CC Modification:	
CC Reason:	
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. APPROVE - Joshua Robert Stack: Not sure this is a good idea.

A050	ID 8182	701.4.3.2.1 Insulation and Air Sealing	Final Formal Action: Accept as Modified
Submitter:	Carl Seville, SK Collaborative		
Comment:	<p>(1) Inspection is conducted before insulation is covered.</p> <p>(2) Air-permeable insulation is enclosed on all six sides and is in substantial contact with the sheathing material on one or more sides (interior or exterior) of the cavity. Air permeable insulation in ceilings is not required to be enclosed when the insulation is installed in substantial contact with the surfaces it is intended to insulate.</p> <p>(3) Cavity insulation uniformly fills each cavity side-to-side and top-to-bottom, without substantial gaps or voids around obstructions (such as blocking or bridging).</p> <p>(4) Cavity insulation compression or incomplete fill amounts to 2% or less, presuming the compressed or incomplete areas are a minimum of 70% of the intended fill thickness; occasional small gaps are acceptable.</p> <p>(5) Exterior rigid insulation has substantial contact with the structural framing members or sheathing materials and is tightly fitted at joints.</p> <p>(6) Cavity insulation is split, installed, and/or fitted tightly around wiring and other services.</p> <p>(7) Exterior sheathing is not visible from the interior through gaps in the cavity insulation.</p> <p>(8) Faced batt insulation is permitted to have side-stapled tabs, provided the tabs are stapled neatly with no buckling, and provided the batt is compressed only at the edges of each cavity, to the depth of the tab itself.</p> <p>(9) Where properly installed, ICFs, SIPs, and other wall systems that provide integral insulation are deemed in compliance with this section.</p> <p><u>(10) Thin film products, including but not limited to radiant barrier film, that are designed to be installed with an air spaced to achieve their designated R-value shall not be used as the sole thermal insulation in any exterior walls, floors, or ceilings. These products may be used in conjunction with glass fiber, mineral wool, foam, or cellulose insulation when installed with the designated air space and completely air sealed per manufacturer's installation instructions.</u></p>		
Reason:	We see some masonry buildings in Climate zone 1 using foil faced insulation and an air gap as the only insulation and regardless of manufacturer's claims they are not shown to provide adequate thermal value.		

CC Action:	Accept as Modified
CC Modification:	<u>(10) Thin film products, including but not limited to radiant barrier film, that are designed to be installed with an air spaced to achieve their designated R-value shall be installed per manufacturer's instructions.</u>
CC Reason:	The intent was not to exclude insulation materials that may be deemed sufficient for insulation, as long as it is installed per manufacturer direction.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. APPROVE WITH COMMENT - Kevin Duell: I'm concerned that these products are often not installed per manufacturer's instructions; not sure how NGBS can verify that have been

A051	ID 8203	702 Performance Path	Final Formal Action: Accept as Modified
Submitter:	Craig Conner, Building Quality,		
Comment:	Buildings certified as net zero energy shall be emerald for energy. Off-site generated energy associated with the building shall be permitted to be included.		
Reason:	Can't get much better than no net energy use. Questions: This should apply to both commercial and residential? Zero energy is a clear concept. Should buildings slightly above zero energy also get emerald?		
CC Action:	Accept as Modified		
CC Modification:	<u>701.x.x Alternative Gold level compliance. As an alternative, any building that qualifies as a DOE Zero Energy Ready Homes, Version 1, or DOE Zero Energy Ready Multifamily building achieves the Gold level for Chapter 7.</u> <u>701.x.x Alternative Emerald level compliance. As an alternative, any building demonstrated to be net zero energy based on modeled site or source energy analysis, or any building that meets the 2021 Appendix CC Zero Energy Commercial Building provisions, or any building that meets the 2021 Appendix RC Zero Energy Residential Building provisions, achieves the Emerald level for Chapter 7.</u>		
CC Reason:	Concept is good, but language needed work. Refined language to provide proper provisions and add clarity.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. APPROVE WITH COMMENT - John Barrows: This could use DoE Zero energy Ready Home V2 for the Gold level and NGBS Net Zero Badge criteria with renewable energy sources but less the battery storage for the Emerald level.		

A052	ID 8198	702.1 Point allocation	Final Formal Action: Accept as Modified
Submitter:	Jamie Carr, Eco Achievers		
Comment:	<p>702.2.1 ICC IECC analysis Minimum energy performance analysis. Energy efficiency features are implemented to achieve energy cost or source energy performance that meets the applicable minimum energy performance threshold. the IECC. A documented analysis using software in accordance with ICC IECC Section R405, or ICC IECC Section C407.2 through C407.5, applied as defined in the ICC IECC, is required.</p> <p><u>Residential Buildings</u></p> <p><u>A documented analysis that either demonstrates compliance with ICC IECC using software in accordance with ICC IECC Section R405 applied as defined in the ICC IECC, or that demonstrates performance at least as good as the NGBS Reference Home for ICC residential buildings using software approved by and applied as defined by the Adopting Entity, is required.</u></p> <p><u>Commercial Buildings</u></p> <p><u>A documented analysis that demonstrates compliance with the ICC IECC using software in accordance with ICC IECC Section C407.2 through C407.5 applied as defined in the ICC IECC, is required.</u></p> <p><u>[Note not to be included in Standard. The NGBS Reference Home table should be moved from the Verifier Resource Guide (VRG) to the Standard so that it is available to all.]</u></p>		
Reason:	<p>This proposed revision aligns the text of the Standard with how the Standard has been interpreted by Home Innovation Research Labs and implemented by Verifiers. Currently, Verifiers are not required to provide “a documented analysis using software in accordance with ICC IECC Section R405 or ICC IECC Section C407.2 through C407.5” to show that “energy efficiency features are implemented to achieve energy cost or source energy performance that meets the IECC.” Instead, Verifiers can show that implemented energy efficiency features result in performance that is at least as good as the NGBS Reference Home. There are cases where a building can demonstrate performance that exceeds the NGBS Reference Home (sometimes by a wide margin), but does not meet a level of cost or source energy performance that can be documented using software in accordance with the ICC IECC to meet the IECC. This discrepancy exists because that IECC residential code mostly evaluates the building envelope, whereas the NGBS Reference Home analysis includes other features that factor into overall building performance.</p> <p>I submitted a previous proposal that would have aligned Home Innovation Research Labs interpretation and Verifier practice with what I think is the clear meaning of the text of the Standard, but that proposal was voted down by the Task Group. This proposal takes a different approach, leaving the current Home Innovation Research Labs interpretation in place, but insisting that there be honesty and transparency about what that means in practice (i.e., NGBS does not require performance that meets the energy cost or source energy thresholds in the residential IECC when using software in accordance with ICC IECC Section 405).</p>		
CC Action:	Accept as Modified		
CC Modification:	<p>702.2.1 ICC IECC analysis Minimum energy performance analysis. Energy efficiency features are implemented to achieve energy cost or source energy performance that meets the applicable minimum energy performance threshold. the IECC. A documented analysis using software in accordance with ICC IECC Section R405, or ICC IECC Section C407.2 through C407.5, applied as defined in the ICC IECC, is required.</p> <p><u>Residential Buildings</u></p> <p><u>A documented analysis that either demonstrates compliance with ICC IECC using software in accordance with ICC IECC Section R405 applied as defined in the ICC IECC, or that demonstrates performance at least as good</u></p>		

	<p>as the NGBS Reference Home for ICC residential buildings in Appendix X using software approved by and applied as defined by the Adopting Entity, is required.</p> <p>Commercial Buildings</p> <p>A documented analysis that demonstrates compliance with the ICC IECC using software in accordance with ICC IECC Section C407.2 through C407.5 applied as defined in the ICC IECC, is required.</p> <p>[Note not to be included in Standard. The NGBS Reference Home table should be moved from the Verifier Resource Guide (VRG) to the Standard so that it is available to all.]</p>
CC Reason:	Added clarity and added the appropriate appendix to the standard.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A053	ID 8192	703.1 Mandatory Practices	Final Formal Action: Accept
Submitter:	Theresa Weston, The Holt Weston Consultancy representing ABAA		
Comment:	<p>Modify as follows:</p> <p>703.1.2 Building envelope leakage. The building thermal envelope is in accordance with ICC IECC R402.4.1.2 R402.4 or C402.5 as applicable.</p>		
Reason:	Corrects IECC section references. Sections are based on the IECC-2021 and may need additional updating once a draft of the IECC-2024 is available.		
CC Action:	Accept		
CC Modification:			
CC Reason:	Helps align residential and commercial sections pertaining to envelope leakage.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A054	ID 8191	Table 703.2.4 (a) & (b)	Final Formal Action: Disapprove																										
Submitter:	Theresa Weston, The Holt Weston Consultancy representing ABAA																												
Comment:	<p>Modify as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="9">Table 703.2.4(a) Building Envelope Leakage</th> </tr> <tr> <th rowspan="2">Max Envelope</th> <th colspan="8">Climate Zone</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> </tr> </table>			Table 703.2.4(a) Building Envelope Leakage									Max Envelope	Climate Zone								1	2	3	4	5	6	7	8
Table 703.2.4(a) Building Envelope Leakage																													
Max Envelope	Climate Zone																												
	1	2	3	4	5	6	7	8																					

	Leakage Rate (ACH50)	Points							
	4	1	2						
	3	2	4						
	2	3	5	3	4	4	6	8	7
	1	4	7	5	7	7	10	15	11
	Table 703.2.4(b) Building Envelope Leakage								
	Max Envelope Leakage Rate (ELR50)	Climate Zone							
		1	2	3	4	5	6	7	8
		Points							
	0.28	1	2						
0.23	2	4							
0.18	3	5	3	4	4	6	8	7	
0.13	4	7	5	7	7	10	15	11	
Reason:	The maximum air leakage numbers are revised to give no points (make mandatory) in correlation with proposals that have passed the initial process of the IECC-2024 process.								
CC Action:	Disapprove								
CC Modification:									
CC Reason:	Nothing has been finalized for the 2024 IECC. It is also not clear why very tight buildings in climate zones 3-8 would not receive points.								
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 0 Abstain: 2 Non-voting: 2								
Ballot 1 Comments:	ABSTAIN - Theresa Weston: The table should be updated to meet the IECC 2024 requirements. Points should only be given for air leakage levels that are less than those required in the IECC. I realize that the 2024 is a moving target but its requirements will be established prior to the release of the next NGBS edition. ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.								

A055	ID 8195	703.3 HVAC equipment efficiency	Final Formal Action: Accept as Modified
Submitter:	Jason LaFleur, GTI		
Comment:	<p>703.3.1 Combination space heating and water heating system (combo system) is installed using either a coil from the water heater connected to an air handler to provide heat for the building, dwelling unit or sleeping unit, or a space heating boiler using an indirect-fired water heater.</p> <p>Devices have a minimum combined annual efficiency of 0.80 and a minimum water heating recovery efficiency of 0.87. 4</p> <p><u>Devices have a minimum combined annual efficiency of 0.94 and a minimum water heating recovery efficiency of 0.95. 6</u></p> <p><u>Devices have a minimum combined annual efficiency of 1.15 and a minimum water heating recovery efficiency of 1.20. 10</u></p> <p><u>Devices have a minimum combined annual efficiency of 1.15 and a minimum water heating recovery efficiency of 1.20 and serves a third building load (e.g. pool heating). 12</u></p>		
Reason:	<p>Equipment energy efficiency is greatly enhanced when one thermal engine can meet loads for multiple end uses. Increasing technology development of high efficiency tankless water heaters matched with a variable speed air handler with integrated controls has proven much higher energy savings compared to conventional “combo” systems, warranting a higher point level (6 points proposed). Several leading tankless OEMs have recently introduced products in this product class.</p> <p>Additionally, the advent of electric or fuel-fired heat pump technology with air-to-water heat pumps brings opportunity to lift COP >1, as a combo application is ideal for these systems and will result in longer equipment cycles once a system has reached its peak operating efficiency. Additionally, a combo application then avoids “parasitic” heat pump loads where one heat pump (e.g. water heater) is robbing the delivered BTUs from another heat pump (e.g. space heating) during times of simultaneous need, such as winter heating (10 points proposed).</p> <p>Finally, heat pumps can be applied in “combo” applications serving three end uses (space conditioning, water heating, and pool or spa heating) to further extend equipment cycle time and leverage higher performance end use applications. The standard should encourage this integrated application. This is more common in single-family than multi-family (12 points proposed)</p>		
CC Action:	Accept as Modified		
CC Modification:	<p>703.3.1 Combination space heating and water heating system (combo system) is installed using either a coil from the water heater connected to an air handler to provide heat for the building, dwelling unit or sleeping unit, or a space heating boiler using an indirect-fired water heater.</p> <p><u>(a) Devices have a minimum combined annual efficiency of 0.80 and a minimum water heating recovery efficiency of 0.87. 4</u></p> <p><u>(b) Devices have a minimum combined annual efficiency of 0.94 and a minimum water heating recovery efficiency of 0.95. 6</u></p> <p><u>(c) Devices have a minimum combined annual efficiency of 1.15 and a minimum water heating recovery efficiency of 1.20. 10</u></p> <p><u>(d) Devices have a minimum combined annual efficiency of 1.15 and a minimum water heating recovery efficiency of 1.20 and serves a third building load (e.g. pool heating). 12</u></p>		

	Items (b)-(d) are not available if points are awarded in 703.3.3 through 703.3.6 or 703.5.
CC Reason:	The CC was concerned about duplicative points elsewhere in 703. This acknowledges higher efficiency products in the marketplace.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 0 Abstain: 2 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Christopher Perry: This proposal pertains to covered products regulated through Federal rulemaking. As a matter of policy, DOE abstains on such items which could impact rulemaking activities or result in a perceived conflict of interest. ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A056	ID 8234	Table 703.5.1(2)(c)	Final Formal Action: Accept as Modified																																																																			
Submitter:	Jamie Carr, Eco Achievers																																																																					
Comment:	<p>Include a new table that provides points central heat pump water heater systems.</p> <p>Table 703.5.1(2)(c) Storage Water Heater, Rated Storage Volume = 120 Gallons Medium Water Draw</p> <table border="1"> <thead> <tr> <th rowspan="3">Coefficient of Performance</th> <th colspan="8">Climate Zone</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> </tr> <tr> <th colspan="8">POINTS</th> </tr> </thead> <tbody> <tr> <td>X.X to <X.X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>X.X to <X.X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>X.X to <X.X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>=X.X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> </tbody> </table> <p>Table 703.5.1(2)(ed) Table 703.5.1(2)(de) Table 703.5.1(2)(ef)</p>									Coefficient of Performance	Climate Zone								1	2	3	4	5	6	7	8	POINTS								X.X to <X.X	X	X	X	X	X	X	X	X	X.X to <X.X	X	X	X	X	X	X	X	X	X.X to <X.X	X	X	X	X	X	X	X	X	=X.X	X	X	X	X	X	X	X	X
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=X.X	X	X	X	X	X	X	X	X																																																														
Reason:	Currently, NGBS only provides credit for residential-sized heat pump water heaters (HPWHs). However, commercial central HPWHs are becoming more prevalent in commercial buildings and should also receive points for the energy savings they can provide. It is recommended that Home Innovation Research Labs research and determine the appropriate distribution of COP ratings and number of assigned points.																																																																					
CC Action:	Accept as Modified																																																																					
CC Modification:	<p>Table 703.5.1(2)(c) Storage Water Heater, Rated Storage Volume > 120 Gallons Medium Water Draw</p> <table border="1"> <thead> <tr> <th rowspan="2">Coefficient of Performance</th> <th colspan="8">Climate Zone</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>									Coefficient of Performance	Climate Zone								1	2	3	4	5	6	7	8																																												
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	POINTS								
<u>2.5 to < 3.0</u>	X	X	X	X	X	X	X	X	X
<u>3.0 to < 3.5</u>	X	X	X	X	X	X	X	X	X
<u>3.5 to < 4.0</u>	X	X	X	X	X	X	X	X	X
<u>≥ 4.0</u>	X	X	X	X	X	X	X	X	X
CC Reason:	<p>This new table provides points for high efficiency central heat pump hot water heating systems that may be used for multiple dwelling units in multifamily buildings.</p> <p>Points to be determined later. To be consistent with existing tables and proposal included with this update.</p>								
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 0 Abstain: 2 Non-voting: 2</p>								
Ballot 1 Comments:	<p>ABSTAIN - Christopher Perry: This proposal pertains to covered products regulated through Federal rulemaking. As a matter of policy, DOE abstains on such items which could impact rulemaking activities or result in a perceived conflict of interest.</p> <p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p>								

Credits are only available for central systems that provide at least 80% of total system volume in the building.

A057	ID 8181	704.1 ERI Target compliance	Final Formal Action: Accept as Modified
Submitter:	Asa Foss, EPA		
Comment:	704.1 ERI Target compliance. Compliance with the energy chapter shall be permitted to be based on the ENERGY STAR ERI Target for ENERGY STAR National Single Family New Homes v3.1 or ENERGY STAR National Multifamily New Construction v1.1.		
Reason:	Since there are different versions of ENERGY STAR, we need to specify the appropriate program version. ENERGY STAR v3.1/v1.1 is most closely aligned with the 702 Performance Path, as detailed in the above proposal.		
CC Action:	Accept as Modified		
CC Modification:	See A057 Supplemental information.		
CC Reason:	To better align with the IECC and in recognition that EnergyStar is still a pathway through other sections and practices.		
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A058	ID 8194	705.6 Installation and performance verification	Final Formal Action: Disapprove
Submitter:	Theresa Weston, The Holt Weston Consultancy representing ABAA		
Comment:	<p><i>Modify as follows:</i></p> <p>705.6.2.1 Air leakage validation of building or dwelling units or sleeping units. A visual inspection is performed as described in § 701.4.3.2(2) and air leakage testing is performed in accordance with ASTM E779 or ASTM E1827.</p> <p style="text-align: center;"><i>Points awarded only for buildings where building envelope leakage testing is not required by ICC IECC. Points not awarded if points are taken under § 703.2.4.</i></p> <p>(1) A blower door test conducted <u>by a testing agency that is trained and certified by an ISO 17024 accredited certification body or deemed equivalent by the AHJ.</u> 3</p> <p>(2) Third-party verification is completed. 5</p>		
Reason:	Certification of the individual testing enables higher accuracy of the air leakage testing and, therefore, will enable more equitable application of the air leakage provisions.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Disapproval based on reducing companies' availability to offer testing.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 1 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>APPROVE WITH COMMENT - Joshua Robert Stack: Agree. No need to further burden companies offering this testing or the professional determination of the AHJ on which companies to allow to complete this testing.</p> <p>DISAPPROVE COMMITTEE ACTION - Theresa Weston: Local availability of certified testing agencies can be considered as part of the AHJ approval and this should allow for flexibility. This is not a mandatory practice so allowing points for this practice encourages the development of more trained and certified testing agencies.</p> <p>I suggest the following revised wording:</p> <p>(1) A blower door test conducted <u>by a testing agency that is trained and certified by an ISO 17024 accredited certification body or approved as equivalent by the AHJ.</u> 3</p> <p style="text-align: center;">Task Group 1 Response: Non-Persuasive</p> <p>Reason: The additional practice could potentially reduce the availability of potential companies/individuals to provide this service. Rural areas might struggle to meet the specific requirements listed.</p>		

A059	ID 8185	705.8 Construction Site Energy Management	Final Formal Action: Disapprove
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	<p>Prepare and implement a site energy management plan for construction phase activities. Include the below elements in the plan.</p> <ol style="list-style-type: none"> 1. <u>Assign a staff member of the general contractor who will be the responsible party for implementing the plan.</u> 2. <u>The plan must address the following: permanent equipment heating and cooling setpoints during construction; temporary heating setpoints; HVAC system use in unenclosed areas; temporary lighting energy use; permanent lighting energy use; exhaust and ventilation fan operation.</u> 3. <u>Setbacks for HVAC systems.</u> 4. <u>Non-work hour controls or management for lighting systems.</u> 5. <u>Jobsite plan communication including signage and plan distribution to subcontractors.</u> 6. <u>Subcontractor responsibilities.</u> 7. <u>Reporting and documentation procedures including site photos and inspection logs.</u> <p>HVAC system setbacks are not required during periods of increased humidity where elevated humidity would affect construction activities.</p>		
Reason:	To reduce construction phase energy use.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	It is not clear whether this plan will actually save energy. Some items are not clear/enforceable.		
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A060	ID 8186	705.8.2 Energy Efficient Appliances	Final Formal Action: Accept as Modified
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	<p>Install Consortium for Energy Efficiency (CEE) Tier 2 or higher tier appliances for the below types of appliances:</p> <ol style="list-style-type: none"> 1. <u>Refrigerators (3 pts)</u> 2. <u>Clothes Washers (2 pt)</u> 3. <u>Dishwashers (2 pt)</u> 4. <u>Dryers (3 pt)</u> 		
Reason:	CEE Tiers exceed ENERGY STAR efficiency levels.		

CC Action:	Accept as Modified
CC Modification:	<u>703.6.2.1 Appliances.</u> Install Consortium for Energy Efficiency (CEE) Tier 2 or higher tier appliances for the below types of appliances: <u>Refrigerators (3 pts)</u> <u>Dryers (3 pt)</u>
CC Reason:	To align this section with current 703.6.2 and recognize that CEE Tier II does not exist for all categories proposed.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 0 Abstain: 2 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Christopher Perry: This proposal pertains to covered products regulated through Federal rulemaking. As a matter of policy, DOE abstains on such items which could impact rulemaking activities or result in a perceived conflict of interest. ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A061	ID 8187	705.8.3 Hot Water Heaters	Final Formal Action: Disapprove
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	<u>Install one of the below types of domestic hot water heaters and meet the referenced efficiency rating where included.</u> <u>1. Heat pump or hybrid heat pump hot water heaters with a minimum 2.2 UEF (5 pts)</u> <u>2. Gas or electric tankless hot water heaters. Gas tankless hot water heaters must have a minimum 0.87 UEF rating (5 pts)</u>		
Reason:	Incentivize higher efficiency hot water heaters. ENERGY STAR heat pump water heater minimum efficiency is 2.2 UEF; gas tankless UEF minimum in ENERGY STAR is 0.87.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	This practice would provide more points for lower efficiency than 703.5.1. It is redundant with existing practices within the standard.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 0 Abstain: 2 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Christopher Perry: This proposal pertains to covered products regulated through Federal rulemaking. As a matter of policy, DOE abstains on such items which could impact rulemaking activities or result in a perceived conflict of interest. ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A062	ID 8193	706 Innovative Practices	Final Formal Action: Disapprove
Submitter:	Theresa Weston, The Holt Weston Consultancy representing ABAA		
Comment:	<p><i>Add section to Section 706 Energy Efficiency Innovative Practices:</i></p> <p>706.X Passive Survivability. Buildings are designed and constructed to maintain safe thermal conditions in the event of an extended power outage or loss of heating fuel, or provide back-up power to satisfy critical loads:</p> <p>(1) Demonstration of the building design ability to maintain safe thermal conditions through thermal modeling</p> <p>(2) Passive house certification</p> <p>(3) Adequate emergency back-up power available for critical loads.</p>		
Reason:	Resilience is currently only addressed in the NGBS Chapter 6 on Resource Efficiency (Materials), The proposed resiliency practices are better suited for the Energy Efficiency Chapter. These requirements are from the "How to Prepare Your Home" by Firewise/ Based on LEED pilot credit		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Words like "Safe" and "Adequate" are not measurable. Proposal lacks specificity regarding definition of safe conditions and time duration.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A063	ID 8196	706.12 Smart ventilation	Final Formal Action: Accept												
Submitter:	Aaron Gary, Tempo, Inc.														
Comment:	<p>706.12 Smart ventilation. A whole-building ventilation system is installed with automatic ventilation controls to limit ventilation during periods of extreme temperature, extreme humidity, and/or during times of peak utility loads and is in accordance with the specifications of ASHRAE Standard 62.2-2010 Section 4. 1</p> <p>11.706.12 Smart ventilation. A whole-building ventilation system is installed with automatic ventilation controls to limit ventilation during periods of extreme temperature, extreme humidity, and/or during times of peak utility loads and is in accordance with the specifications of ASHRAE Standard 62.2-2010 Section 4. 1</p> <p>SECTION 14:</p> <p>REFERENCED DOCUMENTS</p> <table border="1"> <thead> <tr> <th>DOCUMENT</th> <th>DATE</th> <th>TITLE</th> <th>SECTION</th> </tr> </thead> <tbody> <tr> <td>ASHRAE 62.2 2019</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4"><i>Ventilation and Acceptable Indoor Air Quality in Residential Buildings</i></td> </tr> </tbody> </table>			DOCUMENT	DATE	TITLE	SECTION	ASHRAE 62.2 2019				<i>Ventilation and Acceptable Indoor Air Quality in Residential Buildings</i>			
DOCUMENT	DATE	TITLE	SECTION												
ASHRAE 62.2 2019															
<i>Ventilation and Acceptable Indoor Air Quality in Residential Buildings</i>															

	<u>706.12,</u> <u>11.706.12,</u>
Reason:	Aligns with current version of ASHRAE & Chapter 9 practices.
CC Action:	Accept
CC Modification:	
CC Reason:	
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A064	ID 8197	706.12 Smart Ventilation	Final Formal Action: Accept as Modified
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	<p><u>1. A whole-building ventilation systems is installed with automatic ventilation controls to limit ventilation during periods of extreme temperature, extreme humidity, and/or during times of peak utility loads and is in accordance with the specifications of ASHRAE Standard 62.2-2010 Section 4. (1 pt)</u></p> <p><u>2. Install a demand-controlled ventilation system to reduce outside air ventilation rates when the home is not occupied. (1 pt)</u></p>		
Reason:	Introducing full design outside air when a home is unoccupied increases energy cost/usage. During humid times of the year continuous ventilation when spaces are unoccupied could contribute to elevated moisture levels in homes.		
CC Action:	Accept as Modified		
CC Modification:	<p><u>1. A whole-building ventilation systems is installed with automatic ventilation controls to limit ventilation during periods of extreme temperature, extreme humidity, and/or during times of peak utility loads and is in accordance with the specifications of ASHRAE Standard 62.2-2010 Section 4. (1 pt)</u></p> <p><u>2. Install a demand-controlled ventilation system to reduce outside air ventilation rates that is in accordance with specifications of ASHRAE Standard 62.2 Section 4. (1 pt)</u></p>		
CC Reason:	Corrected typo (from submitter, not in standard text). Removed version year; other proposals identify ASHRAE 62.2 2019. Removed reference to occupancy, as that is inherent within a demand control system. Added reference standard for item (2).		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

Section 8 Water Efficiency

P047	ID 8112	802.5 Faucets	Final Formal Action: Disapprove
Submitter:	Katie Norem, Evolve Technologies		
Comment:	Add new practice within Section 802.5. 802.5.X An automatic tub-spout diverter system (with corresponding showerhead valve to pause flow) designed to conserve hot water is installed.....3 point per tub/9 points max.		
Reason:	The auto diverting (thermostatic) tub spout system reduces hot water waste in several ways: reducing structural waste, eliminating behavioral waste, and preventing tub spout leaks. The ADTS functions by first purging the cold water in the plumbing lines (structural waste) through its tub spout fixture. By design, the tub spout expels structural waste more than 2 times faster than possible through a shower head. Warming the water in the manner not only significantly reduces hot water wait time, but also reduces the volume of structural waste that must be purged before hot water arrives. Due to the higher velocity, less thermal loss occurs as the water travels through the plumbing line to the shower. As a result, hot water arrives faster, and the volume that must be purged is reduced. Once hot water arrives, the tub spout fixture automatically blocks the tub spout's out flow and diverts hot water to the showerhead. The included valve (installed between the shower arm and showerhead) automatically pauses (reduced to a trickle) water flow from the showerhead until the bather is ready to shower. This pause eliminates Behavioral Waste by preventing hot water from inadvertently running down the drain while bathers are away from the shower while waiting for hot water. When ready to shower, the bater will pull the lanyard on the valve at the showerhead so resume normal flow and shower as usual. During the shower, the shut-off that automatically diverted hot water to the showerhead remains active. This tight, positively reinforced, thermostatically activated seal stop tub spout diverter leaks by preventing hot water from sneak past the diverter and running out of the tub spout during the shower. These three areas of savings combine to an average of 10 gallons of hot water saved for every shower taken. (Structural Waste ~ .4 gallons, Behavioral Waste ~ 5.1 gallons, Tub Spout leaks ~ 4.5 gallons)		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	This appears to be a proprietary product with only one manufacturer developing it right now. We are unsure about industry standards and certifications covering this technology. We are also curious about potential conflict with the plumbing code. Question for submitter regarding savings claim.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P048	ID 8009	802.5 Faucets	Final Formal Action: Accept
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	Create new section for "Toilets and Water Closets" that includes everything that is currently in 802.5.4 and renumber.		
Reason:	Section 802.5 is labeled as "Faucets." This header is inappropriate, as water closets and urinals are also included within this section.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26		

	Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P049	ID 8013	802.5 Faucets	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	(c) One or more composting toilets and/or waterless toilets or non-water urinals. <u>Waterless toilets and Non-water urinals</u> shall be tested in accordance with ASME A112.19.2/CSA B45.1.		
Reason:	Referring to both "waterless" and "nonwater" products is potentially confusing. Further, it is unclear why the NGBS would specify that waterless urinals but not waterless toilets must be tested. I assume that this was an error, as the reference standard covers both all ceramic fixtures and would apply to both product types.		
CC Action:	Accept as Modified		
CC Modification:	(c) One or more composting toilets and/or <u>non-flushing</u> waterless toilets or non-water <u>flushing</u> urinals. <u>Non-flushing toilets and Non-water</u> urinals shall be tested in accordance with ASME A112.19.2/CSA B45.1.		
CC Reason:	Waterless urinal is a trademarked term.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P050	ID 8063	802.6 Irrigation systems	Final Formal Action: Accept as Modified								
Submitter:	Chinedu Moneke, Home Innovation Research Labs (NGBS Green)										
Comment:	Further Clarification needed from Task Group for this practice. Also Add reference to Chapter 14.										
Reason:	Which version of the ASABE/ICC 802 Standard is required? Its not specified in the practice text or Chapter 14.										
CC Action:	Accept as Modified										
CC Modification:	Update standard to <u>2020</u> ASABE/ICC 802 <i>Add the following to Chapter 14 Reference Documents:</i>										
	<table border="1"> <thead> <tr> <th>DOCUMENT</th> <th>DATE</th> <th>TITLE</th> <th>SECTION</th> </tr> </thead> <tbody> <tr> <td>ASABE/ICC 802-2020</td> <td>2020</td> <td>Landscape Irrigation Sprinkler and Emitter Standard</td> <td>403.6(19b) 802.6.2 11.802.6.2</td> </tr> </tbody> </table>			DOCUMENT	DATE	TITLE	SECTION	ASABE/ICC 802-2020	2020	Landscape Irrigation Sprinkler and Emitter Standard	403.6(19b) 802.6.2 11.802.6.2
DOCUMENT	DATE	TITLE	SECTION								
ASABE/ICC 802-2020	2020	Landscape Irrigation Sprinkler and Emitter Standard	403.6(19b) 802.6.2 11.802.6.2								
CC Reason:	Added year to referenced standard.										
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26										

	Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P051	ID 8038	801.10 Pools and spas	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	<p>802.10.1 Pools and Spas.</p> <p>802.10.1 Pools and Spas with surface area greater than 36 sq. ft. and connected to a water supply shall have a dedicated meter to measure the amount of water supplied. MANDATORY to the pool or spa.</p> <p>802.10.2 (±) An automated motorized non-permeable pool cover <u>is installed and extends across</u> that covers the entire pool surface. 10</p>		
Reason:	Practice is confusing as written. The provision within the charging language has been overlooked as a mandatory practice due to its formatting. Reformat so that the charging language for this practice is a separate mandatory practice. Remove the word "dedicated." If a building has both a pool and a spa, I assume that one meter can serve both and achieve the same benefit.		
CC Action:	Accept as Modified		
CC Modification:	<p>802.10.1 Pools and Spas.</p> <p>802.10.1 Pools and Spas with surface area greater than 36 sq. ft. and connected to a water supply shall have a dedicated meter <u>capable of tracking water supplied to the pool(s) and/or spa(s)</u> to measure the amount of water supplied. MANDATORY to the pool or spa.</p> <p>802.10.2 (±) An automated motorized non-permeable pool cover <u>is installed and extends across</u> that covers the entire pool surface. 10</p>		
CC Reason:	Clarify what was intended by "dedicated."		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P052	ID 8068	803 INNOVATIVE PRACTICES	Final Formal Action: Disapprove
Submitter:	Heather Schrock, Self		
Comment:	<p>Add a new optional practice within 803 as follows:</p> <p>803.X Water Restoration Certificates. Purchase 100% of Water Restoration Certificates® (WRCs) to match the building's annual water budget based on design calculations of projected water use after the implementation of other water efficiency measures including indoor, outdoor, and process water (chiller, cooling towers, commercial kitchens as applicable).</p> <p>Each Water Restoration Certificate® represents 1,000 gallons of water restored to a critically dewatered river or stream at a time when that water is needed most. The water restoration must be new or an addition to an existing project, have permanence, be retired after the certificate is awarded, and have no negative impact</p>		

	<p>downstream. Project teams using alternative water sources may subtract these from the building's annual water budget to determine the number of Water Restoration Certificates required. Qualifying alternative water sources include municipally supplied reclaimed water ("purple pipe" water), graywater, on-site reclaimed water, collected rainwater, captured condensate, and rejected water from reverse osmosis systems. To calculate annual irrigation water use in the water budget, project teams should include the annual irrigation water use calculated using the results of the EPA Water Budget Tool.</p> <p>1 year of WRCs purchased.....10 points</p> <p>2 years of WRCs purchased.....15 points</p> <p>5 years of WRCs purchased.....20 points</p> <p>Please see https://www.b-e-f.org/programs/water-restoration-certificates/ for more information about Water Restoration Certificates. Also, please note the precedence of this suggestion in the LEED WRC Pilot Credit found here:https://www.usgbc.org/credits/new-construction-core-and-shell-schools-new-construction-retail-new-construction-healthc-109</p>
Reason:	: In the absence of the ability to reduce water usage to zero and/or to complement other water efficiency measures, this credit aims to restore natural water systems, restore wetlands and damaged watersheds, to promote biodiversity, promote healthy plants, biological communities, water storage, and infiltration.
CC Action:	Disapprove
CC Modification:	
CC Reason:	Need more information on the availability of this credit type. Appears proprietary and not well-defined across multiple organizations.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>APPROVE - Joshua Robert Stack: Should not be proprietary.</p>

Additional TG Proposed Changes

A065	ID 8156	Section 8 Water Efficiency	Final Formal Action: Disapprove
Submitter:	Craig Conner and Darrel McMaster, Self		
Comment:	All indoor and outdoor water used in the residence is rainwater. Water from wells, ponds, streams or rivers is not used. The residence shall receive emerald for water.		
Reason:	<p>Also this makes the WRI score zero?</p> <p>Water may come from precipitation that falls on roof or ground, but this item does not need to say that?</p>		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	In favor of action on A066.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p>		

	Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A066	ID 8158	Section 8 Water Efficiency	Final Formal Action: Accept as Modified
Submitter:	Craig Conner and Darrel McMaster, Self		
Comment:	Indoor water needs are met entirely by rainwater. Water from wells, ponds, streams or rivers is not used. Residence shall receive emerald for indoor water. (& the maximum water score?)		
Reason:	No potable water used indoors is as low as it gets. How should this item deal with grey water? This reused water counts the same as no potable water? Should that be stated?		
CC Action:	Accept as Modified		
CC Modification:	802.7.1(2d) and 802.7.2(2) points are increased to 30 and 46 60, respectively		
CC Reason:	Concept was already present within the standard (802.7.1(2d) and 802.7.2(2)), and we want to incentivize use of these fully engineered systems.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 1 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>DISAPPROVE COMMITTEE ACTION - Jonah Schein: Concept is good, but the language is not defined enough How is it verified that a home's needs are met by rainwater? This needs to be defined in an implementable format for HI.</p> <p>TG response addresses the CC's modification of points, i object to the CC's acceptance of this concept without additional details on how to verify no potable water is used indoors.</p> <p>Task Group 1 Response: Non-Persuasive</p> <p>Reason: The only thing that changed was the points, the commenter seemed to have issue with the content, which remains unchanged. The Task Group encourages that specific changes to the language be submitted during the public comment period on the Draft Standard.</p>		

A067	ID 8159	Section 8 Water Efficiency	Final Formal Action: Accept as Modified
Submitter:	Craig Conner and Darrel McMaster, Self		
Comment:	Where present the following meet or exceed the specified efficiency level. toilets 1.28 gif (gallons per flush) or less shower heads xxx		

	clothes washers xxx
Reason:	<p>The current legal maximum toilet is 1.6 gpf. The market is moving strongly towards 1.28 or less. Some states already have 1.28 as the state maximum. Best I can tell 1.28 costs no more. It appears that 1.28 sometimes costs less, possibly due to large sales volume. There are almost no toilets between 1.6 and 1.28. There are some toilets around 0.8 gpf.</p> <p>—Devices which are meant to fill a volume, such as a bathtub, should not be limited.</p> <p>—Should this item give points for each device separately? Obviously some homes will not have clothes washers, specially when new.</p> <p>—Dishwasher water use is too small to include here.</p>
CC Action:	Accept as Modified
CC Modification:	<p>802.5.4 Water closets and urinals are in accordance with the following:</p> <p><i>Items (1), (2) and (3) are unchanged.</i></p> <p>(4) All water closets are in accordance with § 802.5.4(2) and one or more of the following are installed:</p> <p>(a) Water closets have an effective flush volume <u>between of 1.2 and 0.9 gallons or less.</u></p> <p><u>(b) Water closets have an effective flush volume of 0.8 gallons or less.</u></p> <p><i>Items (b) and (c) are re-numbered.</i></p> <p>802.2 Water-conserving appliances.</p> <p><i>Items (1) and (2) remain unchanged.</i></p> <p>(3) clothes washer with an Integrated Water Factor <u>of less or equal to 3.2 for front-loading washers or 4.3 for top-loading of 3.8 or less.</u></p>
CC Reason:	CC wanted to use efficiency levels that were appropriate for the devices, clarify requirements, and increase rigor (for water closets).
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A068	ID 8162	802.4 (1) Showerheads	Final Formal Action: Accept
Submitter:	Olga Cano, EPA WaterSense		
Comment:	<p><u>Includes hand showers, body sprays, and rainfall panels. 2.0 GPM limit shall apply to cumulative flow of all devices located less than 96" in individual/two-person shower compartments or 35" apart in gang or group showers (as measured horizontally) apart. The total maximum combined flow rate of all showerheads in a shower compartment with floor area of 2,600 sq. in. or less is equal or less than 2.0 gpm. For each additional 1,300 sq. in. or any portion thereof of shower compartment floor area, an additional 2.0 gpm combined showerhead flow rate is allowed.</u> Showerheads shall comply with ASME A112.18.1/CSA B125.1 and shall meet the performance criteria of the EPA WaterSense Specification for showerheads. Showerheads shall be served by an automatic compensating valve that complies with ASSE 1016/ASME A112.1016/CSA B125.16 or ASME</p>		

	A112.18.1/CSA B125.1 and is specifically designed to provide thermal shock and scald protection at the flow rate of the showerhead
Reason:	To align with the recent AWE/PMI agreement here .
CC Action:	Accept
CC Modification:	
CC Reason:	
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A069	ID 8157	802.5 Faucets	Final Formal Action: Accept as Modified
Submitter:	Amy Otley, US-EcoLogic		
Comment:	<p>Install water-efficient lavatory faucets with flow rates not more than 1.5 gpm (5.68 L/m), tested in compliance with ASME A112.18.1/CSA B125.1 and meeting the performance criteria of the EPA WaterSense High-Efficiency Lavatory Faucet Specification:</p> <p>(1) Flow rate = 1.5 gpm [All Faucets in a bathroom <u>all residential bathrooms</u> are in compliance] 1 [3 max] <i>[1 point awarded for each bathroom. In multifamily buildings, the average of the points assigned to individual dwelling units or sleeping units number of bathrooms per unit may be used as the number of points awarded for this practice, rounded to the nearest whole number.]</i></p> <p>(2) Flow rate = 1.2 gpm [All Faucets in a bathroom <u>all residential bathrooms</u> are in compliance] 2 [6 max] <i>[2 points awarded for each bathroom. In multifamily buildings, the average of the points assigned to individual dwelling units or sleeping units number of bathrooms per unit may be used as the number of points awarded for this practice, rounded to the nearest whole number.]</i></p> <p>(3) Flow rate = 1.5 gpm for all lavatory faucets in the dwelling unit(s) or sleeping unit(s) <u>and common area(s)</u>..... 6 Additional</p> <p>(4) Flow rate =1.5 gpm for all lavatory faucets in the dwelling unit(s), and at least one bathroom has faucet(s) with flow rate(s) = 1.2 gpm..... 8 Additional</p> <p>(5) Flow rate = 1.2 gpm for all lavatory faucets in the dwelling unit(s) <u>and common area(s)</u>..... 12 Additional</p>		
Reason:	Items (1) and (3) are redundant, items (2) and (5) are redundant. "All faucets in the bathroom" and "all lavatory faucets in dwelling units or sleeping units" mean the same thing. Language added to clarify common spaces for multifamily projects. Language adjusted to match the rest of the bullets.		
CC Action:	Accept as Modified		
CC Modification:	<p>Install water-efficient lavatory faucets with flow rates not more than 1.5 gpm (5.68 L/m), tested in compliance with ASME A112.18.1/CSA B125.1 and meeting the performance criteria of the EPA WaterSense High-Efficiency Lavatory Faucet Specification:</p> <p>Flow rate ≤ 1.5 gpm [All Faucets in a bathroom <u>all residential bathrooms</u> are in compliance] 1 [3 max]</p>		

	<p>[1 point awarded for each bathroom. In multifamily buildings, the average of the points assigned to individual dwelling units or sleeping units [number of bathrooms per unit] may be used as the number of points awarded for this practice, rounded to the nearest whole number.]</p> <p>Flow rate ≤ 1.2 gpm [All Faucets in a bathroom <u>all residential bathrooms</u> are in compliance] 2 [6 max]</p> <p>[2 points awarded for each bathroom. In multifamily buildings, the average of the points assigned to individual dwelling units or sleeping units [number of bathrooms per unit] may be used as the number of points awarded for this practice, rounded to the nearest whole number.]</p> <p>Flow rate ≤ 1.5 gpm for all lavatory faucets in the dwelling unit(s) <u>or sleeping unit(s)</u> 6 Additional</p> <p>Flow rate ≤ 1.5 gpm for all lavatory faucets in the dwelling unit(s) <u>or sleeping units</u>, and at least one bathroom has faucet(s) with flow rate(s) ≤ 1.2 gpm..... 8 Additional</p> <p>Flow rate ≤ 1.2 gpm for all lavatory faucets in the dwelling unit(s) <u>or sleeping units</u> 12 Additional</p>
CC Reason:	For clarity and resolve redundancy
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A070	ID 8178	803 Innovative Practices	Final Formal Action: Disapprove
Submitter:	Theresa Weston, The Holt Weston Consultancy representing ABAA		
Comment:	<p><i>Add resilience section to Water Efficiency Innovative Practices – Section 803:</i></p> <p><u>803.X: Water Supply Resilience. Water storage and purifications systems are designed and installed to provide potable water during power outages. ...4 points</u></p>		
Reason:	Resilience is currently only addressed in the NGBS Chapter 6 on Resource Efficiency (Materials). A proposed resiliency practice relating to maintenance of potable water during power outage is better suited to the Water Efficiency Section. Power outages can result from many different resiliency events.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Unsure of water storage component. How will store water remain potable (i.e., free of bacteria and other harmful growths like Legionella)? Loss of potable water is not necessarily tied to power outages.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 25</p> <p>Disapprove committee action: 1</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>DISAPPROVE COMMITTEE ACTION - Joshua Robert Stack: This would increase resilience.</p> <p>Task Group 1 Response: Non-Persuasive</p> <p>Reason: Concerns raised by the Consensus Committee at the November meeting are still valid and were not addressed by the commenter. No new information was presented. Task Group 1 prefers the action the CC took at the November meeting.</p>		

Section 9 Indoor Environmental Quality

P053	ID 8064	901.2 Solid fuel-burning appliances	Final Formal Action: Accept as Modified
Submitter:	Chinedu Moneke, Home Innovation Research Labs (NGBS Green)		
Comment:	Confirm that this practice was only intended for indoor use then propose revision by clarifying that this only applies to indoor fireplaces		
Reason:	Slight confusion as to whether this practice applies only to indoor use		
CC Action:	Accept as Modified		
CC Modification:	<p>901.2.1 Solid fuel-burning fireplaces, inserts, stoves and heaters inside thermal envelope or pressure boundary are code compliant and are in accordance with the following requirements...</p> <p><i>Items (1) through (5) remain the same.</i></p> <p>901.2.2 <u>Where installed</u> Fireplaces, woodstoves, pellet stoves, or masonry heaters are not installed inside thermal envelope or pressure boundary. 6</p>		
CC Reason:	Rewrote into legislative language.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P054	ID 8062	901.13 Carbon monoxide (CO) alarms	Final Formal Action: Accept as Modified
Submitter:	Chinedu Moneke, Home Innovation Research Labs (NGBS Green)		
Comment:	Include similar practice from IBC: 901.13: Carbon Monoxide (CO) alarms. A carbon monoxide (CO) alarm is provided in accordance with the IRC Section 315 or IBC Section 915 as applicable		
Reason:	This section only references the IRC. I recommend including a similar section from the IBC as this is an important safety measures in residential buildings		
CC Action:	Accept as Modified		
CC Modification:	901.13: Carbon Monoxide (CO) alarms. A carbon monoxide (CO) alarm is provided in accordance with the IRC Section 315 <u>or IBC Section 915, as applicable.</u>		
CC Reason:	Original proposal show did not reflect new language with formatting		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. APPROVE WITH COMMENT - Joshua Robert Stack: Should provide additional points for low level CO monitor		

P055	ID 8028	901.15 Non-smoking areas	Final Formal Action: Accept as Modified
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	<p>901.15 Non-smoking areas. Environmental tobacco smoke is minimized by one or more of the following:</p> <p>(1) All interior common areas of a multifamily building are designated as non-smoking areas with posted signage.</p> <p>(2) Exterior smoking areas of a multifamily building are designated with posted signage and located a minimum of 25 ft. from entries, outdoor air intakes, and operable windows.</p> <p><u>(3) The entire multifamily building is designated as non-smoking with posted signage and restrictions in the leases.</u></p>		
Reason:	Building owners that commit to non-smoking multifamily buildings (both common areas and apartments) should be incentivized with points toward certification.		
CC Action:	Accept as Modified		
CC Modification:	<p><i>Modify as follows:</i></p> <p>901.15 Non-smoking areas. Environmental tobacco smoke is minimized by one or more of the following:</p> <p>(1) All interior common areas of a multifamily building are designated as non-smoking areas with posted signage.</p> <p>(2) Exterior smoking areas of a multifamily building are designated with posted signage and located a minimum of 25 ft. from entries, outdoor air intakes, and operable windows.</p> <p><u>(3) The entire multifamily building and site is designated as non-smoking with posted signage and restrictions in the leases.</u></p>		
CC Reason:	The new practice (3) is redundant with (1) and (2), projects should not achieve points in multiple practices for doing the same thing.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P056	ID 8110	902.1 Spot ventilation	Final Formal Action: Disapprove
Submitter:	Justin Mahley, Panasonic		
Comment:	902.1.4.1 Exhaust fans energy star most efficient and HVI certified at .375 static pressure (add extra points per fan)		
Reason:	Typical ducts for spot ventilation create more static pressure than what is listed by energy star at .25sp. By adding this, builders will be rewarded for installing fans that meet the typical static pressure found on homes, .375		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Energy Star efficient change is annual but NGBS is few years		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p>		

	Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P057	ID 8111	902.2 Building ventilation systems	Final Formal Action: Disapprove
Submitter:	Justin Mahley, Panasonic		
Comment:	(3) Heat-recovery ventilator - Condensate drain is required or see mfg installation requirements for verification (4) Energy-recovery ventilator – no condensate drain is required if the manufacturer deems that it is not required because of equipment design and efficiency.		
Reason:	Under 902.2.1 item 4 we ought to specify whether the product needs a condensate drain for HRV and ERV. This helps the builder choose the installation practice most fitting for his project or product.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Builders are required to install everything according to manufacturer’s instructions.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P058	ID 8081	902.2 Building ventilation systems	Final Formal Action: Accept as Modified
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	Change 902.2.1 from optional to mandatory. Maintain ASHRAE 62.2-2010 as the reference standard.		
Reason:	Tighter construction standards make providing ventilation more important than in the past. In addition, natural ventilation is not feasible during hot summer months and cold winter months.		
CC Action:	Accept as Modified		
CC Modification:	<p><i>Replace 902.2.1 with the following.</i></p> <p>902.2.1 One of the following whole building ventilation systems is implemented <u>in the dwelling units</u> and is in accordance with the specifications of at least one of the following as applicable:</p> <p><u>ASHRAE 62.2-2010 2019</u></p> <p><u>2021 International Mechanical Code</u></p> <p><u>2021 International Residential Code</u></p> <p>An explanation of the operation and importance of the ventilation system is included in either 1001.1 or 1002.2. M*</p> <p>{*Mandatory where the maximum air infiltration rate is less than 5.0 ACH50}</p>		
CC Reason:	Agreed in principle with the comment. Language makes ventilation in the dwelling units mandatory in alignment with 2021 IMC. Added specific section numbers for clarity and specificity. Updated ASHRAE		

	reference to current version of 62.2 as it allows designers to use take advantage of smart ventilation controllers when designing and calculating ventilation rates.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P059	ID 8031	902.3 Radon reduction measures	Final Formal Action: Accept as Modified
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	Figure 9.1 EPA Map of Radon Zones <u>should be from the relevant IRC</u>		
Reason:	Replace with map from the 2018 IRC (or better the 2024 IRC). The 2018 ICC codes are the reference documents for the 2020 NGBS, but a radon map from the 2015 IRC is included. This appears to be an oversight.		
CC Action:	Accept as Modified		
CC Modification:	<p>902.3 Radon reduction measures. Radon reduction measures are in accordance with IRC Appendix <u>AF Radon Control Methods</u> or § 902.3.1. Radon Zones as identified by the AHJ or, if the zone is not identified by the AHJ, as defined in Figure 9(1).</p> <p>(1) Buildings located in Zone 1</p> <p>(a) a passive radon system is installed M</p> <p>(b) an active radon system is installed 12</p> <p>(2) Buildings located in Zone 2 or Zone 3</p> <p>(a) a passive radon system is installed 6</p> <p>(b) an active radon system is installed 12</p> <p>Figure 9.1 EPA Map of Radon Zones should be from the relevant IRC <u>of the 2024 International Residential Code, a copyrighted work of the International Code Council, www.iccsafe.org. ©</u></p>		
CC Reason:	Updated to current version of IRC per Censuses Committee direction.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P060	ID 8091	905 INNOVATIVE PRACTICES	Final Formal Action: Disapprove
Submitter:	Marla Esser Cloos, Self		
Comment:	Health and Wellness Professional. <u>At least one member of the design and build team will be trained or certified in health and wellness with regards to emissions from materials, products, and finishes selected and used in the project.</u>		
Reason:	Many practices in Chapter 9: Indoor Environmental Quality inherently include health and wellness considerations around emissions from materials, products and finishes selected and used in the project. One or more team members being trained or certified in health and wellness practices will help to ensure that material, product and finish selections and practices are chosen and implemented to prioritize building workers' and residents' health and wellness in the home. Additional information about the importance of emissions from materials, products, and finishes to support residents' health and wellness may be found in NGBS Green+ Badges Workbook, NGBS+ Wellness section, starting on p. 14.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	P070 already addresses the most important aspect of this proposal which is the delivery of the training to the project team, construction team, homeowners & tenants. Having a professional team is not sufficient for points and concept of wellness is very broad.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P061	ID 8042	905 INNOVATIVE PRACTICES	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	905.6 Indoor Air Quality Monitoring. Indoor air quality monitors designed for continuous monitoring of temperature, relative humidity, PM2.5, CO2, and TVOCs are installed in single-family homes or multifamily common areas. For multifamily common areas, a minimum of one monitor is installed per 5,000 square feet of common area space. 4 points		
Reason:	Real-time indoor air quality monitoring provides actionable feedback about air pollutants that affect resident health.		
CC Action:	Accept as Modified		
CC Modification:	<p>904.0 Intent. IAQ is protected by best practices to <u>monitor and</u> control ventilation, moisture, pollutant sources and sanitation.</p> <p>904.4 Indoor Air Quality Monitoring</p> <p>905.1 904.4.1 Humidity Monitoring system. Humidity monitoring system is installed with a mobile base unit that displays readings of temperature and relative humidity. The system has a minimum of two remote sensor units. One remote sensor unit is placed permanently inside the conditioned space in a central location, excluding attachment to exterior walls, and other remote sensor unit is placed permanently outside of the conditioned space. 2 points</p> <p>904.4.2 Airborne Pollutant Monitoring. Indoor air quality sensors designed for continuous monitoring of PM2.5, TVOC, and CO₂ are installed. Instantaneous and trending data are accessible via website or mobile application in near-real-time.</p>		

	<p><u>(1) Sensors are installed within the kitchen area of each dwelling unit. 4 points</u></p> <p><u>(2) Sensors are installed within each bedroom.....2 points</u></p> <p><u>(3) Sensors are installed within multifamily amenity areas. At least one sensor is installed per 5,000 square feet of common area space. 2 points</u></p> <p><u>(4) Installed devices are also capable of monitoring and providing trending data for at least two of the following: air pressure, radon, CO, NO₂, Methane, Ozone, Formaldehyde 1 Additional</u></p> <p><i>Moves existing 905.1 from Innovation Practices to Indoor Air Quality</i></p>
CC Reason:	Original proposal was modified to eliminate overlap with existing Humidity Monitoring section 905.1 and separate dwelling unit from multifamily common space monitoring. Both Monitoring proposals were then relocated to Section 904.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 25</p> <p>Disapprove committee action: 1</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>DISAPPROVE COMMITTEE ACTION - Kevin Duell: All IAQ sensors on the market are of varying quality and accuracy - there should be standards applied to each sensor type to provide some assurance that readings are accurate, meaningful and useful.</p> <p>Most sensors require periodic cleaning and calibration to be accurate and useful - there should be maintenance provisions included here.</p> <p>The monitoring system should provide readouts that are meaningful. Specifically, some measured quantities mentioned in the proposal are only meaningful on an 8-hour or daily average (versus an instantaneous or real-time reading) and even annual averages are important to track for some (like NO₂).</p> <p>Furthermore, they systems should suggest actions, like "turn on building exhaust" or "turn on range hood", so that occupants know how to respond to readings and can improve their indoor air quality. Otherwise, the data can be ignored or misinterpreted, failing to accomplish IAQ improvements (if no action is taken) or wasting energy (if excessive action is taken).</p> <p>In short, this proposal is incomplete. As such, it could cause occupants unwarranted alarms - or provide false assurances - depending on the accuracy or reporting periods of the data.</p> <p>Also, air pressure is not a pollutant, and what is the value of monitoring it?</p> <p>Task Group 1 Response: Non-Persuasive</p> <p>Reason: TG believes that adding sensors for pollution monitoring is a good idea, and the approved language will be included in the Public Comment Draft. The TG encourages that specific changes to the language be submitted during the public comment period on the Draft Standard.</p>

P062	ID 8016	905.4 Sound barrier	Final Formal Action: Accept as Modified
Submitter:	James V. Fera, Self		
Comment:	<p>905.4 Sound barrier. Provide room-to-room privacy between bedrooms and adjacent living spaces within dwelling units or homes by achieving an <u>STC greater than 52 articulation index (AI) between 0 and 0.15</u> per the criteria below:</p> <p>Articulation Index 0 to 0.05 = STC greater than 55 (NIC greater than 47) by meeting one of the following assemblies:</p> <p><u>Steel frame construction:</u></p> <p><u>2 ½ " metal studs @ 24" o.c.</u> <u>5/8" gypsum wallboard (2 layers on each side), batt insulation</u> <u>3 5/8" metal studs @ 24" o.c.</u> <u>5/8" gypsum wallboard (at least 1 layer on one side, 2 layers on other side), batt insulation</u></p> <p><u>Wood frame construction:</u></p> <p><u>2 x 4 wood studs @ 16" o.c.</u> <u>5/8" gypsum wallboard (2 layers on each side), batt insulation</u></p> <p>Articulation Index 0.05 to 0.15 = STC 52 to 55 (NIC 44 to 47) by meeting one of the following assemblies:</p> <p><u>Steel frame construction:</u></p> <p><u>2 ½ " metal studs @ 24" o.c.</u> <u>5/8" gypsum wallboard (at least 1 layer on one side, 2 layers on other side), batt insulation</u> <u>3 5/8" metal studs @ 24" o.c.</u> <u>5/8" gypsum wallboard (2 layers on each side)</u></p> <p><u>Wood frame construction:</u></p> <p><u>2 x 4 wood studs @ 16" o.c.</u> <u>5/8" gypsum wallboard (at least 1 layer on one side, 2 layers on other side), batt insulation</u></p>		
Reason:	The practice as written is unusable and the Articulation Index (AI) is not used.		
CC Action:	Accept as Modified		
CC Modification:	<p>905.4 Sound barrier. Provide room-to-room privacy between bedrooms and adjacent living spaces within dwelling units or homes by achieving an <u>STC greater than 52 articulation index (AI) between 0 and 0.15</u> per the criteria below:</p> <p>Articulation Index 0 to 0.05 = STC greater than 55 (NIC greater than 47) = <u>Articulation Index 0 to 0.05</u></p> <p>Articulation Index 0.05 to 0.15 = STC 52 to 55 (NIC 44 to 47) = <u>Articulation Index 0.05 to 0.15</u></p>		
CC Reason:	Agree that STC is more widely used metric and should be primary. Thought that wall assembly guidance should be part of the Builder Resource Guide & Verifier Resource Guide not part of the standard as there are move assemblies that could be employed to meet the STC rating than the ones listed in the proposal.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p>		

	Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P063	ID 8066	905.5 Evaporative coil mold prevention	Final Formal Action: Accept as Modified
Submitter:	Chinedu Moneke, Home Innovation Research Labs (NGBS Green)		
Comment:	905.6: Building is an all electric home with no gas appliance/equipment. One point awarded.		
Reason:	Add a new practice 905.6 for an all electric home, no gas appliances.		
CC Action:	Accept as Modified		
CC Modification:	<u>901.3: Building is all-electric or has no combustion appliances, equipment, or fixtures inside the building thermal envelope or pressure boundary. – 1 Point</u> <u>Re-number subsequent sections</u>		
CC Reason:	Agree with proposal in concept as studies have shown the positive health implications of living in a homes that does not have combustion equipment within the building thermal envelope but felt that it was misplaced in section 905. Relocated in section 901 where credit is already available for non-combustion space and water heating equipment and appliances.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 1 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>DISAPPROVE COMMITTEE ACTION - Kevin Duell: Combustion appliances like furnaces, water heaters, boilers, fireplaces and dryers vent directly outside, releasing no combustion products to the interior - as long as they are installed and maintained properly - and credits already exist for these applications. All dwelling units - even all-electric - are required to have smoke and carbon monoxide detectors to prevent mishaps - and this is a mandatory practice in the NGBS. Kitchens are required to have some form of exhaust per ICC. Best practice is a range hood exhausting directly outside which studies have shown to effectively remove cooking byproducts - from both electric and gas cooktops and ranges - and NGBS provides credit for this.</p> <p>Referring to the reason statement, I can find no existing credits for "non-combustion space and water heating equipment and appliances" in Section 901.</p> <p>In short, this proposal is an oversimplification. It appears to be an electrification measure, rather than an IAQ measure.</p> <p>Task Group 1 Response: Non-Persuasive</p> <p>Reason: The items raised by the commenter are addressed in other sections of the standard. The TG encourages the use of Public Comments if the commenter wishes to relocate this practice.</p>		

Additional TG Proposed Changes

A071	ID 8139	901.3 Garages	Final Formal Action: Accept as Modified
Submitter:		Aaron Gary, Tempo, Inc.	
Comment:		<p>901.3 Garages. Garages are in accordance with the following:</p> <p>(1) Attached garage</p> <p>(a) Doors installed in the common wall between the attached garage and conditioned space are tightly sealed and gasketed. M 2</p> <p>(b) A continuous air barrier is provided separating the garage space from the conditioned living spaces. M 2</p> <p>(c) For one- and two-family dwelling units, a 100 cfm (47 L/s) or greater ducted or 70 cfm (33 L/s) cfm or greater unducted wall exhaust fan is installed and vented to the outdoors and is designed and installed for continuous operation or has controls (e.g., motion detectors, pressure switches) that activate operation for a minimum of 1 hour when either human passage door or roll-up automatic doors are operated. For ducted exhaust fans, the fan airflow rating and duct sizing are in accordance with ASHRAE Standard 62.2-2007 Section 7.3. 8</p> <p>11.901.3 Garages. Garages are in accordance with the following:</p> <p>(1) Attached garage</p> <p>(a) Where installed in the common wall between the attached garage and conditioned space, the door is tightly sealed and gasketed. M 2</p> <p>(b) A continuous air barrier is provided between walls and ceilings separating the garage space from the conditioned living spaces. M 2</p> <p>(c) For one- and two-family dwelling units, a 100 cfm (47 L/s) or greater ducted, or 70 cfm (33 L/s) cfm or greater unducted wall exhaust fan is installed and vented to the outdoors, designed and installed for continuous operation, or has controls (e.g., motion detectors, pressure switches) that activate operation for a minimum of 1 hour when either human passage door or roll-up automatic doors are operated. For ducted exhaust fans, the fan airflow rating and duct sizing are in accordance with ASHRAE Standard 62.2-2007 Section 7.3. 8</p> <p>SECTION 14:</p> <p>REFERENCED DOCUMENTS</p> <p>DOCUMENT</p> <p>DATE</p> <p>TITLE</p> <p>SECTION</p> <p><u>ASHRAE 62.2</u></p> <p><u>2019</u></p>	

Ventilation and Acceptable Indoor Air Quality in Residential Buildings

901.3,

11.901.3,

Reason: Updated reference to current version of ASHAAE 62.2 as there didn't appear to be any substantive differences in Section 7.3 between the 2007 and 2019 versions.

CC Action: Accept as Modified

CC Modification:

Modify as follows:

901.3 Garages. Garages are in accordance with the following:

(1) Attached garage

(a) Doors installed in the common wall between the attached garage and conditioned space are tightly sealed and gasketed. **M 2**

(b) A continuous air barrier is provided separating the garage space from the conditioned living spaces. **M 2**

(c) For one- and two-family dwelling units, a 100 cfm (47 L/s) or greater ducted or 70 cfm (33 L/s) cfm or greater unducted wall exhaust fan is installed and vented to the outdoors and is designed and installed for continuous operation or has controls (e.g., motion detectors, pressure switches) that activate operation for a minimum of 1 hour when either human passage door or roll-up automatic doors are operated. For ducted exhaust fans, the fan airflow rating and duct sizing are in accordance with ASHRAE Standard 62.2-~~2007~~ 2019 Section 7.3. **8**

11.901.3 Garages. Garages are in accordance with the following:

(1) Attached garage

(a) Where installed in the common wall between the attached garage and conditioned space, the door is tightly sealed and gasketed. **M 2**

(b) A continuous air barrier is provided between walls and ceilings separating the garage space from the conditioned living spaces. **M 2**

(c) For one- and two-family dwelling units, a 100 cfm (47 L/s) or greater ducted, or 70 cfm (33 L/s) cfm or greater unducted wall exhaust fan is installed and vented to the outdoors, designed and installed for continuous operation, or has controls (e.g., motion detectors, pressure switches) that activate operation for a minimum of 1 hour when either human passage door or roll-up automatic doors are operated. For ducted exhaust fans, the fan airflow rating and duct sizing are in accordance with ASHRAE Standard 62.2-~~2007~~ 2019 Section 7.3. **8**

SECTION 14:

REFERENCED DOCUMENTS

DOCUMENT	DATE	TITLE	SECTION
<u>ASHRAE 62.2</u>	<u>2019</u>	<u>Ventilation and Acceptable Indoor Air</u>	<u>901.3,</u>

			<u>Quality in Residential Buildings</u>	<u>11.901.3.</u>
CC Reason:	Having the year in the practice language is helpful to the users to understand.			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2			
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.			

A072	ID 8142	902 Pollutant Control	Final Formal Action: Accept as Modified																								
Submitter:	Aaron Gary, Tempo, Inc.																										
Comment:	<p>902.1.3 Kitchen range, bathroom, and laundry exhaust are verified to air flow specification. Ventilation airflow at the point of exhaust is tested to a minimum of: SM</p> <p>(a) 100 cfm (47.2 L/s) intermittent or 2550 cfm (11.8 L/s) continuous for kitchens, and</p> <p>(b) 50 cfm (23.6 L/s) intermittent or 205 cfm (9.4 L/s) continuous for bathrooms and/or laundry</p> <p><u>Exception: Kitchen range hoods that are ducted to the outside with 6-inch of larger duct.</u></p>																										
Reason:	Changed to Mandatory to aligns with 2021 IMC & 2024 IMC IECC where the testing of exhaust ventilation is required in residential kitchens. Continuous operation rate increased to 50 CFM to align with 2024 IMC.																										
CC Action:	Accept as Modified																										
CC Modification:	<p>902.1.3 Where installed Kitchen range, bathroom, and laundry area exhaust are verified to air flow specification. Ventilation airflow at the point of exhaust is tested <u>in accordance with BSR/RESNET/ICC 380 to a minimum of the design rate(s)</u> SM</p> <p>(a) 100 cfm (47.2 L/s) intermittent or 2550 cfm (11.8 L/s) continuous for kitchens, and</p> <p>(b) 50 cfm (23.6 L/s) intermittent or 205 cfm (9.4 L/s) continuous for bathrooms and/or laundry areas</p> <p><u>Exception: The prescriptive requirements of Table 902.1.3 shall be permitted in place of a measurement. When using Table 902.1.3, the airflow rating shall meet or exceed a static pressure of 0.25 in. of water column.</u></p> <p><u>Use of Table 902.1.3 is limited to one or more of the following:</u></p> <p><u>Duct system not exceeding 25 ft in length;</u></p> <p><u>Duct system with no more than three (3) elbows.</u></p> <p><u>Duct system with exterior termination fittings having a hydraulic diameter greater than or equal to the minimum duct diameter not less than the hydraulic diameter of the fan outlet.</u></p> <p>Table 902.1.3 Prescriptive Duct Sizing</p> <table border="1"> <tr> <td>Fan Airflow Rating (CFM), at minimum static</td> <td>≤ 50</td> <td>≤ 80</td> <td>≤ 100</td> <td>≤ 125</td> <td>≤ 150</td> <td>≤ 175</td> <td>≤ 200</td> <td>≤ 250</td> <td>≤ 350</td> <td>≤ 400</td> <td>≤ 450</td> <td>≤ 700</td> <td>≤ 800</td> </tr> </table>													Fan Airflow Rating (CFM), at minimum static	≤ 50	≤ 80	≤ 100	≤ 125	≤ 150	≤ 175	≤ 200	≤ 250	≤ 350	≤ 400	≤ 450	≤ 700	≤ 800
Fan Airflow Rating (CFM), at minimum static	≤ 50	≤ 80	≤ 100	≤ 125	≤ 150	≤ 175	≤ 200	≤ 250	≤ 350	≤ 400	≤ 450	≤ 700	≤ 800														

	<u>pressure of 0.25 in. of water</u>													
	<u>Duct Type</u>	<u>Minimum Duct Diameter, In. ^{a,b}</u>												
	<u>Rigid Duct</u>	<u>4^e</u>	<u>5</u>	<u>5</u>	<u>6</u>	<u>6</u>	<u>7</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>10</u>	<u>12</u>	<u>12^d</u>
	<u>Flex Duct^c</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>6</u>	<u>7</u>	<u>7</u>	<u>8</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>
	<p><u>a. For noncircular ducts, calculate the diameter as four times the cross-sectional area divided by the perimeter.</u></p> <p><u>b. NP = application of the prescriptive table is not permitted for this scenario.</u></p> <p><u>c. Use of this table for verification of flex duct systems requires flex duct to be fully extended and any flex duct elbows to have a minimum bend radius to duct diameter ratio of 1.0.</u></p> <p><u>d. For this scenario, use of elbows is not permitted.</u></p> <p><u>e. For this scenario, 4 in. (100 mm) oval duct shall be permitted, provided the minor axis of the oval is greater than or equal to 3 in. (75 mm)</u></p>													
CC Reason:	To be more flexible.													
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2													
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>APPROVE WITH COMMENT - Kevin Duell: Change case of "kitchen": 902.1.3 Where installed kkitchen range, bathroom, and . . .</p>													

A073	ID 8141	902.1 Spot ventilation	Final Formal Action: Accept as Modified
Submitter:	Aaron Gary, Tempo, Inc.		
Comment:	<p>902.1.1 Spot ventilation is in accordance with the following:</p> <p>(1) Bathrooms are vented to the outdoors. The minimum ventilation rate is 50 cfm (23.6 L/s) for intermittent operation or 20 cfm (9.4 L/s) for continuous operation in bathrooms. <i>[1 point awarded only if a window complying with IRC Section R303.3 is provided in addition to mechanical ventilation.]</i>M [1 max]</p> <p>(2) Clothes dryers (except listed and labeled condensing ductless dryers) are vented to the outdoor.M</p> <p>Kitchen exhaust units and/or range hoods are ducted to the outdoors and have a minimum ventilation rate of 100 cfm (47.2 L/s) for intermittent operation or 2550 cfm (11.8 L/s) for continuous operation. M8 points</p>		
Reason:	Changed to Mandatory to align with 2021 IMC & 2024 IMC where the kitchen exhaust ventilation is required in residential kitchens. Continuous operation rate increased to 50 CFM to align with 2024 IMC.		
CC Action:	Accept as Modified		
CC Modification:	<p>Modify Proposed change as follows:</p> <p>902.1.1 Spot ventilation is in accordance with the following:</p>		

	<p>(1) Bathrooms are vented to the outdoors. The minimum ventilation rate is 50 cfm (23.6 L/s) for intermittent operation or 20 <u>25</u> cfm (9-4 <u>11.8</u>L/s) for continuous operation in bathrooms. [1 point awarded only if a window complying with IRC Section R303.3 is provided in addition to mechanical ventilation.]M [1 max]</p> <p>(2) Clothes dryers (except listed and labeled condensing ductless dryers) are vented to the outdoor.M</p> <p>(3). Kitchen exhaust units and/or range hoods are ducted to the outdoors and have a minimum ventilation rate of 100 cfm (47.2 L/s) for intermittent operation or 2550 cfm (11.8 L/s) for continuous operation. M8 points</p> <p>3)Kitchen exhaust is in accordance with the specifications of at least one of the following as applicable:M</p> <p><u>International Residential Code</u></p> <p><u>International Mechanical Code</u></p> <p><u>ASHRAE 62.2</u></p>
CC Reason:	Revised item 3) to better align with nuance of code about when kitchen exhaust is required. Consistent with language approved for other Proposed Changes.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A074	ID 8143	902.1 Spot ventilation	Final Formal Action: Accept as Modified
Submitter:	Aaron Gary, Tempo, Inc.		
Comment:	<p>902.1.4 Exhaust fans <u>comply with</u> are ENERGY STAR as applicable. 12 max</p> <p>(1) ENERGY STAR, IECC Table R403.6.2 or equivalent, fans [Points awarded per fan.] 2M</p> <p>(2) ENERGY STAR, or equivalent, fans operating at or below 1 sone [Points awarded per fan.] 3</p>		
Reason:	Changed to Mandatory to aligns with 2021 IECC which adopted the efficacy criteria currently used by ENERGY STAR		
CC Action:	Accept as Modified		
CC Modification:	<p><i>Modify as follows</i></p> <p>902.1.4 Exhaust fans <u>comply with</u> are ENERGY STAR as applicable. 12 max</p> <p>(1) ENERGY STAR <u>or either</u> IECC R403.6.2, or C403.8.5 as applicable <u>or equivalent</u>, fans [Points awarded per fan.] 2M</p> <p>(2) ENERGY STAR, or equivalent, fans operating at or below 1 sone [Points awarded per fan.] 3</p>		

CC Reason:	ENERGY STAR is important to mention for ease of use
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A075	ID 8140	902.1 Spot Ventilation	Final Formal Action: Accept as Modified
Submitter:	Aaron Gary, Theresa Weston, Greg Coolidge, Jillian Cooke, Jason LaFleur, Task Group 3		
Comment:	<p>902.1.1 Spot ventilation is in accordance with the following:</p> <p>(1) Bathrooms are vented to the outdoors. The minimum ventilation rate is 50 cfm (23.6 L/s) for intermittent operation or 20 cfm (9.4 L/s) for continuous operation in bathrooms. [1 point awarded only if a window complying with IRC Section R303.3 is provided in addition to mechanical ventilation.] M [1 max]</p> <p>(2) Clothes dryers (except listed and labeled condensing ductless dryers) are vented to the outdoors. M</p> <p>Kitchen exhaust units and/or range hoods are ducted to the outdoors and have a minimum ventilation rate of 100 cfm (47.2 L/s) for intermittent operation or 25 cfm (11.8 L/s) for continuous operation. 8 points</p> <p><u>kitchen exhaust unit(s) that equals or exceeds 400 cfm (189 L/s) is installed, and make-up air is provided. 2 Additional (Must comply with (3))</u></p> <p><i>Delete existing 905.2</i></p>		
Reason:	Its easier for the user to have all kitchen exhaust items in one place. Enhanced kitchen exhaust no longer warrants classification as an “innovative practice.”		
CC Action:	Accept as Modified		
CC Modification:	<i>Modify 2020 NGBS as Follows:</i> <i>Delete existing 905.2 in its entirety</i>		
CC Reason:	Addressed by other approved changes.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A076	ID 8144	902.1 Spot Ventilation	Final Formal Action: Accept as Modified
Submitter:	Aaron Gary, Tempo, Inc.		
Comment:	902.1.6 Ventilation for Multifamily Common Spaces. Systems are implemented and are in accordance with the specifications of ASHRAE 62.1 <u>or ICC IMC Chapter 4</u> and an explanation of the operation and importance		

	<p>of the ventilation system is included in § 1002.1 and § 1002.2 of this Standard. <u>3M</u></p> <p>11.902.1.6 Ventilation for Multifamily Common Spaces. Systems are implemented and are in accordance with the specifications of ASHRAE 62.1 or ICC IMC Chapter 4 and an explanation of the operation and importance of the ventilation system is included in § 1002.1 and § 1002.2 of this Standard. <u>3M</u></p>
Reason:	Updated reference and changed to mandatory to align with 2021/2024 IMC and NGBS Chapter 13.
CC Action:	Accept as Modified
CC Modification:	<p><i>Modify as follows:</i></p> <p>902.1.6 Ventilation for Multifamily Common Spaces. Systems are implemented and are in accordance with the specifications of ASHRAE 62.1 or ICC IMC Chapter 4 and an explanation of the operation and importance of the ventilation system is included in § 1002.1 and § 1002.2 of this Standard. <u>3M</u></p> <p>11.902.1.6 Ventilation for Multifamily Common Spaces. Systems are implemented and are in accordance with the specifications of ASHRAE 62.1 or ICC IMC Chapter 4 and an explanation of the operation and importance of the ventilation system is included in § 1002.1 and § 1002.2 of this Standard. <u>3M</u></p>
CC Reason:	Many projects following the existing building pathway are not able to provide a ventilation system in common area.
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A077	ID 8148	902.2 Building ventilation systems	Final Formal Action: Accept as Modified
Submitter:	Aaron Gary, Tempo, Inc.		
Comment:	<p>902.2.3 <u>MERV filters 6</u> are installed on central forced air systems and are accessible. Designer or installer is to verify that the HVAC equipment is able to accommodate the greater pressure drop of <u>MERV 6</u> filters. <u>M</u></p> <p>902.2.34 <u>MERV filters 8 to 13</u> are installed on central forced air systems and are accessible. Designer or installer is to verify that the HVAC equipment is able to accommodate the greater pressure drop of <u>MERV 8 to 13</u> filters. 2 points</p> <p>902.2.45 <u>MERV filters 14 or greater</u> are installed on central forced air systems and are accessible. Designer or installer is to verify that the HVAC equipment is able to accommodate the greater pressure drop of the filter used. 3 points</p>		
Reason:	Align with current version of ASHRAE 62		
CC Action:	Accept as Modified		
CC Modification:	<i>Modify as follows:</i>		

	<p><u>902.2.3</u> MERV filters 6-8 are installed on central forced air systems and are accessible. Designer or installer is to verify that the HVAC equipment is able to accommodate the greater pressure drop of MERV 6-8 filters. M</p> <p>902.2.34 MERV filters 8 to 13 are installed on central forced air systems and are accessible. Designer or installer is to verify that the HVAC equipment is able to accommodate the greater pressure drop of MERV 8 to 13 filters. 2 points</p> <p><u>902.2.45</u> MERV filters 14 <u>16</u> or greater are installed on central forced air systems and are accessible. Designer or installer is to verify that the HVAC equipment is able to accommodate the greater pressure drop of the filter used.3 points</p>
CC Reason:	MERV 8 are commonly available in the market. Points should be given for more incremental improvement between the tiers.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A078	ID 8145	902.2 Building ventilation systems	Final Formal Action: Accept
Submitter:	Aaron Gary, Theresa Weston, Greg Coolidge, Jillian Cooke, Jason LaFleur, Task Group 3		
Comment:	<p><u>902.2.2</u> Ventilation airflow is tested to achieve the design fan airflow in accordance with ANSI/RESNET/ICC 380 and § 902.2.1. 4 points</p> <p><u>902.2.3</u> MERV filters 8 to 13 are installed on central forced air systems and are accessible. Designer or installer is to verify that the HVAC equipment is able to accommodate the greater pressure drop of MERV 8 to 13 filters. 2 points</p> <p><u>902.2.4</u> MERV filters 14 or greater are installed on central forced air systems and are accessible. Designer or installer is to verify that the HVAC equipment is able to accommodate the greater pressure drop of the filter used. 3 points</p> <p><u>902.2.5</u> Enhanced air filtration. 2 points</p> <p>Meet all of the following:</p> <p><u>(1) Design for and install a secondary filter rack space for activated carbon filters.</u></p> <p><u>(2) Provide the manufacturer’s recommended filter maintenance schedule to the homeowner or building manager.</u></p> <p><i>Delete existing 905.3</i></p>		
Reason:	It’s easier for the user to have all filtration practices in one area. Enhanced filtration no longer warrants classification as an “innovative practice.”		
CC Action:	Accept		
CC Modification:			
CC Reason:			

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A079	ID 8146	902.2 Building ventilation systems	Final Formal Action: Accept as Modified
Submitter:	Aaron Gary, Tempo, Inc.		
Comment:	<p>902.2.1 One of the following whole building ventilation systems is implemented <u>in the dwelling units</u> and is in accordance with the specifications of ASHRAE 62.2-2010⁹ Section 4, <u>2021 International Mechanical Code Sections 403.3 or 403.3.2 (regardless of building height) or 2021 International Residential Code Section 1505, as applicable</u>. An explanation of the operation and importance of the ventilation system is included in either 1001.1 or 1002.2..... M*</p> <p>{*Mandatory where the maximum air infiltration rate is less than 5.0 ACH50}</p> <p>(1) Exhaust or supply fan(s) air ventilation system ready for continuous operations and with appropriately labeled controls equipped with outdoor air ducts and intake(s) for ventilation air..... 1</p> <p>(2) Exhaust air ventilation system equipped with outdoor air ducts and intake(s) for ventilation air and with automatic ventilation controls to limit ventilation air during periods of extreme temperature or moisture in the outdoor air..... 3</p> <p>(3) Supply air ventilation system..... 3</p> <p>(4) Supply air ventilation system equipped with automatic ventilation controls to limit ventilation air during periods of extreme temperature or moisture in the outdoor air..... 5</p> <p>(5) Balanced air ventilation system with exhaust and supply fan(s) with supply intakes located in accordance with the manufacturer's guidelines so as to not introduce polluted air back into the building..... 6</p> <p>(6) Heat-recovery ventilator..... 7</p> <p>(7) Balanced air ventilation system with exhaust and supply fan(s) with automatic ventilation controls to limit ventilation air during periods of extreme temperature or moisture in the air, and with intakes located in accordance with the manufacturer's guidelines so as to not introduce polluted air back into the building..... 8</p> <p>(8) Energy-recovery ventilator..... 8</p> <p>(9) Ventilation air is preconditioned by a system not specified above..... 10</p> <p>11.902.2.1 One of the following whole dwelling ventilation systems is implemented <u>in the dwelling units</u> and is in accordance with the specifications of ASHRAE 62.2-2010⁹ Section 4, <u>2021 International Mechanical Code</u></p>		

Sections 403.3 or 403.3.2 (regardless of height) or 2021 International Residential Code Section 1505, as applicable. An explanation of the operation and importance of the ventilation system is included in either 1001.1 or 1002.2..... M*

{*Mandatory where the maximum air infiltration rate is less than 5.0 ACH50}

(1) Exhaust or supply fan(s) air ventilation system ready for continuous operations and with appropriately labeled controls equipped with outdoor air ducts and intake(s) for ventilation air..... 1

(2) Exhaust air ventilation system equipped with outdoor air ducts and intake(s) for ventilation air and with automatic ventilation controls to limit ventilation air during periods of extreme temperature or moisture in the outdoor air..... 3

(3) Supply air ventilation system..... 3

(4) Supply air ventilation system equipped with automatic ventilation controls to limit ventilation air during periods of extreme temperature or moisture in the outdoor air 5

(5) Balanced air ventilation system with exhaust and supply fan(s) with supply intakes located in accordance with the manufacturer’s guidelines so as to not introduce polluted air back into the building..... 6

(6) Heat-recovery ventilator..... 7

(7) Balanced air ventilation system with exhaust and supply fan(s) with automatic ventilation controls to limit ventilation air during periods of extreme temperature or moisture in the outdoor air and with intakes located in accordance with the manufacturer's guidelines so as to not introduce polluted air back into the building..... 8

(8) Energy-recovery ventilator.....8

(9) Ventilation air is preconditioned by a system not specified above.....10

1205.8 Whole dwelling ventilation. One of the following whole dwelling building ventilation systems is implemented and is in accordance with the specifications of ASHRAE 62.2-2010 Section 4 or 2021 International Residential Code Section 1505. An explanation of the operation and importance of the ventilation system is included in either 1001.1 or 1002.2.

(1) Exhaust air ventilation system equipped with outdoor air ducts and intake(s) for ventilation air.

(2) Exhaust air ventilation system equipped with outdoor air ducts and intake(s) for ventilation air and with automatic ventilation controls to limit ventilation air during periods of extreme temperature or moisture in the air extreme humidity and/or during times of peak utility loads.

(3) Supply air ventilation system.

- (4) Supply air ventilation system equipped with automatic ventilation controls to limit ventilation air during periods of extreme temperature or moisture in the air, ~~extreme humidity and/or during times of peak utility loads.~~
- (5) Balanced air ventilation system with exhaust and supply fan(s) with supply intakes located in accordance with the manufacturer's guidelines so as to not introduce polluted air back into the building
- (6) Heat-recovery ventilator.
- (7) Balanced air ventilation system with exhaust and supply fan(s) with automatic ventilation controls to limit ventilation air during periods of extreme temperature or moisture in the air, ~~extreme humidity and/or during times of peak utility loads.~~, and with intakes located in accordance with the manufacturer's guidelines so as to not introduce polluted air back into the building.
- (8) Energy-recovery ventilator.
- (9) Ventilation air is preconditioned by a system not specified above.

SECTION 14:

REFERENCED DOCUMENTS

ICC – International Code Council | www.iccsafe.org

IMC

~~2018~~2021

International Mechanical Code

705.6.1(1),

902.2.1

11.705.6.1(1),

11.902.2.1

13.105.10,

13.107.7,

13.107.8.1

IRC

~~2018~~2021

International Residential Code

202,

602.1.1.1,

602.1.3.1,

602.1.4.2(1),

602.1.4.2(2),

602.1.8,

602.1.13,

	<p>705.6.1(1), 902.1.1(1),</p> <p><u>902.2.1,</u> 902.3, 1001.1(12)(b),</p> <p>11.602.1.1.1, 11.602.1.3.1,</p> <p>11.602.1.4.2(1), 11.602.1.4.2(2), 11.602.1.8, 11.602.1.13, 11.705.6.1, 11.902.1.1(1), <u>11.902.2.1,</u></p> <p>11.902.3, 11.1001.1(12)(b), 1202.1, 1202.4,</p> <p><u>1205.8</u></p> <p>ASHRAE – American Society of Heating, Refrigeration, Air-conditioning Engineers www.ashrae.org</p> <p>DOCUMENT</p> <p>DATE</p> <p>TITLE</p> <p>SECTION</p> <p><u>ASHRAE 62.2</u></p> <p><u>2019</u></p> <p><u><i>Ventilation and Acceptable Indoor Air Quality in Residential Buildings</i></u></p> <p><u>902.2.1,</u></p> <p><u>11.902.2.1,</u></p> <p><u>1205.8</u></p>
Reason:	<p>Aligns the dwelling ventilation section which appears 3 times in the NGBS Standard with the Chapter 12 version used as the basis of the alignment (felt that the NGBS 2020 Chapter 12 version did the best job of aligning with current developments in design practice, code requirements, and product developments). Additionally, specified this practice applies to the dwelling units, removed peak load language (as that seemed</p>

	more appropriate for Chapter 7), changed extreme humidity to moisture in the air (as some products control of dew point), and updated references to ASHRAE 62.2-2019 and 2021 IMC.
CC Action:	Accept as Modified
CC Modification:	<p><i>Approve Proposed change with the following modifications:</i></p> <p>902.2.1 One of the following whole building ventilation systems is implemented in the dwelling units and is in accordance with the specifications of ASHRAE 62.2-2010⁹ Section 4, 2021 International Mechanical Code Sections 403.3 or 403.3.2 (regardless of building height) or 2021 International Residential Code Section 1505, as applicable. An explanation of the operation and importance of the ventilation system is included in either 1001.1 or 1002.2..... M*</p> <p><u>902.2.1 One of the following whole building ventilation systems is implemented in the dwelling units and is in accordance with the specifications of at least one of the following as applicable:</u></p> <p><u>2021 International Residential Code</u></p> <p><u>2021 International Mechanical Code</u></p> <p><u>ASHRAE 62.2 2019</u></p> <p><u>An explanation of the operation and importance of the ventilation system is included in either 1001.1 or 1002.2. M*</u></p> <p>11.902.2.1 One of the following whole dwelling ventilation systems is implemented in the dwelling units and is in accordance with the specifications of ASHRAE 62.2-2010⁹ Section 4, 2021 International Mechanical Code Sections 403.3 or 403.3.2 (regardless of height) or 2021 International Residential Code Section 1505, as applicable. An explanation of the operation and importance of the ventilation system is included in either 1001.1 or 1002.2..... M*</p> <p><u>11.902.2.1 One of the following whole building ventilation systems is implemented in the dwelling units and is in accordance with the specifications of at least one of the following as applicable:</u></p> <p><u>2021 International Residential Code</u></p> <p><u>2021 International Mechanical Code</u></p> <p><u>ASHRAE 62.2 2019</u></p> <p><u>An explanation of the operation and importance of the ventilation system is included in either 11.1001.1 or 11.1002.2. M*</u></p> <p>1205.8 Whole dwelling ventilation. One of the following whole dwelling building ventilation systems is implemented and is in accordance with the specifications of ASHRAE 62.2-2010⁹ Section 4 or 2021 International Residential Code Section 1505. An explanation of the operation and importance of the ventilation system is included in either 1001.1 or 1002.2.</p> <p><u>1205.8 One of the following whole building ventilation systems is implemented in the dwelling units and is in accordance with the specifications of at least one of the following as applicable:</u></p> <p><u>2021 International Residential Code</u></p> <p><u>ASHRAE 62.2 2019</u></p>

	An explanation of the operation and importance of the ventilation system is included in either <u>1206.1 ...M</u> Delete modifications shown in Proposed Change to Section 14.
CC Reason:	Consistent with action on P058. References corrected by other Proposed Change.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A080	ID 8147	902.2 Building ventilation systems	Final Formal Action: Accept as Modified
Submitter:	Aaron Gary, Tempo, Inc.		
Comment:	<p>902.2.2 Ventilation airflow is tested <u>and verified to provide the minimum ventilation flow rates achieve the design fan airflow</u> in accordance with ANSI/RESNET/ICC 380 and Section 902.2.1.....<u>M 4</u></p> <p>11.902.2.2 Ventilation airflow is tested <u>and verified to provide the minimum ventilation flow rates achieve the design fan airflow</u> in in accordance with ANSI/RESNET/ICC 380 and Section 11.902.2.1.....<u>M 4</u></p> <p>1209 Whole Dwelling Ventilation Testing. Ventilation airflow is tested <u>and verified to provide the minimum ventilation flow rates in accordance with ANSI/RESNET/ICC 380 and Section 1208.....M</u></p>		
Reason:	Aligns with 2021 & 2024 IECC where the testing of ventilation airflow is required.		
CC Action:	Accept as Modified		
CC Modification:	<p>902.2.2 For single-family houses and multifamily structures of three stories or fewer above grade Ventilation airflow is tested <u>and verified to provide the minimum ventilation flow rates achieve the design fan airflow</u> in accordance with ANSI/RESNET/ICC 380 and Section 902.2.1.....<u>M 4</u></p> <p>11.902.2.2 where implemented Ventilation airflow is tested <u>and verified to provide the minimum ventilation flow rates achieve the design fan airflow</u> in in accordance with ANSI/RESNET/ICC 380 and Section 11.902.2.1.....<u>4</u></p> <p>1209 Whole Dwelling Ventilation Testing. Ventilation airflow is tested <u>and verified to provide the minimum ventilation flow rates in accordance with ANSI/RESNET/ICC 380 and Section 1208.....M</u></p>		
CC Reason:	Better align with the IECC when testing is required.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A081	ID 8149	902.3.1.1 Soil-gas barriers and base course	Final Formal Action: Accept as Modified
Submitter:	Tom Marks and Ryan Goodwin, Stego Industries, LLC		
Comment:	<p><i>(Modify as shown below)</i></p> <p>902.3.1.1 Soil-gas barriers and base course. A base course in accordance with IRC Section 506.2.2 <u>Appendix F Section 103.2</u> shall be installed below slabs and foundations. There shall be a continuous gas-permeable base course under each soil-gas retarder that is separated by foundation walls or footings. Between slabs and the base course, <u>install a soil-gas retarder with minimum performance outlined in Section 602.1.1</u> damp proofing or water proofing shall be installed in accordance with IRC Section 406. The soil-gas retarder shall be a continuous 6-mil polyethylene sheeting or an approved equivalent.</p>		
Reason:	<p>If the intent is a base course approved for radon mitigation (such as a gas-permeable layer) 506.2.2 does not seem like the appropriate reference. This Section of the IRC applies to the base course for regular slabs below grade, but not specifically noted as a gas permeable layer for soil-gas mitigation. Section 103.2 of Appendix F seems more appropriate for radon mitigation.</p> <p>The soil-gas retarder will inevitably be the same material used as the below-slab water vapor retarder. Currently the verbiage seems to be <i>requiring</i> 6-mil polyethylene sheeting (which may not/shouldn't be used under the slab for water vapor protection), but also references damp proofing. For simplicity and consistency, it seems reasonable to just reference Section 602.1.1 of the NGBS as the water vapor retarder will also be acting as the soil-gas retarder in the radon control system.</p> <p>Furthermore, our understanding of Section 406 applies to damp proofing and waterproofing for below grade foundation walls, not beneath concrete floor slabs. This reference seems like it can be removed.</p>		
CC Action:	Accept as Modified		
CC Modification:	<p>Modify as follows:</p> <p>902.3.1.1 Soil-gas barriers and base course. A base course in accordance with IRC Section 506.2.2 <u>Appendix A F Section 103.2</u> shall be installed below slabs and foundations. There shall be a continuous gas-permeable base course under each soil-gas retarder that is separated by foundation walls or footings. Between slabs and the base course, <u>install a soil-gas retarder compliant with minimum performance outlined in Section 602.1.1.1 and following the guidance in IRC Appendix AF Section 103</u> damp proofing or water proofing shall be installed in accordance with IRC Section 406. The soil-gas retarder shall be a continuous 6-mil polyethylene sheeting or an approved equivalent.</p>		
CC Reason:	Adding additional guidance requirement.		
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A082	ID 8150	902.3.2 Radon testing	Final Formal Action: Accept as Modified
Submitter:	Thomas Bowles, US EPA		
Comment:	<p>Proposed Changes in red to section 902.3.2:</p> <p>902.3.2 Radon testing. Radon testing is mandatory. for Zone 1.</p>		

~~Exceptions: 1) Testing is not mandatory where the authority having jurisdiction has defined the radon zone as Zone 2 or 3; and 2) Testing is not mandatory where the occupied space is located above an unenclosed open space or concrete podiums.~~

(1) Single-Family Testing specifications. Single-Family Testing is performed as specified in (a) through (j). Testing of a representative sample shall be permitted for multifamily buildings only.....

- (a) Testing is performed after the residence passes its airtightness test.
- (b) Testing is performed after the radon control system installation is complete. If the system has an active fan, the residence shall be tested with the fan operating.
- (c) Testing is performed at the lowest level within a dwelling unit which will be occupied, even if the space is not finished.
- (d) Testing is not performed in a closet, hallway, stairway, laundry room, furnace room, kitchen or bathroom.
- (e) Testing is performed with a commercially available test kit or with a continuous radon monitor that can be calibrated. Testing shall be in accordance with the testing device manufacturer's instructions.
- (f) Testing shall be performed by the builder, a registered design professional, or an approved third party.
- (g) Testing shall extend at least 48 hours or to the minimum specified by the manufacturer, whichever is longer.
- (h) Written radon test results shall be provided by the test lab or testing party. Written test results shall be included with construction documents.
- (i) An additional pre-paid test kit shall be provided for the homeowner to use when they choose. The test kit shall include mailing or emailing the results from the testing lab to the homeowner.
- (j) Where the radon test result is 4 pCi/L or greater, the fan for the radon vent pipe shall be installed.

(2) Multifamily Testing specifications. Multifamily Building Testing is performance as specified in (a) through (j).....

- (a) For each ground-contact dwelling or living unit, a test is performed in the lowest level that serves or could serve as a living area, sleeping quarters, office, playroom or otherwise be occupied for residential use at some time in the future
- (b) For non-residential ground-contact locations, a test is performed in all ground-contact rooms, offices, classrooms and other general use areas that are occupied or intended to be occupied.
- (c) On each upper floor, testing is performed in at least one and not less than 10% of all dwellings and nonresidential rooms that are occupied or intended to be occupied. These measurements shall be in addition to tests performed in ground-contact locations and rooms or dwellings that adjoin immediately above untested ground-contact locations.
- (d) Testing is not performed in hallways, closets and bathroom or shower areas unless they are open to other rooms that are occupied for other purposes.

	<p>(e) Testing is performed with a commercially available test kit or with a continuous radon monitor that can be calibrated. Testing shall be in accordance with the testing device manufacturer’s instructions.</p> <p>(f) Testing shall be performed by the builder, a registered design professional, or an approved third party.</p> <p>(g) Testing shall extend at least 48 hours or to the minimum specified by the manufacturer, whichever is longer.</p> <p>(h) Written radon test results shall be provided by the test lab or testing party. Written test results shall be included with construction documents.</p> <p>(i) An additional pre-paid test kit shall be provided for the homeowner to use when they choose. The test kit shall include mailing or emailing the results from the testing lab to the homeowner.</p> <p>(j) Where the radon test result is 4 pCi/L or greater, the fan for the radon vent pipe shall be installed.</p>
<p>Reason:</p>	<p>Radon Testing should be required in ALL ZONES not just Z1. MF testing for radon should include sampling protocols. Also included is testing protocols for non-residential common areas.</p> <p>Radon has been found in all zones regardless of geographic location. The only way to know if there is elevated radon is to test. People tend to see a testing requirement in Z1 as a false sense of security that Zones 2 and 3 are safe. Elevated radon has been found in all zones and we at EPA never intended for the map to be used to determine whether there is a radon problem or not. The only way to know is to test. The map is intended to help governments and other organizations with target risk reduction activities and resources. The Map of Radon Zones should not be used to determine if individual dwellings need to be tested. Radon causes lung cancer and does not discriminate by zone.</p> <p>MF Buildings also need separate testing protocols from SF residences and some guidance around common areas which is addressed in the changes.</p>
<p>CC Action:</p>	<p>Accept as Modified</p>
<p>CC Modification:</p>	<p><u>Modify as follows:</u></p> <p>902.3.2 Radon testing. Radon testing is mandatory. for Zone 1 <u>and 2</u></p> <p>Exceptions: 1) Testing is not mandatory where the authority having jurisdiction has defined the radon zone as Zone 2-or 3; and 2) Testing is not mandatory where the occupied space is located above an unenclosed open space or concrete podiums.</p> <p><u>(1) Single-Family Testing specifications. Single-Family Testing is performed as specified in (a) through (j). Testing of a representative sample shall be permitted for multifamily buildings only.....</u></p> <p>(a) Testing is performed after the residence passes its airtightness test.</p> <p>(b) Testing is performed after the radon control system installation is complete. If the system has an active fan, the residence shall be tested with the fan operating.</p> <p>(c) Testing is performed at the lowest level within a dwelling unit which will be occupied, even if the space is not finished.</p>

- (d) Testing is not performed in a closet, hallway, stairway, laundry room, furnace room, kitchen or bathroom.
- (e) Testing is performed with a commercially available test kit or with a continuous radon monitor that can be calibrated. Testing shall be in accordance with the testing device manufacturer's instructions.
- (f) Testing shall be performed by the builder, a registered design professional, or an approved third party.
- (g) Testing shall extend at least 48 hours or to the minimum specified by the manufacturer, whichever is longer.
- (h) Written radon test results shall be provided by the test lab or testing party. Written test results shall be included with construction documents.
- (i) An additional pre-paid test kit shall be provided for the homeowner to use when they choose. The test kit shall include mailing or emailing the results from the testing lab to the homeowner.
- (j) Where the radon test result is 4 pCi/L or greater, the fan for the radon vent pipe shall be installed.

(2) Multifamily Testing specifications. Multifamily Building Testing is performance as specified in (a) through (j).....

- (a) For ground-contact dwelling or sleeping units a test is performed in minimum of 50% of all ground-contact dwelling or living sleeping units on the lowest level that serves or could serve as a living area, sleeping quarters, office, playroom or otherwise be occupied for residential use at some time in the future. Samples shall be representative across the footprint of all ground-contact dwelling or living sleeping units of the building.
- (b) For non-residential ground-contact locations, a test is performed for a minimum of 25% of all ground-contact rooms, offices, classrooms and other general use areas that are occupied or intended to be occupied. Samples shall be representative across the footprint of the non-residential ground contact locations of building.
- (c) On each upper floor, testing is performed in at least one and not less than 10% of all dwellings and nonresidential rooms that are occupied or intended to be occupied. These measurements shall be in addition to tests performed in ground-contact locations and rooms or dwellings that adjoin immediately above untested ground-contact locations.
- (d) Testing is not performed in hallways, closets and bathroom or shower areas unless they are open to other rooms that are occupied for other purposes.
- (e) Testing is performed with a commercially available test kit or with a continuous radon monitor that can be calibrated. Testing shall be in accordance with the testing device manufacturer's instructions.
- (f) Testing shall be performed by the builder, a registered design professional, or an approved third party.
- (g) Testing shall extend at least 48 hours or to the minimum specified by the manufacturer, whichever is longer.
- (h) Written radon test results shall be provided by the test lab or testing party. Written test results shall be included with construction documents.

	<p>(i) An additional pre-paid test kit shall be provided for the homeowner to use when they choose. The test kit shall include mailing or emailing the results from the testing lab to the homeowner.</p> <p>(j) Where the radon test result is 4 pCi/L or greater, the fan for the radon vent pipe shall be installed.</p>
CC Reason:	Revised sampling rates based on research suggesting testing 50% of ground contact units was statistically appropriate.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A083	ID 8151	905.4 Sound barrier	Final Formal Action: Disapprove
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	Delete section entirely.		
Reason:	Acoustic performance within buildings isn't a sustainability measure. Including non-sustainability measures in NGBS reduces the focus on sustainability within the NGBS program. Non-sustainability points allow projects to achieve certification without delivering on sustainability. Non-sustainability measures divert time/resources for users of the NGBS program from the core sustainability goal.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Human health is a component of sustainability. Acoustics play an important role in human wellbeing, affecting cardiac health and mental capacity. While this practice is not often selected, continuing to include it within the Standard may raise awareness of the additional elements that impact a resident's experience with a space.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

Section 10 Operation, Maintenance, and Building Owner Education

P064	ID 8093	1001.1 Homeowner's manual	Final Formal Action: Accept as Modified
Submitter:	Marla Esser Cloos, Self		
Comment:	<p><u>A list of no- and low-emission and sustainable materials, products, and finishes used in the building interiors.</u></p> <p><u>A list of site, building, and/or interior features that contribute to the health and well-being of the building workers and occupants.</u></p> <p><u>A list of practices to maintain the health and wellness attributes of the building.</u></p>		
Reason:	Building owners and occupants gain understanding and appreciation of materials, products and finishes that contribute to occupant and building workers' health and well-being. Additional information about the importance of using no- and low-emission and sustainable materials, products, and finishes to support residents' health and wellness may be found in NGBS Green+ Badges Workbook, NGBS+ Wellness section, starting on p. 14.		
CC Action:	Accept as Modified		
CC Modification:	<p>A list of no- and low-emission and sustainable materials, products, and finishes used in the building interiors.</p> <p><u>A list of site, building, and/or interior features that contribute to the health and well-being of the building workers and occupants.</u></p> <p><u>A list of practices to maintain the health and wellness attributes of the building.</u></p>		
CC Reason:	Health and wellness features of the building should be identified and available as part of the use and enjoyment of the building. Information will be preserved and available in the reference for future owners.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 25</p> <p>Disapprove committee action: 1</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>DISAPPROVE COMMITTEE ACTION - Craig Charles Conner: The terms wellness and well-being are vague. I don't know what they mean. What is ""wellness"" and ""well being"". What is not ""wellness"" or ""well being"". Those terms should not be used in the NGBS. What is a ""sustainable material""? Can we make a list of materials that are sustainable? Can we list materials that are not ""sustainable""?"</p> <p>Task Group 1 Response: Non-Persuasive</p> <p>Reason: The I-codes contain sections that reference health safety and welfare of occupants. The concept of "wellness" is generally understood in the industry. The concept of sustainable materials exists in other areas of the NGBS. Task Group believes this item should be included in the Public Comment draft to be open to future scrutiny and review during public comment period.</p>		

P065	ID 8094	1001.2 Training of initial homeowners	Final Formal Action: Disapprove
Submitter:	Marla Esser Cloos, Self		
Comment:	<p>Training of initial homeowners. Initial homeowners are familiarized with the role of occupants in achieving <u>green health and environmental</u> goals. Training is provided to the responsible party(ies) <u>regarding by a team member(s) trained or certified in health and wellness and sustainability in buildings.</u> Training will consist of <u>equipment operation and maintenance, control systems, and occupant actions and how they that will improve</u></p>		

	the <u>health and</u> environmental performance of the building. These include: (1) HVAC filters....(8) Whole-dwelling mechanical ventilation systems
Reason:	Building owners and occupants gain understanding and appreciation of features that affect health and environmental performance of the building, and why proper maintenance, operation and occupant actions are so critical to achieving health and wellness in the building. Additional information about health and wellness in homes and buildings may be found in NGBS Green+ Badges Workbook, NGBS+ Wellness section, starting on p. 14.
CC Action:	Disapprove
CC Modification:	
CC Reason:	IN favor of action on P070.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P066	ID 8095	1002.5 Multifamily occupant manual	Final Formal Action: Accept as Modified
Submitter:	Marla Esser Cloos, Self		
Comment:	<u>A list of no- or low-emission and sustainable materials, products and finishes used in the building interiors.</u> <u>A list of site, building, and/or interior features that contribute to the health and well-being of the occupants.</u> <u>A list of practices to maintain the health and wellness attributes of the building.</u>		
Reason:	Building owners and occupants gain understanding and appreciation of materials, products and finishes that contribute to occupant and building workers' health and well-being. Additional information about the importance of using no- and low-emission and sustainable finishes and materials to support residents' health and wellness may be found in NGBS Green+ Badges Workbook, NGBS+ Wellness section, starting on p. 14		
CC Action:	Accept as Modified		
CC Modification:	<i>Note: each item worth points, not included with mandatory</i> <u>1002.5 Multifamily occupant manual</u> <u>A list of no- or low-emission and sustainable materials, products and finishes used in the building interiors.</u> <u>A list of site, building, and/or interior features that contribute to the health and well-being of the occupants.</u> <u>A list of practices to maintain the health and wellness attributes of the building.</u> <u>1002.3 Maintenance manual</u> <u>A list of site, building, and/or interior features that contribute to the health and well-being of the building workers and occupants.</u> <u>A list of practices to maintain the health and wellness attributes of the building.</u>		

CC Reason:	Health and wellness features of the building should be identified and available as part of the use and enjoyment of the building. Information will be preserved and available for tenants (under 1002.3 and owners and building workers).
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 1 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>DISAPPROVE COMMITTEE ACTION - Craig Charles Conner: The terms wellness and well-being are vague. I don't know what they mean. What is "wellness" and "well being". What is not "wellness" or "well being". Those terms should not be used in the NGBS.</p> <p>Task Group 1 Response: Non-Persuasive</p> <p>Reason: The I-codes contain sections that reference health safety and welfare of occupants. The concept of "wellness" is generally understood in the industry. The concept of sustainable materials exists in other areas of the NGBS. Task Group believes this item should be included in the Public Comment draft to be open to future scrutiny and review during public comment period.</p>

P067	ID 8096	1002.6 Training of multifamily occupants	Final Formal Action: Disapprove
Submitter:	Marla Esser Cloos, Self		
Comment:	<p>Training of multifamily occupants. Prepare a training outline, video, or website that familiarizes occupants with their role in maintaining the green health and environmental goals of the project. <u>A team member(s) trained or certified in health and wellness and sustainability in buildings will provide input about how proper equipment operation and care of components improve the health and environmental performance of the project.</u> Include all equipment that the occupant(s) is expected to operate, including, but not limited to: (1) Lighting controls ... (7) Water heater setting and hot water use.</p>		
Reason:	Building owners and occupants gain understanding and appreciation of features that affect health and environmental performance of the building, and why proper maintenance, operation and occupant actions are so critical to achieving health and wellness and sustainability in the building. Additional information about health and wellness in homes and buildings may be found in NGBS Green+ Badges Workbook, NGBS+ Wellness section, starting on p. 14.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	In favor of action on P070.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P068	ID 8005	1004.1 Verification system	Final Formal Action: Accept as Modified
Submitter:	Paul Gay, Self		
Comment:	1004.1 Verification system. A verification system plan is provided in the building owner's manual (§ 1001 or § 1002). The verification system provides methods for demonstrating continued energy and water savings that are determined from the building's initial year of occupancy <u>year of finalized building upgrade</u> of water and energy consumption as compared to annualized consumption at least every four years.		
Reason:	Add this section to Chapter 11		
CC Action:	Accept as Modified		
CC Modification:	<p>1004.1 Verification system. A verification system plan is provided in the building owner's manual (§ 1001 or § 1002).</p> <p>The verification system provides methods for demonstrating continued <u>measuring</u> energy and <u>or</u> water savings <u>consumption starting after the building reaches 80% or more occupancy</u>, that are determined from the building's initial year of occupancy of water and energy consumption as compared to annualized consumption at least every four years.</p> <p><u>(1) Verification plan is developed to monitor post-occupancy energy and/or water use and is provided in the building owner's manual.</u></p> <p><u>Plan to monitor energy consumption [1 point]</u></p> <p><u>Plan to monitor water consumption [1 point]</u></p> <p><u>Plan to report energy and/or water consumption to a national benchmarking system [1 point]</u></p> <p><u>(2) Verification system is installed in the building to monitor post-occupancy energy and water use.</u></p> <p><u>System is installed to monitor energy consumption [2 points]</u></p> <p><u>System is installed monitor water consumption [2 points]</u></p> <p><u>System is installed to report energy and/or water consumption to a national benchmarking system [2 points]</u></p> <p><u>(3) Verification system that is compliant with national/international ESG benchmarking system is installed in the building to monitor post-occupancy energy and water use.</u></p> <p><u>System is installed to monitor energy consumption [3 points]</u></p> <p><u>System is installed monitor water consumption [3 points]</u></p> <p><u>System is installed to report energy and/or water consumption to a national benchmarking system [3 points]</u></p>		
CC Reason:	ESG is increasingly important to MF developments and developer financing and this modification clarifies a process to encourage monitoring of systems installed.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0		

	Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P069	ID 8104	1005 INNOVATIVE PRACTICES	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	<p>100X Tenant Energy and Water Consumption Data Release Form</p> <p><i>Points only available for buildings with separately metered utilities.</i></p> <p>Require tenants to sign utility consumption data release forms:</p> <p>(1) For energy consumption...2 points</p> <p>(2) For water consumption...2 points</p> <p><i>Note: Include in the lease language a utility release as a default. Include an opt-out field for residents who do not wish to sign the release.</i></p>		
Reason:	Utility benchmarking provides valuable insight into a building's operation. Tenant data release forms can ensure that property owners are able to secure useful data for ongoing utility benchmarking.		
CC Action:	Accept as Modified		
CC Modification:	<p>100X Tenant Energy and Water Consumption Data Release Form</p> <p><i>Points only available for buildings with separately metered utilities.</i></p> <p>Require tenants to sign utility consumption data release forms: <u>Develop and provide an operational plan for residents to allow energy and water consumption data release:</u></p> <p>(1) For energy consumption...2 points</p> <p>(2) For water consumption...2 points</p> <p><i>Note: Include in the lease language a utility release as a default. Include an opt-out field for residents who do not wish to sign the release.</i></p>		
CC Reason:	The modifications recognize the difficulty of determining eligibility/when points should be awarded for this practice. Was not clear if note was mandatory. Clarify that information can be received from all energy suppliers.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P070	ID 8097	1005 INNOVATIVE PRACTICES	Final Formal Action: Accept as Modified
Submitter:	Marla Esser Cloos, Self		
Comment:	<p>Health and Wellness Professional. At least one member of the design and build team trained or certified in health and wellness will conduct training to at least one of the following groups:</p> <ol style="list-style-type: none"> <u>1. other design and build team members with regards to resource, product, and material selections, practices and uses in the project.</u> <u>2. Building operators and maintenance staff</u> <u>3. Building occupants or homeowners</u> 		
Reason:	Design and build team members, as well as building owners, maintenance staff, and occupants, gain understanding and appreciation of features which affect health and environmental performance of the building and why proper maintenance, operation, and occupant actions are so critical to achieving health and wellness in the building. By making the connection between the health and wellness benefits and attributes of the site, building, and/or interiors, more stakeholders in the project understand and can perform their role(s) in providing a place(s) to live where people - and the environment - can thrive. Additional information about health and wellness in homes and buildings may be found in NGBS Green+ Badges Workbook, NGBS+ Wellness section, starting on p. 14.		
CC Action:	Accept as Modified		
CC Modification:	<p>Health and Wellness Professional. At least one member of the design and build project team trained or certified in is a qualified professional in health and wellness in residential design and construction and will conduct training to at least one of the following groups (one point per item):</p> <ol style="list-style-type: none"> 1. Other design and build project team members with regards to resource, product, and material selections, practices and uses in the project. 2. Building operators operations and maintenance staff 3. Building occupants or homeowners 		
CC Reason:	Modifications meant to better incorporate health and wellness into the Standard and to better define a health and wellness professional and the training that can be provided to stakeholders.		
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 1 Abstain: 1 Non-voting: 2</p>		
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>DISAPPROVE COMMITTEE ACTION - Craig Charles Conner: The terms wellness and well-being are vague. I don't know what they mean. What is "wellness" and "well being". What is not "wellness" or "well being". Those terms should not be used in the NGBS.</p> <p>Task Group 1 Response: Non-Persuasive</p> <p>Reason: The I-codes contain sections that reference health safety and welfare of occupants. The concept of "wellness" is generally understood in the industry. The concept of sustainable materials exists in other areas of the NGBS. Task Group believes this item should be included in the Public Comment draft to be open to future scrutiny and review during public comment period.</p>		

P071	ID 8044	1005 INNOVATIVE PRACTICES	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	1005.2 Indoor Air Quality Display and Communication. Live data from indoor air quality monitoring is made available to occupants. Live data is either visually displayed in an area of the building that is accessible by residents or accessible via website or a mobile application. 2 points		
Reason:	Indoor air quality data can offer building owners and residents information that can inform adjustments to building operations and resident behavior to reduce health risks.		
CC Action:	Accept as Modified		
CC Modification:	1005.2 Indoor Air Quality Display and Communication. Live data from indoor air quality monitoring <u>in accordance with section 905.1 or 905.2.1</u> is made available to occupants. Live data is either visually displayed in an area of the building that is accessible by residents or accessible via website or a mobile application. 2 points		
CC Reason:	Providing real time information to occupants will be valuable in helping them understand the indoor air quality of their living environment, and to better align with the proposal from TG 3.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

Additional TG Proposed Changes

A084	ID 8123	1002.3 Maintenance manual	Final Formal Action: Disapprove
Submitter:	Abhishek Lal, Meridian Consulting, LLC		
Comment:	Delete part 11 which requires maintenance plan for recreation and play spaces.		
Reason:	Recreation and play spaces aren't sustainability measures. There are fitness/wellness building certifications that already meet this need. Including non-sustainability measures in NGBS reduces the focus on sustainability within the NGBS program. Non-sustainability points allow projects to achieve certification without delivering on sustainability. Non-sustainability measures divert time/resources for users of the NGBS program from the core sustainability goal.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Exercise and recreational areas provide important resources for residents while mitigating the needed transportation and infrastructure to go off site.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

Section 11 Remodeling

P072	ID 8011	11.503.5 Landscape plan	Final Formal Action: Accept
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	(2) Non-invasive vegetation that is native or regionally appropriate for local growing conditions is selected to promote <u>biodiversity</u> .		
Reason:	Missing word.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P073	ID 8087	11.505.6 Multi-unit plug-in electric vehicle charging	Final Formal Action: Accept as Modified
Submitter:	Steven Rosenstock, Self		
Comment:	11.505.6 Multi-unit plug-in electric vehicle charging. Plug-in electric vehicle charging capability is provided for not fewer than 2% <u>5%</u> of parking stalls. [<i>An additional 2 points can be earned for each percentage point above 2% <u>5%</u> for a maximum of 10 points</i>]		
Reason:	There are now many jurisdictions that have requirements at multi-family buildings for EV charging that are well above the 2% in the current standard. Here is one information source that shows requirements by jurisdiction: https://www.swenergy.org/transportation/electric-vehicles/building-codes#who This proposal increases the minimum requirement in the green standard to keep up with what is happening across the US in minimum building codes.		
CC Action:	Accept as Modified		
CC Modification:	11.505.6 Multi-unit plug-in electric vehicle charging. Plug-in electric vehicle charging capability is provided for not fewer than 2% of parking stalls. [<i>An additional <u>4</u> points can be earned for each percentage point above 2% for a maximum of <u>20</u> points</i>]		
CC Reason:	Wanted to maintain the 2% threshold, recognizing that many parts of the country still do not have EV chargers and to provide an easier entry point. We increased the cap to 20 points to further encourage use of EVs. The point value was increased to 4 points to recognize the higher investment needed for existing buildings.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P074	ID 8030	11.613 RESILIENT CONSTRUCTION	Final Formal Action: Accept
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	Change to <u>11.613.6</u>		
Reason:	Fix typo. Currently shows as 613.13.6		

CC Action:	Accept
CC Modification:	
CC Reason:	
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P075	ID 8021	11.703.1 Mandatory practices	Final Formal Action: Accept as Modified
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	11.703.1.1 Building thermal envelope compliance. The building thermal envelope is in compliance with § 11.703.1.1.1 or § 11.703.1.1.2. <u>Unconditioned buildings in the TZ are exempt.</u>		
Reason:	These practices are not applicable to those largely unconditioned structures typically constructed in the TZ. The NGBS should provide an exemption for 11.703.1.1 and 11.703.1.2 for buildings constructed in Tropical Climate zones.		
CC Action:	Accept as Modified		
CC Modification:	<p>11.703.1.1 Building thermal envelope compliance. For conditioned spaces, the building thermal envelope is in compliance with § 11.703.1.1.1 or § 11.703.1.1.2.</p> <p>Exception: Section 11.703.1.1 is not required for Tropical Climate Zone.</p> <p>Another option would be to modify both current exceptions to say "is not required for unconditioned buildings in a Tropical Climate Zone."</p> <p><u>11.703.1.1.2 Prescriptive R-values and fenestration requirements. The building thermal envelope is in accordance with the insulation and fenestration requirements of ICC IECC Table R402.1.2 or Table C402.1.3. The fenestration U-factors and SHGC's are in accordance with Table 703.2.5.1 or ICC IECC Table C402.4. Unconditioned buildings 3 stories or less in height located in the Tropical Zone are exempt from this practice if the building meets a minimum roof SRI of 0.85, and a minimum wall reflectivity of 0.39.</u></p>		
CC Reason:	Amendments are tailored to unique conditions in the tropical zone allowing more flexibility in the use of fenestration in the Tropical zone.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P076	ID 8040	11.703.1 Mandatory practices	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	Allow renovation projects that do not have any building thermal envelope work involved to bypass 11.703.1, provided that they can achieve a minimum of 30 points elsewhere in 11.703.		

Reason:	These mandatory practices are not applicable to more moderate renovation projects that do not intend to open up the walls or replace the conditioning systems. Clarification on the application of these mandatory requirements would allow more moderate renovation projects to still achieve green certification.
CC Action:	Accept as Modified
CC Modification:	11.703.1 Mandatory Practices. 30 <i>In accordance with Section 305.2.3, mandatory practices are not required where not applicable. Where 11.703.1 practices are out of scope of work, 30 points shall be achieved elsewhere from 11.703.</i>
CC Reason:	Crafted legislative language.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P077	ID 8103	11.706.5 On-site renewable energy system	Final Formal Action: Disapprove
Submitter:	Steven Rosenstock, Self		
Comment:	<p>11.706.5 On-site renewable energy system. One of the following options is implemented:</p> <p>(1) Building is Solar-Ready in compliance with...</p> <p>...</p> <p><i>Points shall not be awarded for the capacity of an on-site renewable energy system or battery energy storage system that is required by a jurisdiction to be installed in minimum building or energy codes that have been adopted by the jurisdiction.</i></p> <p><i>(rest of the section is unchanged)</i></p>		
Reason:	There are now local jurisdiction minimum codes and state minimum energy codes (such as California's Title 24) that require new buildings to install on-site renewable energy systems. See https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency for information about CA Title 24-2022. This proposed change will prevent "double counting", or giving points for a required practice in those jurisdictions.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Contingency with rules of local jurisdiction does not fit with the scope of NGBS being a national Standard, puts a burden on Verifiers, and creates inequity for projects.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P078	ID 8059	11.801.10 Pools and spas	Final Formal Action: Accept
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	<p>11.802.10.1 Pools and Spas with water surface area greater than 36 sq. ft. and connected to a water supply shall have a dedicated meter to measure the amount of water supplied to the pool or spa.</p> <p>Automated motorized non-permeable pool cover that covers the entire pool surface..... 10</p>		
Reason:	The requirement for pool meter is more feasible for new construction projects. It is unrealistic to expect an existing building owner to install a meter for existing pools and spas. This mandatory requirement should be deleted or made optional within the Renovation chapter.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2</p>		
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>APPROVE WITH COMMENT - Kevin Duell: This would make more sense with "that" in place: Automated motorized non-permeable pool cover that covers the entire pool surface</p>		

P079	ID 8113	11.802.5 Faucets	Final Formal Action: Disapprove
Submitter:	Katie Norem, Evolve Technologies		
Comment:	<p>Add new practice within Section 11.802.5.</p> <p>11.802.5.X An automatic tub-spout diverter system (with corresponding showerhead valve to pause flow) designed to conserve hot water is installed.....3 point per tub/9 points max.</p>		
Reason:	<p>The auto diverting (thermostatic) tub spout system reduces hot water waste in several ways: reducing structural waste, eliminating behavioral waste, and preventing tub spout leaks. The ADTS functions by first purging the cold water in the plumbing lines (structural waste) through its tub spout fixture. By design, the tub spout expels structural waste more than 2 times faster than possible through a shower head. Warming the water in the manner not only significantly reduces hot water wait time, but also reduces the volume of structural waste that must be purged before hot water arrives. Due to the higher velocity, less thermal loss occurs as the water travels through the plumbing line to the shower. As a result, hot water arrives faster, and the volume that must be purged is reduced. Once hot water arrives, the tub spout fixture automatically blocks the tub spout's out flow and diverts hot water to the showerhead. The included valve (installed between the shower arm and showerhead) automatically pauses (reduced to a trickle) water flow from the showerhead until the bather is ready to shower. This pause eliminates Behavioral Waste by preventing hot water from inadvertently running down the drain while bathers are away from the shower while waiting for hot water. When ready to shower, the bather will pull the lanyard on the valve at the showerhead so resume normal flow and shower as usual. During the shower, the shut-off that automatically diverted hot water to the showerhead remains active. This tight, positively reinforced, thermostatically activated seal stop tub spout diverter leaks by preventing hot water from sneak past the diverter and running out of the tub spout during the shower. These three areas of savings combine to an average of 10 gallons of hot water saved for every shower taken. (Structural Waste ~ .4 gallons, Behavioral Waste ~ 5.1 gallons, Tub Spout leaks ~ 4.5 gallons)</p>		
CC Action:	Disapprove		
CC Modification:			

CC Reason:	This appears to be a proprietary product with only one manufacturer developing it right now. We are unsure about industry standards and certifications covering this technology. We are also curious about potential conflict with the plumbing code. Question for submitter regarding savings claim.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P080	ID 8022	Section 11 Remodeling	Final Formal Action: Accept as Modified
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	<p><u>11.1004.0 Intent. A verification system for post occupancy assessment of the building is intended to be a management tool for the building owner to determine if energy or water usage have deviated from expected levels so that inspection and correction action can be taken.</u></p> <p><u>1004.1 Verification system. A verification system plan is provided in the building owner’s manual (§ 1001 or § 1002). The verification system provides methods for demonstrating continued energy and water savings that are determined from the building’s initial year of occupancy of water and energy consumption as compared to annualized consumption at least every four years.</u></p> <p><u>(1) Verification plan is developed to monitor post-occupancy energy and water use and is provided in the building owner’s manual.</u></p> <p><u>(2) Verification system is installed in the building to monitor post-occupancy energy and water use.</u></p>		
Reason:	Add new section 11.1004 to be the same as the Chapter 10 1004 section Post Occupancy for New Construction. Existing buildings should also be encouraged to monitor post-renovation performance.		
CC Action:	Accept as Modified		
CC Modification:	<p><u>11.1004.0 Intent. A verification system for post occupancy assessment of the building is intended to be a management tool for the building owner to determine if energy or water usage have deviated from expected levels so that inspection and correction action can be taken.</u></p> <p><u>11.1004.1 Verification system. A verification system plan is provided in the building owner’s manual (§ 11.1001 or § 11.1002). The verification system plan provides methods for demonstrating continued measuring energy and/or water savings consumption starting after the building reaches 80% or more occupied dwelling units. that are determined from the building’s initial year of occupancy of water and energy consumption as compared to annualized consumption at least every four years.</u></p> <p><u>(1) Verification plan is developed to monitor post-occupancy energy and/or water consumption and is provided in the building owner’s manual.</u></p> <p><u>(a) Plan to monitor energy consumption [1 point]</u></p> <p><u>(b) Plan to monitor water consumption [1 point]</u></p> <p><u>(c) Plan to report energy and/or water consumption to a national benchmarking system [1 point]</u></p> <p><u>(2) Verification system (excluding utility meters) is installed in the building to monitor and report in real time post-occupancy energy and water use.</u></p>		

	<p><u>(a) System is installed to monitor energy consumption [4 points]</u></p> <p><u>(b) System is installed monitor water consumption [4 points]</u></p> <p><u>(c) System is installed to report energy and/or water consumption to a national benchmarking system [4 points]</u></p>
CC Reason:	This new addition recognizes the energy saving energy and water saving possibilities. The additional points awarded for verification system reflect the additional value of real time monitoring and the additional cost required to install in an existing building.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

Additional TG Proposed Changes

A085	ID 8153	Section 11 Remodeling	Final Formal Action: Withdrawn
Submitter:	Aaron Gary, Tempo, Inc.		
Comment:	Update Chapter 6 and 9 practices as they appear in Chapters 11, 12, and 13.		
Reason:	Maintain the internal logic and structure of the NGBS Standard		
CC Action:	Withdrawn		
CC Modification:			
CC Reason:			
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

Section 12 Certified Compliance Path for Single-Family Homes, Townhomes, and Duplexes

P081	ID 8025	1202.13 Roof overhangs	Final Formal Action: Accept as Modified
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	1202.13 Roof overhangs. Roof overhangs, in accordance with Table 602.1.12, are provided over a minimum of 90% of exterior walls to protect the building envelope. <u>Concrete buildings are exempt.</u>		
Reason:	Modern style concrete homes in the TZ typically do not have roof overhangs, but roof overhangs don't provide an important value in shielding a concrete home from rain like a wood home. Therefore they should be exempt.		
CC Action:	Accept as Modified		
CC Modification:	<p><i>Modify Standard as Follows:</i></p> <p>1202.13 Roof overhangs. Roof overhangs, in accordance with Table 602.1.12, are provided over a minimum of 90% of exterior walls <u>area</u> to protect the building envelope.</p> <p><u>Exception: Unconditioned or low energy buildings in tropical zone.</u></p> <p>Note: change "walls" to "wall area" for each other overhang practice (602.1.12 and others).</p>		
CC Reason:	Since no new technical information was brought forward by the original negative commenter, the TG should not modify the original committee action. The previous TG 1 response to a negative commenter was counter to what the committee approved in the November meeting. Task Group 1 wants to return the item to the language approved by the Consensus Committee at the November meeting. The original negative commenter is encouraged to submit a public comment on the Draft Standard if they wish to further address this section.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 25</p> <p>Disapprove committee action: 1</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>APPROVE WITH COMMENT - Thomas Culp: Based on the TG1 discussion and modification, I'm now resolved.</p> <p>DISAPPROVE COMMITTEE ACTION - Theresa Weston: This provision is technically wrong. Tropical zones have a significant rain and overhangs are needed help manage moisture damage which can result from rain intrusion. Providing an exemption for concrete or masonry buildings as was originally proposed is reasonable as concrete buildings are less prone to moisture damage than wood buildings. The revision which returned the provision back to the original submission intent. The subsequent negatives did not dispute the technical basis but rather disputed the NGBS development process. It should be noted that the modification shown in the last vote circulation was developed in accordance with the NGBS process. I disagree with the reversion back to an earlier (November) modification.</p> <p>Task Group 1 Response: Non-Persuasive</p> <p>Reason: Since no new technical information was brought forward by the negative commenter, the TG should not modify the original committee action. Task Group 1 wants to keep the language approved by the Consensus Committee at the November meeting. The negative commenter is encouraged to submit a public comment on the Draft Standard if they wish to further address this section.</p>		

P082	ID 8084	1203.10 Energy performance pathway	Final Formal Action: Accept as Modified
Submitter:	Steven Rosenstock, Self		
Comment:	1203.10.1 ICC IECC analysis. Energy efficiency features are implemented to achieve energy cost or <u>site energy</u> or <u>source energy</u> or <u>carbon</u> performance that exceeds the ICC IECC by 7.5%.		
Reason:	Different jurisdictions use different metrics to judge building performance. The green standard should be flexible enough to adapt to the different metrics that are being used by different cities and different states (or if they are using multiple metrics). It should be noted that site energy was used in the first 2 version of the NGBS, and carbon is being used by more jurisdictions over the past few years.		
CC Action:	Accept as Modified		
CC Modification:	1203.10.1 ICC IECC analysis. Energy efficiency features are implemented to achieve energy cost, or <u>site energy</u> , or <u>source energy</u> , <u>or carbon</u> performance that exceeds the ICC IECC by 7.5%.		
CC Reason:	Consistent with actions on similar items in Section 3 and 7.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 1 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>DISAPPROVE COMMITTEE ACTION - Craig Charles Conner: Several reasons. -Carbon or CO2 equivalent should not be with the three other energy metrics list (cost, source, site) with an ""or"", as carbon/CO2e are an additional dimension rather than another energy metric. -I am skeptical of the carbon/CO2e calculation. -I live in the Pacific Northwest, where we have areas of very high hydro. Does that mean those areas have almost no carbon/CO2 so that carbon/CO2e ""measure of energy"" is almost zero in the land of high hydro? -Electricity generation from natural gas has less than half the CO2e than electricity from fossil fuels so electricity CO2e is sometimes difficult to even know. -In my experience many jurisdictions will not even understand the difference between site energy, source energy, energy cost, and CO2. You can test this by asking them which they have.</p> <p>Task Group 1 Response: Non-Persuasive</p> <p>Reason: The requirement as stated will include flexibility to local jurisdictions who may be using carbon emissions as their standard. Carbon dioxide equivalence is being used in several different programs.</p>		

P083	ID 8057	1203.11 Energy prescriptive pathway	Final Formal Action: Accept as Modified
Submitter:	Chinedu Moneke, Home Innovation Research Labs (NGBS Green)		
Comment:	<p>Include additional practice below in the prescriptive energy path:</p> <p>Building envelope leakage. The building thermal envelope is in accordance with ICC IECC R402.4.1.2 or C402.5 as applicable</p>		
Reason:	The prescriptive energy path should have a maximum ACH50/ELR50 for climate zones as were in the 703.1.2 prescriptive path requirements		
CC Action:	Accept as Modified		
CC Modification:	1203.14 Building envelope leakage. the air leakage rate of the dwelling unit tested in accordance with ANSI/RESNET/ICC Std. 380, ASTM E779, or ASTM E1827 shall not be greater than the following:		

	<p><u>climate zones 0-2: 5.0 ACH, 0.33 ELR50, or 0.28 cfm50 per square foot of enclosure area.;</u> <u>climate zones 3-8. 3.0 ACH, 0.23 ELR50, or 0.23 cfm50 per square foot of enclosure area.</u></p> <p>Exception: Unconditioned and low energy buildings.</p>
CC Reason:	The CC realized that the reference to the C402.5 code was inapplicable, plus the CC wanted to provide a ACH max and not refer users to the code to find the requirement for compliance. Recognized that testing was not necessary for unconditioned buildings. (Also, notes there is already a 1203.14 so the numbering needs to be revised, but this practice should be after the Duct Leakage practice.)
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 25</p> <p>Disapprove committee action: 0</p> <p>Abstain: 2</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>ABSTAIN - Theresa Weston: This practice should be further updated to align with the IECC 2024 once it is available.</p>

P084	ID 8023	1203.11.1 Building envelope	Final Formal Action: Accept
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	1203.11.1 Building envelope. The building thermal envelope complies with § 1203.11.1.1 or § 1203.11.1.2. Exception: Section 1203.11.1.1 and 1203.11.1.2 are is not required for Tropical Climate Zone.		
Reason:	Exception is provided for 1203.11.1.1 for buildings constructed in the Tropical Climate Zone. Exception should be amended to indicate that neither 1203.11.1.1 nor 1203.11.1.2 are required in Tropical climate. These practices are not applicable to those largely unconditioned structures typically constructed in the Tropics.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P085	ID 8014	1204 WATER EFFICIENCY	Final Formal Action: Accept
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	<p><u>1204.1 Mandatory requirements. The building shall comply with 1204.2 Prescriptive Path or 1204.3 Performance Path.</u></p> <p>Existing text for 1204.1, 1204.2, 1204.3 should be renumbered under 1204.2 Prescriptive Path. Existing text for 1204.4 should be renumbered under 1204.3 Performance Path.</p>		
Reason:	Formatting is inconsistent with other sections and potentially confusing. Reformat so that this section is similarly structured as the Energy Efficiency section. Add a "Mandatory Requirements" section that clearly identifies the Prescriptive and Performance pathways as either/or options.		
CC Action:	Accept		

CC Modification:	
CC Reason:	
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P086	ID 8010	1204.4 Alternative Compliance Path	Final Formal Action: Accept
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	1204.4 Alternative Compliance Path. <u>A Water Rating Index (WRI) needs to achieve a level 70 of 70 or lower is achieved.</u>		
Reason:	There is no reason that a home cannot be higher-performing than the value specified.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P087	ID 8041	1205.7 Local ventilation	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	<p>Replace with the following--</p> <p>1205.7 Local Ventilation. Bathroom and kitchen exhaust ventilation rates are tested to meet minimum ventilation rates or ducts are installed to meet the prescriptive requirements in IRC Table M1504.2.</p> <p>(1) Testing Option</p> <p>(a) Bathrooms are vented to the outdoors. The minimum tested ventilation rate is 50 cfm (23.6 L/s) for intermittent operation or 20 cfm (9.4 L/s) for continuous operation in bathrooms. Exhaust fans are ENERGY STAR, or equivalent.</p> <p>(b) Kitchen exhaust units and/or range hoods are ducted to the outdoors and have a minimum ventilation rate of 100 cfm (47.2 L/s) for intermittent operation or 25 cfm (11.8 L/s) for continuous operation.</p> <p>(2) Prescriptive Option: Bathroom and kitchen exhaust ventilation rates ducts are installed to meet the prescriptive requirements in IRC Table M1504.2.</p>		
Reason:	Practice should be reformatted for clarify. It doesn't make sense for all three sub-items to be required.		
CC Action:	Accept as Modified		
CC Modification:	Delete 1205.7 and replace with the following:		

1205.7 Local Ventilation. Kitchen, bathroom, and laundry area exhaust ventilation rates are designed in accordance with the IRC. Exhaust fans are ENERGY STAR, or equivalent.

Where installed Kitchen, bathroom, and laundry area exhaust are tested in accordance with BSR/RESNET/ICC 380 to the design rate(s)

Exception: The requirements of Table 1205.XXX shall be permitted in place of a measurement. When using Table 1205.XXX, the airflow rating shall meet or exceed a static pressure of 0.25 in. of water column.

Use of Table 1205.XXX is limited to one or more of the following:

Duct system not exceeding 25 ft in length;

Duct system with no more than three (3) elbows;

Duct system with exterior termination fittings having a hydraulic diameter greater than or equal to the minimum duct diameter not less than the hydraulic diameter of the fan outlet.

Table 1205.XXX Prescriptive Duct Sizing

Fan Airflow Rating (CFM), at minimum static pressure of 0.25 in. of water	≤ 50	≤ 80	≤ 100	≤ 125	≤ 150	≤ 175	≤ 200	≤ 250	≤ 350	≤ 400	≤ 450	≤ 700	≤ 800
Duct Type	Minimum Duct Diameter, In. ^{a,b}												
Rigid Duct	4 ^e	5	5	6	6	7	7	8	9	10	10	12	12 ^d
Flex Duct ^c	4	5	6	6	7	7	8	8	9	10	NP	NP	NP

a. For noncircular ducts, calculate the diameter as four times the cross-sectional area divided by the perimeter.

b. NP = application of the prescriptive table is not permitted for this scenario.

c. Use of this table for verification of flex duct systems requires flex duct to be fully extended and any flex duct elbows to have a minimum bend radius to duct diameter ratio of 1.0.

d. For this scenario, use of elbows is not permitted.

e. For this scenario, 4 in. (100 mm) oval duct shall be permitted, provided the minor axis of the oval is greater than or equal to 3 in. (75 mm)

CC Reason: Consistent with action on A072.

Ballot 1 Results:
 Eligible to vote: 29
 Approve committee action: 26
 Disapprove committee action: 0
 Abstain: 1
 Non-voting: 2

Ballot 1 Comments: **ABSTAIN - Robert Ross:** As Chairman I Abstain in order to maintain neutrality on all issues.

P088	ID 8043	1205.8 Whole Dwelling Ventilation	Final Formal Action: Accept as Modified
Submitter:	Carl Seville, SK Collaborative		
Comment:	1205.8 Whole Dwelling Ventilation. One of the following whole dwelling ventilation systems shall be implemented and shall be in accordance with the specifications of ASHRAE Standard 62.2-2010 Section 4. An explanation of the operation and importance of the ventilation system shall be included in the homeowner's manual practice. <u>Ventilation flow rate shall not be required for home being certified under the Tropical Climate exemption.</u>		

Reason:	ASHRAE 62.2 2010 requires whole house airflow to be tested. Homes using the Tropical Climate exemption do not require duct or envelope testing and are typically affordable housing. For these projects, inspections are done primarily virtually, allowing these projects to be certified cost effectively. If on site verification of only house ventilation is required it will significantly increase the cost of certification and as these homes are typically naturally vented the value of confirmed ventilation is of limited value. Confirming that the duct installation meets the ASHRAE Prescriptive Design is adequate to confirm the ventilation system installation.
CC Action:	Accept as Modified
CC Modification:	1205.8 Whole Dwelling Ventilation. One of the following whole dwelling ventilation systems shall be implemented and shall be in accordance with the specifications of ASHRAE Standard 62.2-2010 Section 4. An explanation of the operation and importance of the ventilation system shall be included in the homeowner's manual practice. Ventilation flow rate shall not be required for buildings following the Tropical Climate Zone compliance. Exemption: Unconditioned or low energy buildings in the tropical zone.
CC Reason:	Revised the exemption to be consistent with the language they previously accepted in an earlier practice. Buildings in the Tropical Climate Zones with natural ventilation does not require mechanical ventilation.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P089	ID 8024	1205.9 Radon control	Final Formal Action: Accept as Modified
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	1205.9 Radon control. Radon control measures are installed in accordance with 902.3 for Zone 1 as defined in Figure 9(1). (a) a passive radon system is installed, or (b) an active radon system is installed In Radon Zone 1, a passive system is installed.		
Reason:	Simplify text to "In Radon Zone 1, a passive radon system is installed." Referring to both "radon control measures" and "section 902.3" presents confusion, as section 902.3 covers both "radon reduction measures" and "radon testing." Further, there is no need to list both passive and active radon system options within Chapter 12, since there are no design choices. It would be cleaner to identify one core expectation for homes in radon zone 1.		
CC Action:	Accept as Modified		
CC Modification:	1205.9 Radon control. Radon control measures are installed in accordance with 902.3 for Zone 1 as defined in Figure 9(1). (a) a passive radon system is installed, or (b) an active radon system is installed		

	In <u>EPA Radon Zone 1</u> , a passive or active system is installed.
CC Reason:	Modified the proposal to be clear that if an active system is installed it would be compliant.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

Additional TG Proposed Changes

A086	ID 8228	Section 12 certified compliance path for single-family homes, townhomes, and duplexes	Final Formal Action: Disapprove
Submitter:	Greg Coolidge, Crescent Communities		
Comment:	SECTION 12 CERTIFIED COMPLIANCE PATH FOR SINGLE-FAMILY HOMES, TOWNHOMES, <u>AND DUPLEXES, TRIS, AND QUADS</u>		
Reason:	There really is no reason to not allow tris and quads for the Chapter 12 compliance path		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	Do not want to restrict the certified path, building requirements are defined elsewhere in the standard.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A087	ID 8163	1204.1 Lavatory faucets.	Final Formal Action: Accept as Modified
Submitter:	Olga Cano, EPA WaterSense		
Comment:	Water-efficient lavatory faucets in bathrooms shall have a maximum flow rate of 1.5 gmp (5.58 L/min), tested at 60 psi (414 kPa) in accordance with ASME A112.18.1/CSA B125.1 and be WaterSense labeled		
Reason:	<p>Requiring the WaterSense label ensures that products have met EPA's performance criteria for user satisfaction in addition to efficiency.</p> <p>Offers consistency with Water Closet guidance which specifies WaterSense specification.</p> <p>Specifying the pressure is unnecessary. Pressure is specified as part of the WaterSense performance requirements. Metered faucets do not have pressure settings specified by the manufacturer. Manufacturer listed pressure in other plumbing products is governed by DOE standards.</p>		
CC Action:	Accept as Modified		
CC Modification:	<p><i>Modify 2020 NGBS as follows:</i></p> <p>1204.1 Lavatory faucets. Water-efficient lavatory faucets in bathrooms shall have a maximum flow rate of 1.5 gpm (5.68 L/min), tested at 60 psi (414 kPa) in accordance with ASME A112.18.1/CSA B125.1 <u>and meets the performance criteria of the EPA WaterSense High-Efficiency Lavatory Faucet Specification:</u></p>		
CC Reason:	Consistent language with the equivalent Section 8 practice.		

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. APPROVE WITH COMMENT - Kevin Duell: grammar correction: Water-efficient lavatory faucets in bathrooms shall have a maximum flow rate of 1.5 gpm (5.68 L/min), tested at 60 psi (414 kPa) in accordance with ASME A112.18.1/CSA B125.1 <u>and shall meet the performance criteria of the EPA WaterSense High-Efficiency Lavatory Faucet Specification:</u>

A088	ID 8227	1205.7 Local ventilation	Final Formal Action: Accept as Modified
Submitter:	Carl Seville, SK Collaborative		
Comment:	<p>1205.7 Local ventilation. shall be in accordance with the following:</p> <p>(1) Bathrooms are vented to the outdoors. The minimum tested ventilation rate is 50 cfm (23.6 L/s) for intermittent operation or 20 cfm (9.4 L/s) for continuous operation in bathrooms. Exhaust fans are ENERGY STAR, or equivalent.</p> <p>(2) Kitchen exhaust units and/or range hoods are ducted to the outdoors and have a minimum ventilation rate of 100 cfm (47.2 L/s) for intermittent operation or 25 cfm (11.8 L/s) for continuous operation. <u>Homes meeting the tropical climate exemption for energy efficiency with kitchens open to rooms with operable windows are exempt from this requirement.</u></p> <p>(3) Bathroom and kitchen exhaust ventilation rates are tested to meet minimum ventilation rates or ducts are installed to meet the prescriptive requirements in IRC Table M1504.2.</p>		
Reason:	Kitchens in homes located in tropical zones often have operable windows and no AC and would not need the additional ventilation provided by a kitchen exhaust unit or range hood.		
CC Action:	Accept as Modified		
CC Modification:	<p>1205.7 Local ventilation. shall be in accordance with the following:</p> <p>(1) Bathrooms are vented to the outdoors. The minimum tested ventilation rate is 50 cfm (23.6 L/s) for intermittent operation or 20 cfm (9.4 L/s) for continuous operation in bathrooms. Exhaust fans are ENERGY STAR, or equivalent. <u>Exemption: 1205.7(1) is not required for the Tropical Zone Climate if the operable window area is at least 14% of the Bathroom floor area</u></p> <p>2) Kitchen exhaust units and/or range hoods are ducted to the outdoors and have a minimum ventilation rate of 100 cfm (47.2 L/s) for intermittent operation or 25 cfm (11.8 L/s) for continuous operation. <u>Homes meeting the tropical climate exemption for energy efficiency with kitchens open to rooms with operable windows are exempt from this requirement. Exemption: 1205.7(2) is not required for the Tropical Zone Climate if the operable window area is at least 14% of the Kitchen floor area.</u></p> <p>(3) Bathroom and kitchen exhaust ventilation rates are tested to meet minimum ventilation rates or ducts are installed to meet the prescriptive requirements in IRC Table M1504.2.</p>		
CC Reason:	This addresses natural ventilation as a compliance.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0		

	Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

Section 13 Commercial Spaces

P090	ID 8034	13.102 COMPLIANCE	Final Formal Action: Accept
Submitter:		Michelle Foster, Home Innovation Research Labs (NGBS Green)	
Comment:		<p>13.1023.1.1 Core and shell compliance. The exterior air barrier, insulation, air sealing, and fenestration, are verified to the requirements of this chapter at the time of certification.</p> <p>13.1043.2 Core and shell material selection. The core and shell of the non-residential portion of the building must contain similar green material selections of the residential portion of the building and must comply with the additional provisions of this section.</p> <p>13.1053.13 Building thermal envelope insulation. The non-residential portion of the building must comply with the insulation requirements of ICC IECC Sections C402.1 through C402.3 as applicable, and § 13.105.1.1. A UA tradeoff shall be allowed for § 13.105.1 and § 13.105.2 is equal to or less than the ICC IECC UA.</p> <p>Maximum UA. For ICC IECC residential, the total building UA is less than or equal to the total maximum UA as computed by 2015 ICC IECC Section R02.1.5. For ICC IECC commercial, the total UA is less than or equal to the sum of the UA for 2015 ICC IECC Tables C402.1.4 and C402.4, including the U-factor times the area and C-factor or F-factor times the perimeter. The total UA proposed and baseline calculations are documented. REScheck or COMcheck is deemed to provide UA calculation documentation.</p> <p>13.103.4 105.1.1 Insulation installation. Insulation installed in the thermal envelope shall be visually inspected for compliance with Grade I installation. Grade II insulation is only permitted where exterior continuous insulation is installed. Grade III insulation installation is not permitted.</p> <p>13.103.5 105.2 Building thermal envelope fenestration. The non-residential portion of the building shall be in accordance with the requirements of the ICC IECC Section C402.4 as applicable.</p> <p>13.103.6 Building thermal envelope air sealing. The building thermal envelope is durably sealed to limit infiltration. The sealing methods between dissimilar materials allow for differential expansion and contraction. The following are caulked, gasketed, weather-stripped or otherwise sealed with an air barrier material, suitable film, or solid material:</p> <ol style="list-style-type: none"> (1) All joints, seams and penetrations (2) Site-built windows, doors and skylights (3) Openings between window and door assemblies and their respective jambs and framing (4) Utility penetrations (5) Dropped ceilings or chases adjacent to the thermal envelope (6) Knee walls (7) Walls and ceilings separating the garage from conditioned spaces (8) Behind tubs and showers on exterior walls (9) Cantilevers 	

	(10) Attic access openings (11) Rim joists junction (12) Other sources of infiltration 13.105.3.1 Air barrier verification. If not previously verified, the air barrier shall be visually inspected to demonstrate compliance with Table 701.4.3.2(2) and shall comply with the requirements of ICC IECC C402.5.
Reason:	Items required for Core & Shell certification is not clear based on current formatting. Suggest making two distinct sections, one for core and shell and one for fully fitted out and equipped and indicating core and shell is prerequisite for core and shell.
CC Action:	Accept
CC Modification:	
CC Reason:	
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P091	ID 8026	13.104.3 Core and shell material selection	Final Formal Action: Disapprove
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	13.104.3.1 Material selection. At least six of these sections must be met from the following: Biobased products § 606.1 Wood-based products § 606.2 Manufacturing energy § 606.3 Resource-efficient materials § 608.1 Regional materials § 609.1 Product LCA § 610.1.2.1 Building assembly LCA § 610.1.2.2 Manufacturer’s environmental management system concepts § 612.1 Sustainable products § 612.2 Salvaged materials § 603.2 Product declarations § 611.1.1 and § 611.1.2 Recycled content § 604.1		
Reason:	This section needs a new section number to separate it from the Core and Shell requirements of 13.104.3. As it is numbered now, nested within 13.104 it seems like it should be required for core and shell certification, but that would not make any sense. ALSO reorder items 1-12 so that they are in numeric order of the practice.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	In favor of action on A091.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0		

	Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. APPROVE - Joshua Robert Stack: These attributes don't embody the critical function of the shell.

P092	ID 8098	13.105.1 Building thermal envelope insulation	Final Formal Action: Disapprove
Submitter:	Jamie Carr, Self		
Comment:	Add at the end of 13.105.1 after "provide UA calculation documentation": Where buildings have a vertical fenestration area or skylight area exceeding that allowed in Section C402.4, provide documentation showing compliance with Section C401.2, Item 1 or Section 401.2, Item 3.		
Reason:	Currently the only form of compliance for the maximum UA is through REScheck or COMcheck. Tall curtain wall buildings generally do not comply through this method because their glazing area exceeds that allowed by C402.4. In fact, 2018 IECC section C402.1 says that these buildings need to use one of the modeling paths to show envelope compliance. I propose including modeling as a way to show minimum compliance so that the commercial space in these types of buildings can be certified.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	In favor of action on A092.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P093	ID 8033	13.105.1 Building thermal envelope insulation	Final Formal Action: Accept as Modified
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	Reference <u>the 2024 IECC</u> .		
Reason:	This section references the 2015 ICC IECC tables, not 2018. Was that intentional? Or, should the next version of the NGBS reference the same IECC version as it does for residential?		
CC Action:	Accept as Modified		
CC Modification:	Reference <u>the 2024 2021 IECC</u> .		
CC Reason:	Consistency.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 0 Abstain: 2 Non-voting: 2		

Ballot 1 Comments:	ABSTAIN - Theresa Weston: This practice should be further updated to align with the IECC 2024 once it is available. ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.
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Additional TG Proposed Changes

A089	ID 8236	13.102.1 Compliance	Final Formal Action: Accept as Modified
Submitter:	Carl Seville, SK Collaborative		
Comment:	Core and shell compliance. The exterior air barrier, insulation, air sealing, fenestration, <u>resource efficiency measures, and any other products or systems that are installed at the time of certification</u> are verified to the requirements of this chapter at the time of certification.		
Reason:	Core and shell projects should include moisture management and resource efficient planning and construction. Specific Resource Efficiency Measures to be included in Core and Shell certification include: 13.104.1.1 Capillary Break 13.104.1.2 Foundation Drainage 13.104.1.3 Dampproof Walls 13.104.1.4 Water Resistive Barrier 13.104.1.5 Flashing 13.104.1.7 Ice Barrier 13.104.1.8 Architectural Features		
CC Action:	Accept as Modified		
CC Modification:	Per the accepted proposal P090, the items within the Reason statement above should be included in the new Core and Shell section. Specify <u>newly-installed</u> resource efficiency measures to be included in Core and Shell projects.		
CC Reason:	These items belong in both Core and Shell and Full Fit-Out. Better accommodate existing buildings with commercial spaces by including newly-installed language for certain measures.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A090	ID 8238	Section 13.104.1 Enhanced Durability	Final Formal Action: Accept as Modified
Submitter:	Karla Butterfield, Steven Winter Associates, Inc.		
Comment:	13.104.1 Enhanced Durability. <u>For existing spaces, a visual inspection of interior surfaces shall be performed by the verifier. If moisture is evident, the source (e.g. leaks around windows, doors, wall penetrations, roofs, flashing, foundations, plumbing, etc.) must be identified and remediated.</u>		

	<p>13.104.1.1 Capillary break. A capillary break and vapor retarder shall be installed under <u>newly installed</u> concrete slabs in accordance with ICC IBC Sections 1907, excluding exception #3 and 1805.2.1</p> <p>13.104.1.2 Foundation drainage. Where required by the ICC IBC, for <u>newly constructed</u> habitable and usable spaces below grade, exterior drain tile is installed.</p> <p>13.104.1.3 Dampproof walls. <u>Newly installed</u> walls that retain earth and enclose interior spaces, are required to be dampproofed per ICC IBC Section 1805.</p> <p>13.104.1.4 Water-resistive barrier. Where required by the ICC IBC, a water-resistive barrier and/or drainage system is installed behind <u>newly installed</u> exterior cladding.</p> <p>13.104.1.5 Flashing. Flashing is provided as follows to minimize water entry into wall and roof assemblies and to direct water to exterior surfaces or exterior water-resistive barriers for drainage. Flashing details are provided in the construction documents and are in accordance with the fenestration manufacturer’s instructions, the flashing manufacturer’s instructions, or as detailed by a registered design professional.</p> <p>Flashing is installed at the following <u>newly installed assembly</u> locations, as applicable unless in conflict with manufacturer’s installation instructions:</p> <p><i>Items (1) through (12) remain unchanged</i></p> <p>13.104.1.6 Tile backing materials. Tile backing materials installed under <u>newly tiled</u> surfaces in wet areas are in accordance with ASTM C1178, C1278, C1288, or C1325. Tile shall not be installed over paper-faced gypsum board in wet areas.</p> <p><i>Item 13.104.1.7 Ice Barrier remains unchanged</i></p> <p>13.104.1.8 Architectural features that increase the potential for water intrusion are avoided, and must comply with the following:</p> <p>1) <u>Newly installed</u> horizontal ledgers are sloped away to provide gravity drainage as appropriate for the application.</p> <p>2) No roof configurations that create horizontal valleys in roof design, unless directed to a drain on a flat roof.</p> <p>3) No <u>newly installed</u> recessed windows and architectural features that trap water on horizontal surfaces.</p>
Reason:	Although referencing the ICC IBC implies these requirements are for newly constructed assemblies, clarifying newly installed may allow more rehab and renovation project participation. The submitter has weighed durability concerns against the overall impact of including existing buildings, therefore, a visual inspection would be required to ensure moisture issues aren’t pre-existing.
CC Action:	Accept as Modified
CC Modification:	<p>13.104.1 Enhanced Durability. <u>For existing spaces, a visual inspection of interior surfaces shall be performed. Where moisture is evident, the source, such as, but not limited to leaks around windows, doors, wall penetrations, roofs, flashing, foundations, and plumbing, shall be identified and remediated.</u></p> <p>13.104.1.1 Capillary break. A capillary break and vapor retarder shall be installed under <u>newly installed</u> concrete slabs in accordance with ICC IBC Sections 1907, excluding exception #3 and 1805.2.1</p>

	<p>13.104.1.2 Foundation drainage. Where required by the ICC IBC, for <u>newly constructed</u> habitable and usable spaces below grade, exterior drain tile is installed.</p> <p>13.104.1.3 Dampproof walls. <u>Newly installed</u> walls that retain earth and enclose interior spaces, are required to be dampproofed per ICC IBC Section 1805.</p> <p>13.104.1.4 Water-resistive barrier. Where required by the ICC IBC, a water-resistive barrier and/or drainage system is installed behind <u>newly installed</u> exterior cladding.</p> <p>13.104.1.5 Flashing. Flashing is provided as follows to minimize water entry into wall and roof assemblies and to direct water to exterior surfaces or exterior water-resistive barriers for drainage. Flashing details are provided in the construction documents and are in accordance with the fenestration manufacturer’s instructions, the flashing manufacturer’s instructions, or as detailed by a registered design professional.</p> <p>Flashing is installed at the following <u>newly installed assembly</u> locations, as applicable unless in conflict with manufacturer’s installation instructions:</p> <p><i>Items (1) through (12) remain unchanged</i></p> <p>13.104.1.6 Tile backing materials. Tile backing materials installed under <u>newly</u> tiled surfaces in wet areas are in accordance with ASTM C1178, C1278, C1288, or C1325. Tile shall not be installed over paper-faced gypsum board in wet areas.</p> <p><i>Item 13.104.1.7 Ice Barrier remains unchanged</i></p> <p>13.104.1.8 Architectural features that increase the potential for water intrusion are avoided, and must comply with the following:</p> <p>1) <u>Newly installed</u> horizontal ledgers are sloped away to provide gravity drainage as appropriate for the application.</p> <p>2) No roof configurations that create horizontal valleys in roof design, unless directed to a drain on a flat roof.</p> <p>3) No <u>newly installed</u> recessed windows and architectural features that trap water on horizontal surfaces.</p>
CC Reason:	Modification provides additional flexibility and clarity of language.
Ballot 1 Results:	<p>Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A091	ID 8237	13.104.3 Core and shell material selection	Final Formal Action: Accept as Modified
Submitter:	Karla Butterfield, Steven Winter Associates, Inc.		
Comment:	<p>13.104.3.1 Material selection. At least six of the following Section 6 items must be met from the following when certifying to Full missed-use building compliance (13.102.1.2).</p> <p>Also, change the numbering to 13.104.3 if the CC deletes 13.104.3 (previous submittal).</p>		

Reason:	As it currently reads, it is not clear that 13.104.3.1 only applies to a full fit out. It would be difficult for core and shell to meet this since finish materials aren't usually being selected.
CC Action:	Accept as Modified
CC Modification:	13.104.3.1 Material selection. Not less than At least six of the following Section 6 items must be met from the following <u>where</u> certifying to Full mixed -use building compliance (13.102.1.2). <i>Also, change the numbering to 13.104.3 if the CC deletes 13.104.3 (previous submittal).</i>
CC Reason:	Fixed typo, applied other editorial corrections.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A092	ID 8240	13.105.1 Building thermal envelope insulation	Final Formal Action: Accept as Modified
Submitter:	Carl Seville, SK Collaborative		
Comment:	<p>13.105.1 Building thermal envelope insulation. The non-residential portion of the building must comply with the insulation requirements of ICC IECC Sections C402.1 through C402.3 as applicable, and § 13.105.1.1–A UA tradeoff shall be allowed for § 13.105.1 and § 13.105.2 is equal to or less than the ICC IECC UA. <u>or the entire building envelope including non-commercial areas meet the total IECC UA or the entire building meets the IECC as demonstrated with whole building energy model.</u></p> <p>Maximum UA. For ICC IECC residential, the total building UA is less than or equal to the total maximum UA as computed by 2015 ICC IECC Section R02.1.5. For ICC IECC commercial, the total UA is less than or equal to the sum of the UA for 2015 ICC IECC Tables C402.1.4 and C402.4, including the U-factor times the area and C-factor or F-factor times the perimeter. The total UA proposed and baseline calculations are documented. REScheck or COMcheck is deemed to provide UA calculation documentation <u>or the entire building envelope including non-commercial areas meet the total IECC UA or the entire building meets the IECC as demonstrated with whole building energy model.</u></p>		
Reason:	If the entire building meets the energy code, there is no reason that attached commercial space should not comply if the envelope of that area was not compliant with the prescriptive code.		
CC Action:	Accept as Modified		
CC Modification:	<p>13.105.1 Building thermal envelope insulation. The non-residential portion of the building must comply with the insulation requirements of ICC IECC Sections C402.1 through C402.3 as applicable, and § 13.105.1.1–A UA tradeoff shall be allowed for § 13.105.1 and § 13.105.2 is equal to or less than the ICC IECC UA. <u>or the entire building envelope including non-commercial areas meet the total IECC UA or the entire building meets the IECC as demonstrated with whole building energy model.</u></p> <p>Maximum UA. For ICC IECC residential, the total building UA is less than or equal to the total maximum UA as computed by 2015 ICC IECC Section R402.1.5. For ICC IECC commercial, the total UA is less than or equal to the sum of the UA for 2015 ICC IECC Tables C402.1.4 and C402.4, including the U-factor times the area and C-factor or F-factor times the perimeter. The total UA proposed and baseline calculations are documented. REScheck or COMcheck is deemed to provide UA calculation documentation <u>or the entire building envelope including non-commercial areas meet the total IECC UA or the entire building meets the IECC as demonstrated with whole building energy model.</u></p>		
CC Reason:	Align IECC reference with current reference code. Correct section number.		

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A093	ID 8252	13.105.1 Building thermal envelope insulation	Final Formal Action: Accept as Modified
Submitter:	Carl Seville, Josh Hanson, & Thomas Culp, SK Collaborative, US-EcoLogic, & Birch Point Consulting		
Comment:	<p>13.105.1 Building thermal envelope insulation and fenestration. The non-residential portion of the building must comply shall be in accordance with <u>one of the following</u>:</p> <p>(1) The insulation requirements of ICC IECC Sections C402.1 through C402.3C402.4 or R402.1 through R402.3 including table R402.4.1.1, as applicable, and § 13.105.1.1. A UA tradeoff shall be allowed for § 13.105.1 and § 13.105.2 is equal to or less than the ICC IECC UA.</p> <p>(2) <u>The entire building thermal envelope, including both residential and non-residential, meet the total ICC IECC UA per section C402.1.5 or R402.1.5, as applicable.</u></p> <p>(3) <u>The entire building meets the ICC IECC as demonstrated with a whole building energy model per ICC IECC section C407.</u></p> <p>(4) <u>The entire building complies with ASHRAE 90.1 Section 4.2.1.1.c Appendix G.</u></p> <p>Maximum UA. For ICC IECC residential, the total building UA is less than or equal to the total maximum UA as computed by 2015 ICC IECC Section R02.1.5. For ICC IECC commercial, the total UA is less than or equal to the sum of the UA for 2015 ICC IECC Tables C402.1.4 and C402.4, including the U-factor times the area and C-factor or F-factor times the perimeter. The total UA proposed and baseline calculations are documented. REScheck or COMcheck is deemed to provide UA calculation documentation</p>		
Reason:	If the entire building meets the energy code, there is no reason that attached commercial space should not comply if the envelope of that area was not compliant with the prescriptive code. Included more direct language for alignment with 13.105.2 and 13.105.12 (prescriptive, UA trade off and modeling as applicable options)		
CC Action:	Accept as Modified		
CC Modification:	<p>13.105.1 Building thermal envelope insulation and fenestration. <u>Comply with one of the following:</u></p> <p>(1) The insulation requirements of IECC Sections C402.1 through C402.3C402.4 or R402.1 through R402.3 including table R402.4.1.1, as applicable, and § 13.105.1.1. A UA tradeoff shall be allowed for § 13.105.1 and § 13.105.2 is equal to or less than the ICC IECC UA.</p> <p>(2) <u>The entire building thermal envelope, including both residential and non-residential, comply with total IECC Section C402.1.5 or R402.1.5, as applicable.</u></p> <p>(3) <u>The entire building complies with the IECC as demonstrated with a whole building energy model in accordance with IECC Section C407.</u></p> <p>(4) <u>The entire building complies with ASHRAE 90.1 Section 4.2.1.1.c Appendix G.</u></p>		
CC Reason:	Clarify the intent of the standard.		

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A094	ID 8245	13.105.2 Building Thermal Envelope Thermal Fenestration	Final Formal Action: Accept
Submitter:	Carl Seville & Josh Hanson, SK Collaborative & US-EcoLogic		
Comment:	<p>13.105.2 Building Thermal Envelope Thermal Fenestration.</p> <p>The non-residential portions of the building shall be in accordance with one of the following: the requirements of the ICC IECC Section C402.4 as applicable</p> <p>The requirement of the ICC IECC Section C402.4 or R402.3, as applicable.</p> <p>The entire building thermal envelope, including both residential and non-residential, meet the total ICC IECC UA per section C402.1.5 or R402.1.5, as applicable.</p> <p>The entire building meets the ICC IECC as demonstrated with a whole building energy model per ICC IECC section C407.</p>		
Reason:	Fenestration practices have been added to 13.105.1.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A095	ID 8246	13.105.3 Building thermal envelope air sealing	Final Formal Action: Accept as Modified
Submitter:	Karla Butterfield, Steven Winter Associates, Inc.		
Comment:	<p>13.105.3 Building thermal envelope air sealing. The building thermal envelope is durably sealed to limit infiltration. The sealing methods between dissimilar materials allow for differential expansion and contraction. <u>Where applicable</u>, the following are caulked, gasketed, weather-stripped or otherwise sealed with an air barrier material, suitable film, or solid material:</p> <p>(1)</p> <p>(2) <u>Newly installed</u> site-built windows, doors and skylights</p> <p>(3) Openings between <u>newly installed</u> window and door assemblies and their respective jambs and framing</p>		

	<p>(4)</p> <p>(5)</p> <p>(6)</p> <p>(7)</p> <p>(8) Behind <u>newly installed</u> tubs and showers on exterior walls</p> <p>(9) <u>Newly</u> constructed cantilevers</p> <p>(10)</p> <p>(11) <u>Newly installed</u> rim joists junctions</p> <p>(12)</p>
Reason:	Where applicable is added to ensure core and shell projects comply when the item is installed. Adding newly installed to some of the items will allow renovation projects to comply. For example, if the windows are not being replaced, verifying sealant around the rough opening is not required. However, joints, seams and penetrations must be sealed so a joint between the existing window trim and drywall would need to be sealed.
CC Action:	Accept as Modified
CC Modification:	<p>13.105.3 Building thermal envelope air sealing. The building thermal envelope is durably sealed to limit infiltration. The sealing methods between dissimilar materials allow for differential expansion and contraction. The following are caulked, gasketed, weather-stripped or otherwise sealed with an air barrier material, suitable film, or solid material:</p> <p><i>Items 1, 4, 5, 6, 7, 10, 12 (as written)</i></p> <p><u>For existing buildings and where not renovated, modified, or newly installed, the following locations are permitted to be exempted from the requirement:</u></p> <p><i>Items 2, 3, 8, 9, 11 (as written)</i></p>
CC Reason:	Reformatted for clarity, as well as provided better direction for the treatment of existing buildings undergoing renovation.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A096	ID 8247	13.105.4 Energy metering	Final Formal Action: Accept as Modified
Submitter:	Karla Butterfield, Steven Winter Associates, Inc.		
Comment:	13.105.4 Energy metering. Energy metering <u>or monitoring of usage</u> shall be provided for each tenant individually for the non-residential portions . . .		
Reason:	Where individual metering isn't provided, an alternative way to monitor and affect usage seems reasonable.		
CC Action:	Accept as Modified		
CC Modification:	13.105.4 Energy metering. Energy metering <u>or monitoring device</u> shall be provided for each tenant <u>space</u> individually for the non-residential portions . . .		
CC Reason:	Clarity.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 25 Disapprove committee action: 0 Abstain: 2 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Joshua Robert Stack: Not sure this level of resolution is necessary. ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A097	ID 8248	13.105.11 Heated-water circulation and temperature maintenance	Final Formal Action: Accept
Submitter:	Karla Butterfield, Steven Winter Associates, Inc.		
Comment:	13.105.11.3 Controls for hot water storage. The controls on pumps that circulate water between a water heater and heated water storage tank shall limit the operation of the pump from the heating cycle startup to not greater than 5 minutes at <u>after</u> the end of the cycle.		
Reason:	Align the standard with code by changing "at" to "after." Current language reflects a substantive typo.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A098	ID 8244	13.105.12 Energy options	Final Formal Action: Accept as Modified
Submitter:	Carl Seville & Josh Hanson, SK Collaborative & US-EcoLogic		
Comment:	<p>13.105.12 Energy options. The non-residential portions of the building shall comply <u>be in accordance</u> with one of the three two options below <u>following</u>:</p> <p>13.105.12.1 The requirements of the ICC IECC Sections C402 through C405 and two selections from section <u>C406.</u></p>		

	<p>13.105.12.12 Energy requirements shall be met if Modeling in accordance with ICC IECC section C407 shows a 10% reduction in <u>demonstrating</u> that the entire building meets the energy efficiency requirement in the ICC IECC.</p> <p>13.105.12.23 Energy requirements shall be met if Modeling in accordance <u>with the requirements</u> of ASHRAE 90.1, Appendix G shows a 10% reduction in energy cost from the prescribed levels.</p> <p>13.105.12.32 Energy requirements shall be met if at least two options in ICC IECC Section C406 are met.</p>
Reason:	Eliminate this practice entirely. Energy efficiency compliance is addressed in 13.105.1
CC Action:	Accept as Modified
CC Modification:	<p>13.105.12 Energy options. The non-residential portions of the building shall comply <u>be in accordance</u> with one of the three two options below <u>following</u>:</p> <p>13.105.12.1 The requirements of the ICC IECC Sections C402 through C405 and two selections from section C406.</p> <p>13.105.12.12 Energy requirements shall be met if Modeling in accordance with ICC IECC section C407 shows a 10% reduction in <u>demonstrating</u> that the entire building meets the energy efficiency requirement in the ICC IECC.</p> <p>13.105.12.23 Energy requirements shall be met if Modeling in accordance <u>with the requirements</u> of ASHRAE 90.1, Appendix G shows a 10% reduction in energy cost from the prescribed levels.</p> <p>13.105.12.32 Energy requirements shall be met if at least two options in ICC IECC Section C406 are met.</p>
CC Reason:	Residential certification only requires meeting the energy code. Deleting this item improves consistency throughout the standard. Combined energy efficiency compliance with 13.105.1 per A093.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A099	ID 8255	13.106.1 Fitting and fixture consumption	Final Formal Action: Accept as Modified
Submitter:	Jonah Schein, WaterSense		
Comment:	Edits to table 13.106.1 as specified.		
Reason:	<p>Requiring the WaterSense label ensures that products have met EPA's performance criteria for user satisfaction in addition to efficiency. Adding the requirement here also keeps the commercial space requirements consistent with the requirements for residential spaced (which also reference the WaterSense performance criteria).</p> <p>Specifying the pressure is unnecessary. Pressure is specified as part of the WaterSense performance requirements. Metered faucets do not have pressure settings specified by the manufacturer. Manufacturer listed pressure in other plumbing products is governed by DOE standards.</p> <p>Multi-head/emitter shower compartments can dramatically increase the amount of water used in a shower.</p>		
CC Action:	Accept as Modified		
CC Modification:	13.106.1 Fitting and fixture consumption. Plumbing fixtures and fixture fittings shall comply with the maximum flow rates specified in Table 13.106.1 <u>and, where applicable, meet the performance criteria of the</u>		

WaterSense Specification. Plumbing fixtures and fixture fittings in Table 13.106.1 shall have a manufacturer’s designation for flow rate.

Exceptions: The following fixtures and devices shall not be required to comply with the reduced flow rates in Table 13.106.1: 1) Clinical sinks having a maximum water consumption of 4.5 gallons (17 L) per flush; 2) service sinks faucets, tub fillers, pot fillers, laboratory faucets, utility faucets, and other fittings designed primarily for filling operations; and 3) Fixtures, fittings, and devices whose primary purpose is safety.

Edit table as shown below.

TABLE 13.106.1

MAXIMUM FLOW RATES AND FLUSH VOLUMES FOR FIXTURES AND FIXTURES FITTING FIXTURE OR FIXTURE FITTING TYPE	MAXIMUM FLOW RATE OR FLUSH VOLUME & CERTIFICATION REQUIREMENTS
Showerhead ^a	2.0 gpm & WaterSense labeled <u>or equivalent performance criteria</u>
Lavatory faucet and bar sink-private	1.5 gpm & WaterSense labeled <u>or equivalent performance criteria</u>
Lavatory faucet-public (metering)	0.25 gpc ^{bd}
Lavatory faucet-public (non-metering)	0.5 gpm ^e
Kitchen faucet-private ^d	1.8 gpm ^e
Kitchen and bar sink faucets in other than dwelling units and guest rooms	2.2 gpm ^e
Urinal	0.5 gpf & WaterSense labeled <u>or equivalent performance standard</u> or nonwater urinal
Water closet	1.28 gpf ^e & WaterSense labeled <u>or equivalent performance criteria</u>
Prerinse Spray Valves	1.28 gpm
Drinking Fountains (manual)	0.7 gpm ^d
Drinking Fountains (metered)	0.25 gpc ^b ^c

a. Includes hand showers, body sprays, and rainfall panels. 2.0 GPM limit shall apply to cumulative flow of all devices located less than 96” apart in individual/two-person shower compartments or 35” apart in gang or group showers (as measured horizontally).

b. Gallons per cycle.

c. Bottle filling stations associated with drinking fountains shall not have limitations for flow rate.

d. Kitchen faucets may temporarily increase the flow above the maximum rate but not to exceed 2.2 gpm.

e. Shall meet ASME/CSA A112.18.1 or equivalent standard as determined by the Adopting Entity.

CC Reason: Consistency with performance criteria elsewhere in the standard and eliminating un-verifiable requirements.

Ballot 1 Results:
Eligible to vote: 29
Approve committee action: 26

	Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A100	ID 8254	13.106.4 Food Service	Final Formal Action: Accept
Submitter:	Jonah Schein, WaterSense		
Comment:	13.106.4.3 Pre-rinse spray heads. Food service pre-rinse spray heads shall have a manufacturer's designation of flow rate, shall comply with the maximum flow rate in Table 1305.1, and shall shut off automatically when released.		
Reason:	There is no Table 1305.1 in the standard, making the requirement impossible to comply with. It is believed that table 1305.1 may be a reference to the Uniform Plumbing Code to specify required spray forces. These spray forces are required in the U.S. by DOE regulations, as are manufacturer designation of flow rates, and do not need to be reiterated here. For properties outside the U.S., it is highly unlikely that products not in compliance with U.S. regulations would provide spray force values, making this requirement unenforceable.		
CC Action:	Accept		
CC Modification:			
CC Reason:	No need to reiterate federal regulations. Deleted requirement impossible to field verify.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A101	ID 8249	13.106.6 Heat exchangers	Final Formal Action: Accept
Submitter:	Karla Butterfield, Steven Winter Associates, Inc.		
Comment:	13.106.6 Heat exchangers. Once-through or single-pass cooling with potable or municipal reclaimed water is prohibited. Heat exchangers shall be connected to a recirculating water system such as a chilled water loop, cooling tower loop, or similar recirculating system.		
Reason:	This is a water savings measure which is easier to understand with the first charging sentence alone. Adding examples confuses the requirement.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A102	ID 8253	13.107.5 Protection of HVAC system openings	Final Formal Action: Accept as Modified
Submitter:	Karla Butterfield, Steven Winter Associates, Inc.		
Comment:	13.107.5 Protection of HVAC system openings. HVAC supply and return duct and equipment openings shall be protected during dust-producing operations of construction <u>or inspected and verified to be free from dust and debris at the time of register/diffuser installation.</u>		
Reason:	Verifying during the construction process may require several inspections. Adding the option for a visual inspection at the end of construction allows the verifier flexibility but still ensures the duct systems are free from dust and debris.		
CC Action:	Accept as Modified		
CC Modification:	13.107.5 Protection of HVAC system openings. HVAC supply and return duct and equipment openings shall be protected during dust-producing operations of construction <u>or inspected and verified to be free from dust and debris after dust-producing activities are completed and prior to owner occupancy.</u>		
CC Reason:	Added timing for inspection.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A103	ID 8251	13.107.8 Building Ventilation Systems	Final Formal Action: Accept as Modified
Submitter:	Thomas Culp, Birch Point Consulting, Self		
Comment:	13.107.8.2 Air filters. Air filters with a minimum MERV rating of 6 13 are installed on central forced air systems and are accessible.		
Reason:	Addendum P to ASHRAE 189.1-2020 / 2021 International Green Construction Code addendum raised the requirement for particulate matter filters or air cleaners to MERV 13. California 2019 Title 24 which took effect Jan 2020 also requires MERV 13. Note: there are also references to MERV 8 in 902.2.3, 11.902.2.3, and 1205.11. This chapter 13 requirement may need to be coordinated with any action taken on those sections by other task groups.		
CC Action:	Accept as Modified		
CC Modification:	13.107.8.2 Air filters. Air filters with a minimum MERV rating of 6 13 are installed on <u>new</u> central forced air systems and are <u>readily</u> accessible <u>for maintenance.</u> <u>Note: Central forced air ducted systems should be designed to accommodate the pressure drop from a MERV 13 filter.</u>		
CC Reason:	Modified for clarity. Proposal makes the NGBS consistent with other industry standards while accommodating existing systems that may not function properly with a higher MERV filter.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A104	ID 8256	13.108.1 Operation and maintenance manuals for tenants	Final Formal Action: Accept as Modified
Submitter:	Josh Hanson, US-EcoLogic		
Comment:	<p>13.108.12 Operation and maintenance manuals for tenants. Manuals are provided to the initial tenants of the <u>core and shell spaces and non-residential spaces of a full mixed-use building</u> regarding the operation and maintenance of their <u>respective portions of the building</u>. Paper or digital format manuals are to include information regarding those aspects of the building’s maintenance and operation that are within the area of responsibilities of the respective tenant. One or more responsible parties are to receive a copy of all documentation for archival purposes.</p> <p>(1) A narrative detailing the importance of operating in a green building. This narrative is included in all responsible parties’ manuals.</p> <p>(2) A list of practices to conserve water and energy which require maintenance.</p> <p>(3) Information on opportunities to purchase renewable energy from local utilities or national green power providers.</p> <p>(4) Information on local and on-site recycling and hazardous waste disposal programs.</p> <p>(5) Local public transportation options for employees.</p> <p>13.108.21 Tenant finish out manual. Manuals are provided to the tenants of <u>core and shell non-residential spaces</u> prior to the start of construction regarding the design and construction of the non-residential portion of the building. Paper or digital format manuals are to include information regarding those aspects of the design and construction that are within the area of responsibilities of the respective tenant. One or more responsible parties are to receive a copy of all documentation for archival purposes.</p> <p>(1) Provisions of this Chapter verified <u>and NOT verified</u> at the time of building Certification for the respective non-residential space(s) that shall be maintained as part of the Tenant Finish Out.</p> <p>(2) Provisions of this Chapter NOT verified at the time of building Certification for the respective space that shall be included in the Tenant Finish Out Construction Documents.</p> <p>(3) A list of minimum green building material specifications that are to be included in the Tenant Finish Out Construction Documents based on the materials that were installed in the residential portion of the building.</p>		
Reason:	Flipped the sections to flow more with the construction process, added language to clarify tenant finish out pertaining to C&S style spaces while O&M manuals would apply to both C&S and non-res spaces in a full mixed-use building. Combined 1&2 under Tenant finish out manuals.		
CC Action:	Accept as Modified		
CC Modification:	<p>13.108.12 Operation and maintenance manuals for tenants. Manuals are available provided to the initial future tenants of the <u>core and shell spaces and non-residential spaces of a full mixed-use building</u> regarding the operation and maintenance of their <u>respective portions of the building</u>. Paper or digital format manuals are to include information regarding those aspects of the building’s maintenance and operation that are within the area of responsibilities of the respective tenant. One or more responsible parties are to receive a copy of all documentation for archival purposes.</p> <p>(1) A narrative detailing the importance of operating in a green building. This narrative is included in all</p>		

	<p>responsible parties' manuals.</p> <p>(2) A list of practices to conserve water and energy which require maintenance.</p> <p>(3) Information on opportunities to purchase renewable energy from local utilities or national green power providers.</p> <p>(4) Information on local and on-site recycling and hazardous waste disposal programs.</p> <p>(5) Local public transportation options for employees.</p> <p>13.108.21 Tenant finish out manual. Manuals are provided to the tenants of <u>core and shell non-residential spaces</u> prior to the start of construction regarding the design and construction of the non-residential portion of the building. Paper or digital format manuals are to include information regarding those aspects of the design and construction that are within the area of responsibilities of the respective tenant. One or more responsible parties are to receive a copy of all documentation for archival purposes.</p> <p>(1) Provisions of this Chapter verified <u>and NOT verified</u> at the time of building Certification for the respective non-residential space(s) that should be included shall be maintained as part of the Tenant Finish Out.</p> <p>(2) Provisions of this Chapter NOT verified at the time of building Certification for the respective space that shall be included in the Tenant Finish Out Construction Documents.</p> <p>(3) A list of minimum green building material specifications that are <u>recommended</u> to be included in the Tenant Finish Out Construction Documents based on the materials that were installed in the residential portion of the building.</p>
CC Reason:	Edited to clarify performance requirements and recommendations for all future fit-outs.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

Section 14 Referenced Documents

Additional TG Proposed Changes

A105	ID 8154	Section 14 Referenced Documents	Final Formal Action: Accept as Modified
Submitter:		Aaron Gary, Tempo, Inc.	
Comment:		<p>Update Chapter 14 to reflect the most current versions of the documents referenced in Chapter 6 and 9 practices.</p> <p>ISO – International Organization for Standardization www.iso.org</p> <p>DOCUMENT</p> <p>DATE</p> <p>TITLE</p> <p>SECTION</p> <p>16000-23</p> <p>2009<u>2018</u></p> <p><i>Indoor air – Part 23: Performance test for evaluating the reduction of formaldehyde <u>and other carbonyl</u> concentrations by sorptive building materials</i></p> <p>901.9, 11.901.9</p> <p>17025</p> <p>2005<u>2017</u></p> <p><i>General requirements for the competence of testing and calibration laboratories</i></p> <p>901.7, 901.8, 901.9.3, 901.10(1), 901.11, 901.12 11.901.7, 11.901.8, 11.901.9.3, 11.901.10(1), 11.901.11, 11.901.12</p>	
Reason:		Maintain the internal logic and structure of the NGBS Standard	
CC Action:		Accept as Modified	
CC Modification:		See A105 Supplemental Information.	
CC Reason:		Incorporated additional 1402 updates.	

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

NGBS Appendix B: Examples of Third-Party Programs For Indoor Environmental Quality

P094	ID 8037	APPENDIX B: EXAMPLES OF THIRD-PARTY PROGRAMS FOR INDOOR ENVIRONMENTAL QUALITY	Final Formal Action: Accept as Modified				
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)						
Comment:	Expand table to include ALL referenced product standards across all chapters, not just chapter 9.						
Reason:	Users of the NGBS often have questions about third-party programs for product labels included in Chapter 6.						
CC Action:	Accept as Modified						
CC Modification:	<p>See P094 Supplemental Information.</p> <p>Approve changes shown with the additional modifications shown below:</p> <p>B101.2 Scope. Appendix B provides examples of third-party programs <u>not explicitly identified</u> for indoor environmental quality <u>and accreditation</u> that can <u>could</u> be used to demonstrate compliance with the applicable provisions of this Standard.</p> <table border="1"> <tr> <td><u>606.1/11.606.1 Biobased products (g/h)</u></td> <td><u>Forest Stewardship Council (FSC)</u> <u>United States Department of Agriculture (USDA)</u> <u>Biopreferred</u></td> </tr> <tr> <td><u>606.2/11.606.2 Wood-based products</u></td> <td><u>Forest Stewardship Council (FSC)</u></td> </tr> </table>			<u>606.1/11.606.1 Biobased products (g/h)</u>	<u>Forest Stewardship Council (FSC)</u> <u>United States Department of Agriculture (USDA)</u> <u>Biopreferred</u>	<u>606.2/11.606.2 Wood-based products</u>	<u>Forest Stewardship Council (FSC)</u>
<u>606.1/11.606.1 Biobased products (g/h)</u>	<u>Forest Stewardship Council (FSC)</u> <u>United States Department of Agriculture (USDA)</u> <u>Biopreferred</u>						
<u>606.2/11.606.2 Wood-based products</u>	<u>Forest Stewardship Council (FSC)</u>						
CC Reason:	Agreed with concept, added additional programs.						
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>						
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.						

Additional TG Proposed Changes

A106	ID 8152	Appendix B	Final Formal Action: Accept as Modified
Submitter:	Aaron Gary, Tempo, Inc.		
Comment:	<p>Update Appendix B to reflect the most current versions of the documents referenced in Chapter 6 and 9 practices.</p> <p>TABLE B200(1)</p> <p>Examples of Third-party Certification Programs</p> <p>Related Section of Standard</p> <p>Examples of Third-party Certification Programs Compliant with the Corresponding Section</p> <p>901.67(2) <u>Carpets and carpet cushion,</u></p>		

	<p><u>11.901.7(2) Carpets and carpet cushion</u></p> <p>Carpet and Rug Institute’s (CRI) Green Label Plus Indoor Air Quality Program</p> <p>901.7 <u>(1)</u> Hard-surface flooring,</p> <p><u>11.901.7 (1) Hard-surface flooring</u></p> <p>UL GREENGUARD Gold Resilient Floor Covering Institute’s FloorScore Indoor Air Certification Program</p>
Reason:	Update the NGBS Standard references to the most recent versions.
CC Action:	Accept as Modified
CC Modification:	See A106 Supplemental Information.
CC Reason:	Updated Chapter 9 references.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

NGBS Appendix C: Accessory Structures

P095	ID 8029	APPENDIX C: ACCESSORY STRUCTURES	Final Formal Action: Accept
Submitter:	Michelle Foster, Home Innovation Research Labs (NGBS Green)		
Comment:	Change reference E202 to <u>C202</u>		
Reason:	Accessory Structures was changed from Appendix E to Appendix C with the 2020 version. Editorial changes were not fully implemented.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

Additional TG Proposed Changes

A107	ID 8241	Appendix C Accessory Structures	Final Formal Action: Accept as Modified
Submitter:	Carl Seville, SK Collaborative		
Comment:	C202 Conformance Criteria. Accessory Structures shall implement practices from <u>Sections 5 through 11 or Section 13, as applicable, Chapters 5 through 10</u> in accordance with Sections C202.1 through C202.7.		
Reason:	This change will expand flexibility for stand-alone buildings located on multifamily sites to conform with Appendix C (provided that they are accessory to and incidental to residential building(s)).		
CC Action:	Accept as Modified		
CC Modification:	Amend Appendix C as follows: C202 Conformance Criteria. Accessory Structures shall implement practices from <u>Sections 5 through 11 or Section 13, as applicable, Chapters 5 through 10</u> in accordance with Sections C202.1 through C202.7. Where applying Section 13 criteria, total accessory structure area shall be equal to or less than 50% of the gross floor area of the entire project.		
CC Reason:	Clarification and alignment with Section 101.2 Scope.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A108	ID 8250	Appendix C Accessory Structures	Final Formal Action: Accept as Modified
Submitter:	Carl Seville, SK Collaborative		
Comment:	Amend Appendix C as follows: C202 Conformance Criteria. Accessory Structures shall implement practices from <u>Sections 5 through 11 or Section 13, as applicable, Chapters 5 through 10</u> in accordance with Sections C202.1 through C202.7. <u>If</u>		

	<u>applying Section 13 criteria, total accessory structure area shall not exceed 50% of the gross floor area of the entire project.</u>
Reason:	This change will expand flexibility for stand-alone buildings located on multifamily sites to conform with Appendix C (provided that they are accessory to and incidental to residential building(s)).
CC Action:	Accept as Modified
CC Modification:	<i>Amend Appendix C as follows:</i> C202 Conformance Criteria. Accessory Structures shall implement practices from <u>Sections 5 through 11 or Section 13, as applicable, Chapters 5 through 10</u> in accordance with Sections C202.1 through C202.7. <u>Where applying Section 13 criteria, total accessory structure area shall be equal to or less than 50% of the gross floor area of the entire project.</u>
CC Reason:	Clarification and alignment with Section 101.2 Scope.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

NGBS Appendix D: Water Rating Index

P096	ID 8054	APPENDIX D: WATER RATING INDEX	Final Formal Action: Accept
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	<p>Renumber tables.</p> <p>Check numbering throughout.</p>		
Reason:	EDITORIAL CHANGES Appendix D table are labeled 1, 2, 4, 6, 7, 8, 9. This appears to be an editorial issue. There is no explanation for why tables 3 and 5 would be missing. In section D101.8(1), there are two items labeled "(a)." One of these should be corrected to "(c)."		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P097	ID 8047	D101.3 Capabilities	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	<p>Replace with the following:</p> <p>D101.3 Capabilities.</p> <p>1) The WRI addresses newly-constructed single-family homes, multifamily buildings, and the residential portions of mixed-use buildings.</p> <p>2) Multifamily buildings are evaluated as a whole; WRI scores are not available for individual dwelling or sleeping units.</p> <p>3) The WRI calculator cannot be used to evaluate the water use of commercial spaces.</p>		
Reason:	<p>SECTION D101.3 Capabilities The scope and building types noted in this section are in conflict with other sections of the NGBS standard. Appendix D D101.3(1) states the WRI methodology applies to both new and existing construction. However, the NGBS only references WRI within the New Construction and Single-Family Certified Paths. Appendix D 101.3(2) states that WRI calculations are available for (1) one- and two- family dwellings; (2) townhomes not more than three stories above grade in height; and (3) multifamily buildings as a whole building, or individual dwelling units provided that each unit has a separate water meter. This scope does not align with the definitions and compliance options included within Chapters 2 and 3. This section should be adjusted to identify that WRI is available for single-family homes, townhomes, and multifamily and mixed-used buildings (i.e., all buildings that are eligible for NGBS compliance under the New Construction and Single-Family Certified paths). Further, we believe that the story limit included within D101.3(2) was intended as a definition of what constitutes a townhome, rather than a true restriction of building eligibility. Per the IRC classification, all townhomes are at or below three stories. We find no building science reason to limit townhomes of a certain height. Finally, WRI scores should be issued for whole-building only, not individual units. This aligns with how NGBS compliance is assessed. Per Section 303 Green Buildings, residential buildings and the residential portions of mixed-use buildings are assessed in their entirety for compliance.</p>		

CC Action:	Accept as Modified
CC Modification:	<p><i>Replace Items (1) and (2) with the following:</i></p> <p>D101.3 Capabilities.</p> <p>1) _____ The WRI addresses newly-constructed single-family homes, townhouses, multifamily buildings, and the residential portions of mixed-use buildings.</p> <p>2) _____ Multifamily buildings are evaluated as a whole; WRI scores are not available for individual dwelling or sleeping units.</p> <p>3) _____ The WRI calculator cannot be used to evaluate the water use of commercial spaces.</p>
CC Reason:	Did not want to limit WRI to only new construction.
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P098	ID 8055	D101.5 Computer Water Rating Index	Final Formal Action: Accept
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	See P098 Supplemental Information.		
Reason:	SECTION D101.5 COMPUTE WATER RATING INDEX Appendix D D101.5 states “The WRI shall be computed as a percentage of the combined indoor and outdoor water use in relation to the combined indoor and outdoor water baseline.” Appendix D, as written, does not address common areas; however, in most other areas of the NGBS, all residential portions of a multifamily building, including residential common areas, are evaluated for compliance. Add an additional section that addresses Indoor Common Areas. The values water volume and use factors included within the proposal attached are derived largely from The Handbook of Water Use and Conservation.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P099	ID 8050	D101.6 Indoor Water	Final Formal Action: Accept
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	Delete all three sub-items.		
Reason:	SECTION D101.6(5)(b)((ii)(1-3) BASELINE STRUCTURAL WASTE Appendix D includes three exceptions for the Estimated Vertical Pipe equation within the Baseline Structural Waste section. (1) Add half floor height for one story house with crawlspace and water heater on first floor or in garage (2) Add half floor height for 1 story		

	with slab (3) Subtract 1 floor height for 2 story slab on grade The intent of these exceptions is unclear. Further, inclusion of these exceptions would instill inconsistencies between the baseline and verified calculations, as similar construction details are not reflected in the verified structural waste equation.
CC Action:	Accept
CC Modification:	
CC Reason:	
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P100	ID 8051	D101.6 Indoor Water	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	Replace with the following: Verify no leaks.		
Reason:	SECTION D101.6(6)(iv) OTHER WATER USE Appendix D considers verified leaks within the Other Water Use section. As the NGBS only includes WRI for newly-constructed buildings, it is inappropriate to allow verified leaks to be factored into water use calculations. In order to earn a certified WRI score, a building should be verified to have no leaks.		
CC Action:	Accept as Modified		
CC Modification:	(iv) Verified Leaks shall be included as a direct use item. The baseline is no leaks. Leaks are included in both baseline and actual if verified as present for existing or final ratings. Verify leaks are not present.		
CC Reason:	Clarified section and intended change is shown in legislative format.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P101	ID 8049	D101.6 Indoor Water	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	Within Table 1, change the Baseline VolumePerOccupant for Clothes Washers from 7.41 to 17.41.		
Reason:	Table 1. WATER USE FOR BASELINE AND VERIFIED DEVICES Table 1 in Appendix D identifies baseline water volume per occupant per day for each device and expected uses for the devices per occupant per day. Home Innovation identified that this table includes an error related to clothes washer water volume. As written, the baseline volume per occupant is 7.41. This value is missing a '1' in front. The correct value should be '17.41.' The 7.41 value is unrealistically low, given that most high-efficiency clothes washer are between 15 and 30 gallons. Per capita water use from clothes washer is presently 16 gallons/person/day, but it was as high as 21 gallons/person/day before 1980. A value of 17.41 would put the baseline around the estimate daily use by Americans around 1985. That is a more reasonable value for a representation of "typical" home water use.		
CC Action:	Accept as Modified		

CC Modification:	Within Table 1, change the Baseline VolumePerOccupant for Clothes Washers from 7.41 to <u>20.28</u> .
CC Reason:	Volume per Occupant value is based on 0.78 uses per day from table and the minimum federal efficiency standard of 6.5 IWF.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P102	ID 8048	D101.6 Indoor Water	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	<p>For multifamily, user should enter the total number of 0/1-bedroom, 2-bedroom, 3-bedroom, and 4-bedroom units. The Number of Occupants should be calculated based on those inputs.</p> <p>For group living, users should enter a bedroom value based on the total expected number of occupants to per unit. For example, a 2-bedroom unit planned to house 4 individuals would be entered as a 3-bedroom unit.</p>		
Reason:	SECTION D101.6(2) Indoor Water Appendix D includes the following equation for calculating Number of Occupants: "NumOccupants = bedrooms + 1". As written, Appendix D did not identify how to extend this equation to multifamily buildings. It also did not include guidance regarding how Number of Occupants would be calculated in the case of group living (e.g., dormitories and independent living facilities), where it cannot be assumed that there will be a master bedroom with two occupants.		
CC Action:	Accept as Modified		
CC Modification:	<p><u>For multifamily, user should enter the total number of 0/1-bedroom, 2-bedroom, 3-bedroom, and 4-bedroom units. The Number of Occupants should be calculated based on those inputs.</u></p> <p><u>For group living, users should enter a bedroom value based on the total expected number of occupants to per unit. For example, a 2-bedroom unit planned to house 4 individuals would be entered as a 3-bedroom unit.</u></p> <p><u>In case of places like dormitories, student housing or places that don't have a defined bedroom, the number of occupants can be calculated based on the number of expected occupants. For such places, we can project the expected number of occupants using previous data.</u></p>		
CC Reason:	Comment statement modified		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P103	ID 8069	D101.7 Water Capture for Potential Reuse	Final Formal Action: Disapprove
Submitter:	Heather Schrock, Self		
Comment:	<p>Add a new section following D101.7 Water Capture for Potential Reuse:</p> <p>D101.7(2) Water Restoration Credits (WRCs)</p>		

	<p>(a) As an alternative to on-site capture for reuse, Water Restoration Certificates (WRCs) can be applied as an offset.</p> <p>(b) The total volume (gallons) of WRCs is applied directly against the water use calculations, first to offset indoor water, and then to offset outdoor water.</p> <p>see https://www.b-e-f.org/programs/water-restoration-certificates/ for more information about Water Restoration Certificates.</p>
Reason:	Reason Statement: In some jurisdictions, builders do not have the option to apply on-site captured water to offset water usage. As an alternative, these builders should have the option to apply Water Restoration Credits as a credit against indoor and outdoor water use in the calculation of a WRI score.
CC Action:	Disapprove
CC Modification:	
CC Reason:	Need more information on the availability of this credit type. Appears proprietary and not well-defined across multiple organizations
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>
Ballot 1 Comments:	<p>ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.</p> <p>APPROVE - Joshua Robert Stack: should not be proprietary.</p>

P104	ID 8056	D101.7 Water Capture for Potential Reuse	Final Formal Action: Accept as Modified
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	See attached.		
Reason:	SECTION D101.7 WATER CAPTURE FOR POTENTIAL REUSE Appendix D provides incomplete information about the appropriate applications of captured water. Not all indoor and outdoor water uses are identified as potential applications for captured water. As written, the methodology does not allow a building to achieve a score as low as 0; not all water uses can be offset by captured water.		
CC Action:	Accept as Modified		
CC Modification:	<p><i>Within each row of the table of the Proposed Change, add the following:</i></p> <p>Other Uses as approved by the Authority Having Jurisdiction (AHJ)</p> <p>Delete Blackwater row from table.</p>		
CC Reason:	Blackwater has no permitted direct use, but it could be treated onsite to a level suitable for uses by the AHJ.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

P105	ID 8053	D101.8 Outdoor Calculations	Final Formal Action: Disapprove
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	Add the following: Effective rainfall is calculated as 25% of the monthly rainfall.		
Reason:	SECTION D101.8(1)(b) LANDSCAPE WATER USE Within the equation for LandscapeWaterUse, the value “EffectiveRainfall(month)” is included. This term is not defined within Appendix D, and no calculations are provided to explain how it is to be derived. Initially, Home Innovation applied the full monthly rainfall values from the data set. This was found to be problematic. For certain areas with hot, wet climate, the WRI scoring tool was calculating unrealistic savings (up to 90%, and in some cases 100%), depending on the outdoor area, irrigation method used, and plant type entered, without any data entered for indoor water use. As the contribution of outdoor water use significantly outstripped that of indoor water use, the application of an effective rainfall factor was deemed necessary. Investigations revealed that such unrealistic savings resulted from the full rainfall value being applied, rather than a fraction. When the full rainfall values were applied, the difference between evapotranspiration and rainfall more often resulted in a negative number or an exact zero (i.e., the rainfall received is more than the evapotranspiration of the plants and there is no need of supplying water through irrigation). This translated to very little outdoor water use and subsequently massive savings from little to no water efficient features being implemented outdoors. The American Society of Agricultural and Biological Engineers (ASABE) ANSI/ASABE S623.1 JAN2017 Determining Landscape Plant Water Demands introduced the concept of “effective” rainfall. A large portion of a rain event cannot be used by plants. Short, extreme burst results in more water being washed away before infiltrating the soil. “Effective rainfall” is an estimate of the amount of water that can be useful to plants. ANSI/ASABE S623.1 applies a 50% rainfall effectiveness factor. The EPA WaterSense Water Budget Tool applies a 25% rainfall effectiveness factor. The WaterSense Water Budget Approach summary document notes that this factor “leads to a more conservative landscape design” and that “this landscape design will be more resilient in drier-than-average years or periods of unexpected drought. To generate WRI scores that are more representative of actual water use, especially in hot and wet climates, we suggest that a 25% rainfall effectiveness factor be applied.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	25% is an unrealistic number in most cases. Further investigation required. The number can vary widely.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. APPROVE - Joshua Robert Stack: Need more info.		

P106	ID 8052	D101.8 Outdoor Calculations	Final Formal Action: Disapprove
Submitter:	Cindy Wasser, Home Innovation Research Labs (NGBS Green)		
Comment:	Replace with the following: Water Months = 12 – (Number of Frost Days in a year / 30), rounded to the nearest whole month		
Reason:	SECTION D101.8(2a) WATER MONTHS Appendix D D101.8(2a) says, “To define the water months, take the number of frost days in a year, divide by twelve, and round to the nearest whole month.” Home Innovation identified that the WRI equation for watering months did not yield a usable number.		
CC Action:	Disapprove		
CC Modification:			

CC Reason:	In favor of action on A120.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues. APPROVE - Joshua Robert Stack: Need more info.

Additional TG Proposed Changes

A109	ID 8257	Appendix D: Water Rating Index	Final Formal Action: Accept
Submitter:	Olga Cano, TG4 Subgroup – Definitions		
Comment:	Master Bath Adjustment: <u>adjustment of indoor water use based on expected use of a separate master bathroom.</u> This item shall apply where there is a master bath. If the flow rate of the individual toilet, lavatory, or shower devices varies, then water use in the master bath and outside the master bath shall be computed separately.		
Reason:	Clarify section with additional context.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A110	ID 8258	Appendix D: Water Rating Index	Final Formal Action: Accept
Submitter:	Olga Cano, TG4 Subgroup – Definitions		
Comment:	Evapotranspiration: <u>sum of evaporation from soil evaporation from the capillary fringe of the groundwater table, and evaporation from water bodies on land, as well as transpiration from plants</u> <i>Include definition in Appendix D.</i>		
Reason:	Source: USGS		
CC Action:	Accept		
CC Modification:			
CC Reason:	Include definition within the section		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A111	ID 8176	Appendix D: Water Rating Index	Final Formal Action: Accept
Submitter:	Shannon Corcoran, TG4 Subgroup – Definitions		
Comment:	<p>The standard does not define “Pan Evaporation Rate”</p> <p>Modify Clause D101.6 (6)(c)(iii) as follows:</p> <p>(6) Other types of water use. OtherWaterUse (gallons/day) - other water fixture use for fixtures verified to be present</p> <p>(a) The baseline is zero, when device is not present</p> <p>(b) OtherWaterUse sums the water use for fixtures that are present</p> <p>(c) OtherWaterUse includes:</p> <ul style="list-style-type: none"> (i) Water use per manufacturer (gallons/day) <ul style="list-style-type: none"> (1) Water softeners (2) Humidifiers (3) Evaporative coolers (4) Water filters, except reverse osmosis (ii) Reverse osmosis water use shall be as specified by the manufacturer or shall default to a water waste of 4 times the water consumption <ul style="list-style-type: none"> (iii) Fountains and spas – water loss (gallons/day) = pan evaporation rate * area <p><u>Pan Evaporation Rate: value derived by dividing the volume of liquid that evaporated from the amount of time that it took to evaporate.</u></p> <p>(iv) VerifiedLeaks shall be included as a direct use item. The baseline is no leaks. Leaks are included in both baseline and actual if verified as present for existing or final ratings.</p> <p>(v) Where there are multiple fixtures or appliances of the same type, the baseline fixtures and appliances shall be assumed to all be of the same type, flow rate and water use rate.</p>		
Reason:	The term Outdoor Baseline is used in the calculation in D101.8, and needs a definition to provide clarification.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A112	ID 8177	Appendix D: Water Rating Index	Final Formal Action: Accept as Modified
Submitter:	Shannon Corcoran, TG4 Subgroup – Definitions		
Comment:	<p>The standard does not define “Outdoor Baseline”</p> <p>Modify Clause D101.8 as follows:</p> <p>D101.8 Outdoor Calculations. The annual outdoor water use shall be calculated as follows:</p> <p>OutdoorUse = LandscapeWaterUse + NonLandscapeWaterUse</p> <p>OutdoorBaseline(month) = Evapotranspiration(month) * LandscapeWaterArea(total) * 0.623 (gallons/sq ft of 1 in of rain) where LandscapeWaterArea(total) is the total of all the areas that are planted, irrigated, hand-watered or have a water feature like a pool.</p> <p><u>Outdoor Baseline: baseline outdoor water demand based on outdoor area and local evapotranspiration rates.</u></p>		
Reason:	The term Outdoor Baseline is used in the calculation in D101.8, and needs a definition to provide clarification.		
CC Action:	Accept as Modified		
CC Modification:	<u>Outdoor Baseline: baseline outdoor water demand based on outdoor area and evapotranspiration rates.</u>		
CC Reason:	Removed “local” to be more concise.		
Ballot 1 Results:	<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A113	ID 8174	Appendix D: Water Rating Index	Final Formal Action: Accept as Modified
Submitter:	Olga Cano, EPA WaterSense		
Comment:	<p>$NonLandscapeWaterUse = (Evapotranspiration(in)_{(annual)} * CoverFactor) * Pool/Spa/Fountain Area (square feet) * 0.623 (gallons/sq ft of 1 in of water)$</p> <p><u>Where CoverFactor = 0.70 if a motorized pool cover is installed.</u></p>		
Reason:	Under D101.8 (6), an equation needs to be provided for calculating NonLandscapeWaterUse that includes the sum of areas of all outdoor water features (e.g., pool, spas, fountains);		
CC Action:	Accept as Modified		
CC Modification:	<p>$NonLandscapeWaterUseBaseline = (Evapotranspiration(in)_{(annual)} * Pool/Spa/Fountain Area (square feet) * 0.623 (gallons/sq ft of 1 in of water)$</p> <p>$NonLandscapeWaterUseVerified = (Evapotranspiration(in)_{(annual)} * CoverFactor) * Pool/Spa/Fountain Area (square feet) * 0.623 (gallons/sq ft of 1 in of water)$</p> <p><u>Where CoverFactor = 0.70 if an automatic motorized pool cover is installed.</u></p>		
CC Reason:	Equation for non-landscape was not included and wanted to include it. Reformatted for consistency and added word “automatic” to ensure that efficiency was gained from the installation of the pool cover.		

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A114	ID 8175	Appendix D: Water Rating Index	Final Formal Action: Accept
Submitter:	Shannon Corcoran, TG4 Subgroup – Definitions		
Comment:	<p>Currently, the standard allows for black water to be used (untreated/unfiltered) for irrigation purposes. He proposal remove black water as an acceptable source of water</p> <p>D101.3 Capabilities. The WRI calculation shall include the following capabilities</p> <p>(4) Building water use shall be reduced based on the water capture and reuse. Where a specific type of water capture and reuse would violate local laws or ordnances, the amount of water capture and reuse for that specific type shall be zero.</p> <p>(a) The water types for capture and reuse shall be:</p> <p>(i) Rainwater, which is natural precipitation that falls on a structure.</p> <p>(ii) Sitewater, which is natural precipitation that falls on the ground, softscapes, and hardscapes.</p> <p>(iii) Greywater, which is untreated wastewater that has not come into contact with toilet waste, kitchen sink waste, dishwasher waste or similarly contaminated sources:</p> <p>(1) Only wastewater from bathtubs, showers, lavatories, and clothes washers shall be used in the greywater offset calculation.</p> <p>(2) If no filtration/purification system and properly sized tank is present, then greywater shall only be used outdoors as subsurface irrigation.</p> <p>(iv) Blackwater, which is the liquid and waterborne waste that would be permitted without special treatment into either the public sewer or a private sewage disposal system.</p> <p>D101.7 Water Capture for Potential Reuse. This calculates the water available for reuse for each month.</p> <p>(1) RainwaterCapture, and GreywaterCapture, and BlackwaterCapture shall be computed for each month.</p> <p>(c) BlackwaterCapture(month) – in gallons/month</p> <p>= (ToiletWater(verified) + FaucetWater(verified)) * DaysInMonth(month)</p> <p>(d) To get credit for reuse of captured rainwater, <u>and</u> greywater and blackwater:</p> <p>(v) Reuse of rainwater, <u>and</u> greywater and blackwater shall not receive credit in violation of ordinances or other regulations.</p>		

Reason:	The use of black water as a source of irrigation water poses a health risk by exposing consumers to untreated human waste. All black water should be disposed of through a waste disposal system (municipal sewage system or septic tank).
CC Action:	Accept
CC Modification:	
CC Reason:	
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A115	ID 8164	Appendix D: Water Rating Index	Final Formal Action: Accept
Submitter:	Olga Cano, EPA WaterSense		
Comment:	Under D101.6 (1), the "IndoorUse" equation also needs to be multiplied by 365 days/year (similar to the "IndoorBaseline").		
Reason:	Multiplier is missing		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A116	ID 8167	Appendix D: Water Rating Index	Final Formal Action: Accept
Submitter:	Olga Cano, EPA WaterSense		
Comment:	Update Table 4 values as follows: Clothes Washer 9.5 <u>6.5</u> IWF, 4 CF (ft2) Dishwasher 6.5 <u>5</u> gallon/ cycle		
Reason:	These defaults are consistent with current DOE regulations (https://www.ecfr.gov/current/title-10/chapter-II/subchapter-D/part-430/subpart-C/section-430.32)		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0		

	Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A117	ID 8168	Appendix D: Water Rating Index	Final Formal Action: Accept as Modified
Submitter:	Olga Cano, EPA WaterSense		
Comment:	$\left(\left[\text{Evapotranspiration}_{(\text{month})} * \text{PlantFractionEvapotranspiration}_{(\text{zone})} \right] - \text{EffectiveRainfall}_{(\text{month})} \right) * \text{LandscapeArea}_{(\text{zone})} * \left(\left[1 - \text{IrrigationControllerReduction}_{(\text{zone})} \right] / \text{IrrigationEfficiency}_{(\text{zone})} \right) * 0.623 \text{ (gallons/sq ft of 1 in of rain water)}$		
Reason:	The equation for LandscapeWaterUse needs to be fixed to include proper parentheses.		
CC Action:	Accept as Modified		
CC Modification:	$\left(\left[\text{Evapotranspiration}_{(\text{month})} * \text{PlantFractionEvapotranspiration}_{(\text{zone})} \right] - \text{EffectiveRainfall}_{(\text{month})} \right) * \text{LandscapeArea}_{(\text{zone})} * \left(\left[1 - \text{IrrigationControllerReduction}_{(\text{zone})} \right] / \text{IrrigationEfficiency}_{(\text{zone})} \right) * 0.623 \text{ (gallons/sq ft of 1 in of water)}$		
CC Reason:	Put into legislative format		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A118	ID 8169	Appendix D: Water Rating Index	Final Formal Action: Accept as Modified
Submitter:	Olga Cano, EPA WaterSense		
Comment:	(a) (c) Multiple physical zones with the same values for Evapotranspiration, IrrigationEfficiency and IrrigationControllerReduction shall be permitted to be combined into one zone with LandscapeArea being the sum of the areas of those zones		
Reason:	Third bullet point is mislabeled.		
CC Action:	Accept as Modified		
CC Modification:	(c) Multiple physical zones with the same values for Evapotranspiration, IrrigationEfficiency and IrrigationControllerReduction shall be permitted to be combined into one zone with LandscapeArea being the sum of the areas of those zones		
CC Reason:	Put into legislative format		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A119	ID 8170	Appendix D: Water Rating Index	Final Formal Action: Accept as Modified
Submitter:	Olga Cano, EPA WaterSense		
Comment:	<i>Modify D101.8 Outdoor Calculations (1) as follows:</i> <u>(d) Effective Rain Definition (TBD) (suggested as 25% of total rainfall).</u>		

Reason:	Effective rain is included in the equation but it is not defined. Reference ASABE 623 definition; Percentage needs to be justified based on soil characteristics, ect; WERS uses 25% as well.
CC Action:	Accept as Modified
CC Modification:	<p style="color: red;">LandscapeWaterUse = For each month that is a water month and for each landscape zone sum $([Evapotranspiration(month) * PlantFractionEvapotranspiration(zone)] - EffectiveRainfall(month)) * LandscapeArea(zone) * (1 - IrrigationControllerReduction)(zone) / IrrigationEfficiency(zone) * 0.623$ (gallons/sq ft of 1 in of rain)</p> <p style="color: red;"><u>EffectiveRainfall: 25% of total rainfall</u></p>
CC Reason:	More informative to include definition directly within Appendix text.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A120	ID 8171	Appendix D: Water Rating Index	Final Formal Action: Accept as Modified
Submitter:	Olga Cano, EPA WaterSense		
Comment:	(a) To define the watering months, take the number of frost <u>non-frost</u> days in a year, divide by twelve <u>thirty</u> , and round to the nearest whole month.		
Reason:	Regions with no frost days ie Scottsdale would result in unusable number (365-frost days) metric is available in this manner; Creates monthly figure.		
CC Action:	Accept as Modified		
CC Modification:	<u>Water Months = (Number of Non- Frost Days in a year / 30), rounded to the nearest whole month</u>		
CC Reason:	Consistent with action on with P106.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A121	ID 8173	Appendix D: Water Rating Index	Final Formal Action: Accept as Modified
Submitter:	Olga Cano, EPA WaterSense		
Comment:	(ii) An <u>A WaterSense labeled irrigation controller that integrates daily weather or soil moisture tracking shall be a 10% IrrigationControllerReduction</u>		
Reason:	WaterSense label assures performance and efficiency. Simple way for verifier to determine product meets requirements/ criteria.		
CC Action:	Accept as Modified		
CC Modification:	A WaterSense labeled <u>irrigation controller or equivalent, in efficiency and performance criteria to the EPA WaterSense Specification for Irrigation Controllers, that integrates daily weather or soil moisture tracking shall be a 10% IrrigationControllerReduction.</u> An irrigation controller that integrates daily weather tracking shall be a 10% IrrigationControllerReduction.		

CC Reason:	Put into legislative format. The EPA Specification is clear but it might be possible that other products meet the criteria but are not labeled as such.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A122	ID 8165	Appendix D: Water Rating Index	Final Formal Action: Accept
Submitter:	Olga Cano, EPA WaterSense		
Comment:	D101.6 (4) Table 1, complete calculations are not provided for dishwashers and clothes washers. For dishwasher, the 0.26 uses /day / per occupant must be multiplied by the device gallons per cycle. For clothes washers, the 0.78 uses / day / occupant needs to be multiplied by the IWF and the clothes washer capacity. Proposed Change: Dishwasher: (0.26 uses /day / per occupant) * <u>GPC</u> Clothes Washers: (0.78 uses / day / occupant) * <u>IWF*CF</u>		
Reason:	Multipliers is missing		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A123	ID 8166	Appendix D: Water Rating Index	Final Formal Action: Accept
Submitter:	Olga Cano, EPA WaterSense		
Comment:	(iii) Fountains and spas – water loss (gallons/day) = <u>(annual pan evaporation rate * area) / 365</u>		
Reason:	Pan evaporation rate is usually provided in monthly or annual terms.		
CC Action:	Accept		
CC Modification:			
CC Reason:			
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A124	ID 8172	Appendix D: Water Rating Index	Final Formal Action: Accept as Modified
Submitter:	Olga Cano, EPA WaterSense		
Comment:	(d) IrrigationControllerReduction(zone) is irrigation water reduction based on a verified <u>irrigation controllers</u> weather-based irrigation controller:-		
Reason:	rain sensors are not necessarily considered weather-based irrigation controllers,		
CC Action:	Accept as Modified		
CC Modification:	(d) IrrigationControllerReduction(zone) is irrigation water reduction based on a verified weather-based irrigation controller:		
CC Reason:	Edited to better reflect original text		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

New Tropical Zone Section

Additional TG Proposed Changes

A125	ID 8225	New Tropical Zone Section	Final Formal Action: Accept as Modified
Submitter:		Steve Armstrong, Performance Point	
Comment:		<p>Make a sub chapter 707 for Tropical</p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i></p>	
Reason:		Many Tropical zone buildings utilize different construction types than buildings that are typically a 100% conditioned. Making a separate section for Tropical clarifies the Tropical section	
CC Action:		Accept as Modified	
CC Modification:		See A125 Supplemental Information.	
CC Reason:		Rewrite of the tropical zone section.	
Ballot 1 Results:		<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p> <p>Abstain: 1</p> <p>Non-voting: 2</p>	
Ballot 1 Comments:		ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.	

A126	ID 8226	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:		Howard Wiig, Hawaii State Energy Office	
Comment:		<p><u>707.1 Mandatory Practices</u></p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i></p>	
Reason:		This section shall start with title "707.1 Mandatory Practices"	
CC Action:		Disapprove	
CC Modification:			
CC Reason:		If favor of action on A125.	
Ballot 1 Results:		<p>Eligible to vote: 29</p> <p>Approve committee action: 26</p> <p>Disapprove committee action: 0</p>	

	Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A127	ID 8209	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:	Howard Wiig, Hawaii State Energy Office		
Comment:	<p><u>707.1.2 High-efficacy lighting</u></p> <p><u>All lamps shall have an efficacy of not less than 65 lumens per watt, or luminaires shall have an efficacy of not less than 45 lumens per watt.</u></p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i></p>		
Reason:	Adding stand alone Tropical Zone Section.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	If favor of action on A125.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A128	ID 8210	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:	Howard Wiig, Hawaii State Energy Office		
Comment:	<p><u>707.1.3 Attics</u></p> <p><u>Where attics are present, attics above the insulation are vented and attics below the insulation are unvented</u></p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i></p>		
Reason:	Adding stand alone Tropical Zone Section		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	If favor of action on A125.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26		

	Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A129	ID 8211	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:	Howard Wiig, Hawaii State Energy Office		
Comment:	<p><u>707.1.4 Roofs</u></p> <p><u>Roof Surfaces have a slope of not less than ¼ unit vertical in 12 units horizontal (21 -percent slope). The finished roof does not have water accumulation areas</u></p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i></p>		
Reason:	Adding stand alone Tropical Zone Section.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	If favor of action on A125.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A130	ID 8213	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:	Howard Wiig, Hawaii State Energy Office		
Comment:	<p><u>707.1.5 Operable Fenestration</u></p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i></p>		
Reason:	This section shall start with title "707.1.5 Operable Fenestration "		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	If favor of action on A125.		

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A131	ID 8212	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:	Howard Wiig, Hawaii State Energy Office		
Comment:	<p><u>707.1.5.1 Ventilation area</u></p> <p><u>Operable fenestration provides a ventilation area of not less than 14 percent of the floor area in each room. Alternatively, equivalent ventilation is provided by a ventilation fan</u></p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i></p>		
Reason:	Adding stand alone Tropical Zone Section.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	If favor of action on A125.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A132	ID 8214	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:	Howard Wiig, Hawaii State Energy Office		
Comment:	<p><u>707.1.5.2 Bedroom Exterior Walls</u></p> <p><u>Bedrooms with exterior walls facing two different directions have operable fenestration on exterior walls facing two directions</u></p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i></p>		
Reason:	Adding stand alone Tropical Zone Section.		
CC Action:	Disapprove		
CC Modification:			

CC Reason:	If favor of action on A125.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A133	ID 8215	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:	Howard Wiig, Hawaii State Energy Office		
Comment:	<p><u>707.1.5.3 Glazing in conditioned space</u></p> <p><u>Glazing in conditioned spaces has a solar heat gain coefficient (SHGC) as described in Table 707.3, or has an overhang with a projection factor equal to or greater than 0.30</u></p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i></p>		
Reason:	Adding stand alone Tropical Zone Section.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	If favor of action on A125.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A134	ID 8216	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:	Howard Wiig, Hawaii State Energy Office		
Comment:	<p><u>707.1.6 Interior doors</u></p> <p><u>Bedroom doors are capable of being secured in the open position.</u></p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i></p>		
Reason:	Adding stand alone Tropical Zone Section.		
CC Action:	Disapprove		

CC Modification:	
CC Reason:	If favor of action on A125.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A135	ID 8217	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:	Howard Wiig, Hawaii State Energy Office		
Comment:	<u>707.2 ADDITIONAL PRACTICES</u> <i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i>		
Reason:	This section shall start with title "707.2 ADDITIONAL PRACTICES"		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	If favor of action on A125.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A136	ID 8218	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:	Howard Wiig, Hawaii State Energy Office		
Comment:	<u>707.2 Water Heater.</u> <u>Renewable Energy source is used for service water heating in accordance with Table 707.2(1)</u> <p style="text-align: center;"><u>Table 707.2(1)</u></p> <p style="text-align: center;"><u>Renewable Energy for Service Water Heater</u></p> <p style="text-align: center;">= 80% > 80%</p> <p style="text-align: center;"><u>Silver</u> <u>Gold</u></p> <i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed</i>		

	<i>Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i>
Reason:	Adding stand alone Tropical Zone Section.
CC Action:	Disapprove
CC Modification:	
CC Reason:	If favor of action on A125.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A137	ID 8219	New Tropical Zone Section	Final Formal Action: Disapprove								
Submitter:	Howard Wiig, Hawaii State Energy Office										
Comment:	<p><u>707.3 Glazing. Solar Heat Gain Coefficient (SHGC).</u></p> <p>All glazing in conditioned spaces has an SHGC according to Table 707.3 below:</p> <table border="1"> <tr> <th colspan="2">Table 707.3</th> </tr> <tr> <th colspan="2">Solar Heat Gain Coefficient SHGC</th> </tr> <tr> <td><u>0.26 - 0.4</u></td> <td><u>= 0.25</u></td> </tr> <tr> <td><u>Silver</u></td> <td><u>Gold</u></td> </tr> </table> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i></p>			Table 707.3		Solar Heat Gain Coefficient SHGC		<u>0.26 - 0.4</u>	<u>= 0.25</u>	<u>Silver</u>	<u>Gold</u>
Table 707.3											
Solar Heat Gain Coefficient SHGC											
<u>0.26 - 0.4</u>	<u>= 0.25</u>										
<u>Silver</u>	<u>Gold</u>										
Reason:	Adding stand alone Tropical Zone Section.										
CC Action:	Disapprove										
CC Modification:											
CC Reason:	If favor of action on A125.										
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2										
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.										

A138	ID 8220	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:	Howard Wiig, Hawaii State Energy Office		
Comment:	<p><u>707.4 Roof.</u></p> <p><u>(1) The exterior roof surface complies with a least one of the following practices below..... Silver</u></p> <p>a) <u>Minimum roof reflectance and emittance of 0.55 and 0.75 respectively</u></p> <p>b) <u>Minimum roof reflectance index of 64</u></p> <p>c) <u>Roof or Ceiling has insulation with an R-Value of R-13 or greater</u></p> <p>d) <u>Includes a radiant barrier</u></p> <p><u>(2) The exterior roof surface complies with an additional practice above..... Gold</u></p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i></p>		
Reason:	Adding stand alone Tropical Zone Section.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	If favor of action on A125.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A139	ID 8221	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:	Steve Armstrong, Performance Point		
Comment:	<p><u>707.5 Ceiling Fans</u></p> <p><u>(1) A ceiling fan rough-in is provided for bedrooms and the largest space that is not used as a bedroom..... Silver</u></p> <p><u>(2) A ceiling fan is provided for bedrooms and the largest space that is not used as a bedroom..... Gold</u></p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i></p>		
Reason:	Adding stand alone Tropical Zone Section.		

CC Action:	Disapprove
CC Modification:	
CC Reason:	If favor of action on A125.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A140	ID 8222	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:	Steve Armstrong, Performance Point		
Comment:	<p>707.6 Photovoltaic System. <u>The residence includes a minimum of 2kW of PV and a minimum of 6kWh of battery storage.....Gold</u></p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i></p>		
Reason:	Adding stand alone Tropical Zone Section.		
CC Action:	Disapprove		
CC Modification:			
CC Reason:	If favor of action on A125.		
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2		
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.		

A141	ID 8223	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:	Steve Armstrong, Hawaii State Energy Office		
Comment:	<p>707.7. Air Conditioning. <u>All installed air conditioners have a minimum of 18 SEER.....Gold</u></p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i></p>		
Reason:	Adding stand alone Tropical Zone Section.		
CC Action:	Disapprove		
CC Modification:			

CC Reason:	If favor of action on A125.
Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

A142	ID 8224	New Tropical Zone Section	Final Formal Action: Disapprove
Submitter:	Steve Armstrong, Performance Point		
Comment:	<p><u>707.8. Walls.</u></p> <p><u>Walls comply with at least one of the following:</u></p> <p>a) <u>Walls have an overhang with a projection factor equal to or greater than 0.30.</u></p> <p>b) <u>Walls have insulation with an R-value of R-13 or greater.</u></p> <p>c) <u>Walls have a minimum initial solar reflectance of 0.64 measured in accordance with the CRRC-2 Wall Rating Program.</u></p> <p><i>(Subparts #8 through #9 remain unmodified)</i></p> <p>Section 14</p> <p>REFERENCED DOCUMENTS</p> <p>1402.0 Referenced Documents</p> <p><i>(Modify as shown below)</i></p> <p><u>Cool Roof Rating Council Documents</u></p> <p>DOCUMENT</p> <p>DATE</p> <p>TITLE</p> <p>SECTION</p> <p><u>CRRC-2</u></p> <p><u>2022</u></p> <p><u>CRRC-2 Wall Product Rating Program Manual</u></p> <p><u>701.1.6(7)</u></p> <p><i>Staff Note: At the request of the Consensus Committee the TG is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group.</i></p>		

	<i>The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown in Tropical Zone Supplemental Information.</i>
Reason:	<p>Problem Statement: The current exterior wall provisions in the ICC 700 standard include a requirement to meet a single solar reflectance value. It is not clear if the intent is to require only the installation of exterior wall products with a solar reflectance of 0.64 or to allow products that exceed this value. By only stating a single value, this greatly reduces the number of eligible products that can be installed, including those that are more reflective. Furthermore, the existing requirement does not reference any standards or programs that would ensure that a product’s solar reflectance value is credible. The lack of a referenced standard or program also greatly reduces the ability for consumers to easily identify compliant products in the market. Proposal and Rationale: We recommend that the phrase “minimum initial” be included as shown in the proposal. Currently, the provision states that the wall product must have a solar reflectance value of 0.64. By not stating “minimum” solar reflectance of 0.64, it greatly reduces the number of products eligible for installation, including those that are more reflective. We recommend inserting “initial” to be consistent with the phrasing in the existing requirements for cool roofs in Sections 602.2 and 11.602.2 of ICC 700-2020. In addition, we propose adding a reference to the CRRC-2 Wall Product Rating Program Manual, a document that details the testing and labeling requirements of the CRRC Wall Rating Program. The manual was developed and vetted over a two-year period by a 27-member committee comprising 21 different organizations, including manufacturing and trade associations. Through the CRRC Wall Rating Program, manufacturers and sellers have the opportunity to get their wall products tested and labeled in accordance with the CRRC’s strict protocols outlined in the CRRC-2 Program Manual. The CRRC is a 501(c)(3) nonprofit organization established in 1998 to develop accurate and credible methods for evaluating and labeling the radiative properties of roofing products. The CRRC also provides education to the public on how cool roofs and solar-reflective walls can help improve building energy efficiency, increase occupant comfort, mitigate the impacts of the urban heat Island effect, and reduce greenhouse gas emissions. In 2018, the CRRC officially expanded the organization’s scope and mission to include the rating of exterior wall products. The CRRC worked closely with stakeholders from industry and end users on the development of the program over a two-year period. The program, which is the first and only in the world, officially launched on January 17, 2022. The CRRC Wall Rating Program is similar to the CRRC Roof Rating Program (CRRC-1), but with some technical differences. Please note that participation in the CRRC Wall Rating Program is separate and distinct from CRRC Membership. A wall product manufacturer is not required to be a member of the CRRC to have their product(a) tested and listed in accordance with the CRRC-2 Wall Rating Program Manual, which also includes listing in the free, online CRRC Rated Wall Products Directory (https://coolroofs.org/directory/wall). The CRRC-2 Wall Product Rating Program Manual includes: • Accredited testing laboratory requirements • Approved test farms weathering requirements • Testing requirements • Product rating and licensing requirements • Labeling requirements CRRC Rated Wall Products Directory: This is a free, online database that will list the initial and three-year aged solar reflectance and thermal emittance of exterior wall products. The directory will go live once wall products are initially rated. Products with only initial values will be listed through the duration of the three-year weathering process. The aged values will be added to the product listing after the weathering period is complete and aged testing performed. A CRRC product rating describes the radiative performance (solar reflectance and thermal emittance) of an exterior wall material; it does not indicate a ranking or approval. A product’s placement in the CRRC Rated Wall Products Directory does not mean that the product is “cool” as defined by any particular code or program. Only products with active ratings can be found in the Rated Wall Products Directory. Request to meet with ICC-700 Committee: The CRRC would appreciate the opportunity to speak with the ICC-700 consensus committee when this item is presented for consideration. Resources: A copy of CRRC-2 Wall Product Rating Program Manual can be downloaded at no charge from the following address: https://coolroofs.org/programs/wall-rating-program/all-forms-2 The CRRC Wall Rating Program can be seen at: https://coolroofs.org/programs/wall-rating-program</p>
CC Action:	Disapprove
CC Modification:	
CC Reason:	If favor of action on A125.

Ballot 1 Results:	Eligible to vote: 29 Approve committee action: 26 Disapprove committee action: 0 Abstain: 1 Non-voting: 2
Ballot 1 Comments:	ABSTAIN - Robert Ross: As Chairman I Abstain in order to maintain neutrality on all issues.

P029 Supplemental Information

Changes needed to harmonize the NGBS with the 2021 IECC

Change #1

701.1.4 Alternative Bronze and Silver level compliance. As an alternative, any building that qualifies as an ENERGY STAR Version 3.0 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 building or demonstrates compliance with the ICC IECC or IRC Chapter 11 achieves the Bronze level for Chapter 7. As an alternative, any building that qualifies as an ENERGY STAR Version 3.1 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 (with the baseline at ASHRAE 90.1-2010) building achieves the Silver level for Chapter 7. As an alternative in the Tropical Climate Zone, any building that meets all the requirements in ICC IECC Section R401.2.14 (Tropical Zone) achieves the Silver level for Chapter 7. The buildings achieving compliance under § 701.1.4 are not eligible for achieving a rating level above Silver.

Reason Statement:

The referenced section number changed in the 2021 IECC

Change #2

701.1.6 Alternative Gold level compliance for tropical zones. One- or two-family dwelling in the tropical zone at an elevation less than 2,400 ft. (731.5 m) above sea level that complies with the following shall achieve the Gold level for Chapter 7:

- (1) The residence complies with ICC IECC R401.2.14 Tropical zone.
- (2) The residence includes a minimum of 2 kW of PV and a minimum of 6 kWh of battery storage.

Reason Statement:

The referenced section number changed in the 2021 IECC

Change #3

Replace Table 701.4.3.2(2) with IECC Table R402.4.1.1 from the 2021 edition

Reason Statement:

The referenced table previously was an excerpt from Table R402.2.1.1 of the 2018 IECC. The table needs to be updated to Table R402.2.1.1 of the 2021 IECC

Change #4

701.4.4 High-efficacy lighting. Lighting efficacy in dwelling units or sleeping units is in accordance with one of the following:

(1) A minimum of 75% of the total hard-wired lighting fixtures or the bulbs in those fixtures qualify as high efficacy or equivalent. All permanently installed lighting fixtures, excluding kitchen appliance lighting fixtures, shall contain only high-efficacy lighting sources.

(2) Lighting power density, measured in watts/square foot, is 1.1 shall be 0.45 or less.

Reason Statement:

High efficacy requirements increased from 75% to 100% in the 2021 IECC and this should be reflected in the mandatory lighting requirements.

LPD's have also changed in the 2021 for dwelling units to 0.45 in the 2021 IECC and this should be reflected in the mandatory lighting requirements.

Change #5

702.2.3 Tropical standard reference design. For the Tropical Climate Zone, the standard reference design shall use the specifications in ICC IECC Section R401.2. 14 (Tropical Zone).

Reason Statement:

The referenced section number changed in the 2021 IECC

Change #6

703.6.1 Interior ~~H~~hard-wired lighting. Interior ~~H~~hard-wired lighting is in accordance with one of the following:

(1) A minimum of 95% percent of the total hard-wired interior luminaires or lamps qualify as ENERGY STAR, meet the following efficacy levels (lumens per watt) DesignLights Consortium (DLC), or applicable equivalent.

- a) 80 lumens per watt3
- b) 100 lumens per watt5

Replace table 703.6.1(1) with the following:

Table 703.6.1(1)
~~Hard-wired Interior Lighting~~
Climate Zone

<u>Minimum lamp efficacy</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
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POINTS

95% _____ 3 _____ 3 _____ 3 _____ 2 _____ 2 _____ 2 _____ 2 _____ 2

~~(2) A minimum of 80% of the exterior lighting wattage has a minimum efficacy of 61 lumens per watt or is solar powered. 2~~

~~(3) In multifamily buildings, common area lighting power density (LPD) is less than 0.51 Watts per square foot. 7~~

(2) Lighting power densities (LPD) in common areas of multi-dwelling or multi-sleeping unit buildings shall be less than:

a) 0.40 Watts per square foot.....3

b) 0.35 Watts per square foot.....5

703.6.2 Exterior hard-wired lighting. A minimum of 80% of the exterior lighting has a minimum efficacy of 100 lumens per watt or is solar-powered. 3

Renumber sections below...

Reason Statement:

A number of changes were made 703.6.1 related to lighting initiated by changes to the 2021 IECC.

- (1) The efficacy required by the 2021 IECC is better than ENERGY STAR in most cases so the efficacy requirement was changed and a second efficacy tier was added
- (2) The hard wired exterior lighting needed to be improved due to increased efficacy requirements in the 2021 IECC. Exterior lighting was also broken out into a separate section as additional credit should be given if both interior and exterior lighting meet the efficacy requirements (moved to a new section).
- (3) The current LPD requirements were reduced in the 2021 IECC below the level for points, so the LPDs were adjusted to go roughly 10% beyond the minimum and a second tier was added at roughly 20% better than the minimum code LPDs.

Change #7

703.1.1.2 Prescriptive R-values and fenestration requirements. The building thermal envelope is in accordance with the insulation and fenestration requirements of ICC IECC Table R402.1.23 or Tables C402.1.3. The fenestration U-factors and SHGC's are in accordance with Table 703.2.5.1 or ICC IECC Table C402.4.

Reason Statement:

Prescriptive R-value and Fenestration Requirements. Residential 2021 IECC flipped order of prescriptive R-value and U-factor tables, so 703.1.1.2 should refer to Table R402.1.3 (not .2)

Change #8

703.1.3 Duct Testing. The duct system is in accordance with ICC IECC R403.3.2 through R403.3.5 as applicable.

Reason Statement:

2021 IECC made changes to duct insulation in and out of conditioned space and buried ducts. Since all of section R403.3 was applicable, the entire section was referenced.

Change #9

703.2.1 Table 703.2.1(a) Replaced in its entirety with table R402.1.2 from the 2021 IECC

**Table 703.2.1(a)
Baseline U-Factors***

Climate Zone	Fenestration U-factor	Skylight U-factor	Ceiling U-factor	Frame Wall U-factor	Mass Wall U-factor ^b	Floor U-factor	Basement Wall U-factor	Crawlspace Wall U-factor ^c
1	0.50	0.75	0.035	0.084	0.197	0.064	0.360	0.477
2	0.40	0.65	0.030 0.026	0.084	0.165	0.064	0.360	0.477
3	0.35 0.30	0.55	0.030 0.026	0.060	0.098	0.047	0.091 ^c	0.136
4 except Marine	0.35 0.30	0.55	0.026 0.024	0.060 0.045	0.098	0.047	0.059	0.065
5 and Marine 4	0.32 0.30	0.55	0.026 0.024	0.060 0.045	0.082	0.033	0.050	0.055
6	0.32 0.30	0.55	0.026 0.024	0.045	0.060	0.033	0.050	0.055
7 and 8	0.32 0.30	0.55	0.026 0.024	0.045	0.057	0.028	0.050	0.055

Reason Statement:

2021 IECC made a number of changes to the U-Factor table and the revised table should be included in the NGBS

Change #10

Table 703.2.5.1 Fenestration Specifications.

Climate Zones	U-Factor	SHGC
	Windows and Exterior Doors (maximum certified ratings)	
1	0.50	0.25
2	0.40	0.25
3	0.32 <u>0.30</u>	0.25
4	0.32 <u>0.30</u>	0.40
5 to 8	0.30*	Any

Reason Statement:

The fenestration U-factors need to be updated to match 2021 IECC in zones 3-4.

Change #11

Make changes as shown in table 703.2.5.2(a) below:

**Table 703.2.5.2(a)
Enhanced Fenestration Specifications**

Climate Zones	U-Factor Windows & Exterior Doors	SHGC Windows & Exterior Doors	U-Factor Skylights & TDDs	SHGC Skylights & TDDs	Points
1	0.40	0.25	0.60	0.28	TBD
2	0.40	0.25	0.60	0.28	TBD
3	0.30 <u>0.27</u>	0.25	0.53 <u>0.50</u>	0.28	TBD
4	0.30 <u>0.27</u>	0.40	0.53 <u>0.50</u>	0.35	TBD
5	0.27	Any	0.50	Any	TBD
6	0.27	Any	0.50	Any	TBD
7	0.27	Any	0.50	Any	TBD
8	0.27	Any	0.50	Any	TBD

Reason Statement:

Changes were made to be consistent with changes to the 2021 IECC.

Change #12

705.6.2.3 HVAC duct leakage testing. One of the following is achieved: Points awarded only for buildings where duct leakage testing is not required by ICC IECC. Points not awarded if points are taken under § 703.4.4.

- (1) Duct leakage is in accordance with ICC IECC R403.3.35 and R403.3.46..... 3
- (2) Duct leakage is in accordance with ICC IECC R403.3.35 and R403.3.46, and testing is conducted by an independent third party..... 5

Reason Statement:

2021 IECC added new duct sections. Consequently the referenced section numbers need to be updated.

Change #13

706.5 On-site renewable energy system. One of the following options is implemented:

- (1) Building is Solar-Ready in compliance with ICC IECC Appendix A RB or CB Solar-Ready Zone Provisions (as applicable)..... 1
- (2) An on-site renewable energy system(s) is installed on the property.2 per kW
- (3) An on-site renewable energy system(s) and a battery energy storage system are installed on the property.

Reason Statement:

The Solar Ready Zone Appendix reference changes from A to RB for residential and CB for commercial

Non-IECC Change #1

701.1.4 Alternative Bronze and Silver level compliance. As an alternative, any building that qualifies as an ENERGY STAR Version 3.0 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 building or demonstrates compliance with the ICC IECC or IRC Chapter 11 achieves the Bronze level for Chapter 7. As an alternative, any building that qualifies as an ENERGY STAR National Single Family New Homes Version 3.1 or 3.2 and/or ENERGY STAR National Multifamily New Construction Version 1.1 or 1.2 ~~Version 3.1 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 (with the baseline at ASHRAE 90.1-2010)~~ building achieves the Silver level for Chapter 7. As an alternative in the Tropical Climate Zone, any building that meets all the requirements in ICC IECC Section R401.2.1 (Tropical Zone) achieves the Silver level for Chapter 7. The buildings achieving compliance under § 701.1.4 are not eligible for achieving a rating level above Silver

Reason Statement:

The currently referenced ENERGY STAR programs are outdated and should be changed to the current programs listed above.

Non-IECC Change #2

704.1 ERI target compliance. Compliance with the energy chapter shall be permitted to be based on the EPA National ERI Target Procedure for National Single Family New Homes Version 3.1 or 3.2 and/or ENERGY STAR National Multifamily New Construction Version 1.1 or 1.2 ~~ENERGY STAR-Certified Homes~~. Points from § 704 (ERI Target) shall not be combined with points from § 702 (Performance Path) or § 703 (Prescriptive Path).

Reason Statement:

The currently referenced ENERGY STAR programs are outdated and should be changed to the current programs listed above.



Home Innovation
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2024 UPDATE

A040 Supplemental Information

A040 SUPPLEMENTAL INFORMATION

APPENDIX RX ENERGY EFFICIENT OPTION.

This appendix provides a simpler energy code that conserves more energy.

RX 101. Thermal Envelope.

The thermal envelope shall comply with RX101.1 through RX101.4.

RX 101.1 Insulation and fenestration criteria.

The building thermal envelope shall meet the requirements of IECC Table R402.1.2, based on climate zone. Assemblies shall have a Ufactor equal to or less than that specified in Table R402.1.2. Fenestration shall have a U-factor and glazed fenestration SHGC equal to or less than that specified in Table R402.1.2.

RX 101.2 R-value alternative.

Assemblies with an R-value of insulation materials equal to or greater than that specified in IECC Table R402.1.3 shall be an alternative to the U-factor in Table R402.1.2.

RX 101.3 Specific insulation requirements.

The building shall comply with IECC Section R402.2 "Specific Insulation Requirements".

RX 101.4 Fenestration U-factor.

An area-weighted average of fenestration shall be permitted to satisfy the fenestration U-factor requirements.

RX 101.5 Glazed fenestration SHGC.

An area-weighted average of fenestration products more than 50-percent glazed shall be permitted to satisfy the SHGC requirements.

RX101.5.1 Glazed fenestration exemption.

15 square feet (1.4 m) of glazed fenestration per dwelling unit shall be exempt from the U-factor and SHGC requirements in this section. This exemption shall not apply to the Total building UA alternative.

RX101.5.2 Opaque door exemption.

One side-hinged opaque door assembly not greater than 24 square feet (2.22m) in area shall be exempt from the U-factor requirement. This exemption shall not apply to the total building UA alternative.

RX102 HVAC efficiency.

HVAC shall meet the following criteria as applicable:

1. In zones 3 through 8 gas furnaces shall be at least 90 AFUE. Where installed in an existing house without venting for condensing furnaces, gas furnaces shall be at least 83 AFUE. An alternative that conserves at least the same energy shall be permitted.

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2. In zones 3 through 8 air source heat pump efficiency shall be at least 16 SEER and 8.2 HSPF; or an alternative that conserves at least the same energy.

3. Ground source heat pumps shall have at least a 3.5 COP.

4. Cooling shall have at least an 18 SEER in zones 0 to 2. Cooling shall have at least an 16 SEER in zones 3 to 7. An alternative that conserves at least the same energy shall be permitted

RX102.1 Electric resistance heating.

Electric resistance heating shall not be used as a primary heating system in zones 3 to 8.

RX103 Equipment sizing.

Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on building loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies.

RX104 Air leakage.

The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding 5 ACH50 in zones 0 to 3 and 3 ACH50 in zones 4 to 8. Testing shall be conducted in accordance with RESNET/ICC 380, ASTM E779 or ASTM E1827 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Where required by the code official, testing shall be conducted by an approved third party. A written report of the test results shall be provided to the code official by the party conducting the test.

Testing shall be performed after creation of all penetrations of the building thermal envelope.

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond weatherstripping or other infiltration control measures.

2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond the infiltration control measures.

3. Exterior or interior terminations for continuous ventilation systems shall be sealed.

4. Where installed at time of test:

4.1. Interior doors shall be open

4.2. Heating and cooling systems shall be turned off

4.3. Supply and return registers shall be fully open

RX105 Mechanical ventilation.

Buildings and dwelling units mechanical ventilation shall comply the International Residential Code or International Mechanical Code, or with other approved means of ventilation.

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Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

RX105.1 Heat or energy recovery ventilation.

Dwelling units shall be provided with a heat recovery or energy recovery ventilation system in Climate Zones 6 thru 8.

The system shall be balanced with a minimum sensible heat recovery efficiency of 65 percent at 32°F (0°C) at a flow greater than or equal to the design airflow.

RX 106 Whole-dwelling mechanical ventilation system fan efficacy.

Fans providing whole-dwelling mechanical ventilation shall meet the following efficacy requirements at one or more rating points. Fans shall be tested in accordance with HVI 916 and listed. The airflow shall be reported in the product listing or on the label. Fan efficacy shall be reported in the product listing or shall be derived from the input power and airflow values reported in the product listing or on the label. Fan efficacy for fully ducted HRV, ERC, balanced, and in-line fans shall be determined at a static pressure of not less than 0.2 inch w.c. (49.85 Pa). Fan efficacy for ducted range hoods, bathroom and utility room fans shall be determined at a static pressure of not less than 0.1 inch w.c. (24.91 Pa).

Minimum efficacy shall be as follows. Design outdoor airflow rate/watts of fan shall be used.

1. HRV, ERV - 1.2 cfm/watt

2. In-line supply or exhaust fan - 3.8 cfm/watt

3. Other exhaust fan < 90 cfm - 2.8 cfm/watt

4. Other exhaust fan ≥ 90 cfm - 3.5 cfm/watt

5. Fan in air-handler in HVAC equipment - 1.2 cfm/watt

RX107 Mechanical system piping insulation.

Mechanical system piping capable of carrying fluids greater than 105°F (41°C) or less than 55°F (13°C) shall be insulated to an Rvalue of not less than R-3.

RX108 Service hot water systems.

Service hot water systems shall be in compliance with IECC Section R403.5 or this section.

RX108.1 Service water heaters.

Service water heaters shall comply with 1, 2 3, or 4. It is permissible to have multiple water heaters service each dwelling. Each service water heater shall meet at least one of the criteria below:

1. water heater is within 10 horizontal feet of hot water use. Distance shall be as measured from the center of the water heater to the plumbing fixture or appliance on construction documents or as in actual construction

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2. efficiency is at least 1.5 UEF if electric; or an alternative that conserves at least the same energy,

3. efficiency is at least 0.85 UEF if gas; or an alternative that conserves at least the same energy,

4. solar energy is projected to supply at least 70% of the service hot water energy.

RX108.2 Heated water circulation and temperature access.

Automatic controls, temperature sensors and pumps shall be in a location with access. Manual controls shall be in a location with ready access.

RX108.3 Circulation systems.

Heated water circulation systems shall be provided with a circulation pump. The system return pipe shall be a dedicated return pipe or a cold water supply pipe. Gravity and thermosyphon circulation systems shall be prohibited. Controls for circulating hot water system pumps shall automatically turn off the pump when the water in the circulation loop is at the desired temperature and when there is no demand for hot water. The controls shall limit the temperature of the water entering the cold water piping to not greater than 104°F (40°C).

RX108.4 Demand recirculation water systems.

Where installed, demand recirculation water systems shall have controls that start the pump upon receiving a signal from the action of fixture or appliance use, sensing the presence of a fixture user or sensing the flow of hot or tempered water to a fixture or appliance.

RX108.5 Heat trace systems.

Electric heat trace systems shall comply with IEEE 515.1 or UL 515. Controls shall automatically adjust the heat tracing to maintain the desired water temperature in the piping in accordance with heated water use.

RX109 Hot water pipe insulation.

Insulation for service hot water piping with a thermal resistance of not less than R-3 shall be applied to the following:

1. Piping 3/4 inch (19.1 mm) and larger in nominal diameter located inside the conditioned space.

2. Piping serving more than one dwelling unit.

3. Piping located outside the conditioned space.

4. Piping from the water heater to a distribution manifold.

5. Piping located under a floor slab.

6. Buried piping.

7. Supply and return piping in circulating hot or cold water systems.

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Exceptions:

1. Cold water pipe returns in demand recirculation water systems.
2. Where the source of service hot water is within 6 horizontal feet (1828 mm) of the plumbing fixture or appliance.

RX109.1 Short hot water pipes.

Where the source of service hot water is within 6 feet of the use of service hot water or recirculation loop, pipe insulation is not required

RX110 Ducts.

Ducts and air handlers shall be installed in accordance with Sections RX110.1 through RX110.7.

RX110.1 Ducts outside conditioned space.

Supply and return ducts located outside conditioned space shall be insulated to not less than R-8 for ducts 3 inches (76 mm) in diameter and larger; and not less than R-6 for ducts smaller than 3 inches (76 mm) in diameter. Ducts buried beneath a building shall be insulated as required per this section or have an equivalent thermal distribution efficiency. Underground ducts utilizing the thermal distribution efficiency method shall be listed and labeled to indicate the R-value equivalency.

RX110.2 Ducts in conditioned space.

For ductwork to be considered inside a conditioned space, it shall comply with at least one of the following:

1. The duct system shall be located completely within the continuous air barrier and within the building thermal envelope.
2. Ductwork in ventilated attic spaces shall be buried within ceiling insulation in accordance with IECC Section R403.3.3 and all of the following:
 - 2.1. The air handler is located completely within the continuous air barrier and within the building thermal envelope.
 - 2.2. The duct leakage, as measured either by a rough-in test of the ducts or a post-construction total system leakage test to outside the building thermal envelope in accordance with IECC Section R403.3.6, is less than or equal to 1.5 cubic feet per minute (42.5 L/min) per 100 square feet (9.29 m) of conditioned floor area served by the duct system.
 - 2.3. The ceiling insulation R-value installed against and above the insulated duct is greater than or equal to the proposed ceiling insulation R-value, less the R-value of the insulation on the duct.
- 3 Ductwork in floor cavities located over unconditioned space shall comply with all of the following:

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3.1. A continuous air barrier shall be installed between unconditioned space and the duct.

3.2. A minimum R-19 insulation installed in the cavity width separating the duct from unconditioned space.

4 Ductwork located within exterior walls of the building thermal envelope shall comply with the following:

4.1. A continuous air barrier installed between unconditioned space and the duct.

4.2. Minimum R-10 insulation installed in the cavity width separating the duct from the outside sheathing.

4.3. The remainder of the cavity insulation shall be fully insulated to the drywall side.

RX110.3 Ducts buried within ceiling insulation.

Where supply and return air ducts are partially or completely buried in ceiling insulation, such ducts shall comply with all of the following:

1. The supply and return ducts shall have an insulation R-value not less than R-8

2. At all points the sum of the ceiling insulation R-value against and above the top of the duct, and against and below the bottom of the duct, shall be not less than R-19, excluding the R-value of the duct insulation.

3. In Climate Zones 0A, 1A, 2A and 3A, the supply ducts shall be completely buried within ceiling insulation and insulated to an Rvalue of not less than R-13.

Exception: Sections of the supply duct that are less than 2 feet (914 mm) from the supply outlet shall not be required to comply with these requirements.

RX110.4 Effective R-value of deeply buried ducts.

Ducts located directly on or within 5.5 inches (140 mm) of the ceiling, surrounded with blown-in attic insulation of R- 30 or greater and located such that the top of the duct is not less than 3.5 inches (89 mm) below the top of the insulation, shall have an effective duct insulation R-value of R-25.

RX110.5 Duct sealing.

Ducts, air handlers and filter boxes shall be sealed. Joints and seams shall comply with either the International Mechanical Code or International Residential Code.

RX110.6 Sealed air handler.

Air handlers shall have a manufacturer's designation for an air leakage of not greater than 2 percent of the design airflow rate when tested in accordance with ASHRAE 193.

RX110.7 Duct testing.

Ducts shall be pressure tested in accordance with ANSI/RESNET/ICC 380 or ASTM E1554 to determine air leakage by one of the following methods:

1. Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. Registers shall be taped or otherwise sealed during the test.

2. Post-construction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. Registers shall be taped or otherwise sealed during the test.

Exception: The duct air-leakage test in Section RX110.7 shall not be required for ducts serving heating, cooling or ventilation systems that are not integrated with ducts serving heating or cooling systems.

RX110.7.1 Duct leakage.

The total leakage of the ducts, where measured in accordance with Section R403.3.5, shall be as follows:

1. Rough-in test: The total leakage shall be less than or equal to 4.0 cubic feet per minute (113.3 L/min) per 100 square feet (9.29 m) of conditioned floor area where the air handler is installed at the time of the test. Where the air handler is not installed at the time of the test, the total leakage shall be less than or equal to 3.0 cubic feet per minute (85 L/min) per 100 square feet (9.29 m) of
conditioned floor area.

2. Post-construction test: Total leakage shall be less than or equal to 4.0 cubic feet per minute (113.3 L/min) per 100 square feet (9.29 m) of conditioned floor area.

3. Test for ducts within thermal envelope: Where all ducts and air handlers are located entirely within the building thermal envelope, total leakage shall be less than or equal to 8.0 cubic feet per minute (226.6 L/min) per 100 square feet (9.29 m) of conditioned floor area.

RX111 Building cavities.

Building cavities shall not be used as ducts or plenums.

RX112 Rooms containing fuel-burning appliances.

In Climate Zones 3 through 8, where open combustion air ducts provide combustion air to open combustion fuel-burning appliances the following shall apply:

1. appliances and combustion air opening shall be located outside the building thermal envelope or enclosed in a room that is isolated from inside the thermal envelope

2. rooms shall be sealed and insulated in accordance with the envelope requirements of IECC Table R402.1.3

A040 SUPPLEMENTAL INFORMATION

3. walls, floors and ceilings shall meet a minimum of the basement wall R-value requirement

4. door(s) into the room shall be gasketed

5. water lines and ducts in the room shall be insulated in accordance with IECC Section R403

6. combustion air duct shall be insulated where it passes through conditioned space to not less than R-8

Exceptions:

1. Direct vent appliances with both intake and exhaust pipes installed continuous to the outside; and

2. Fireplaces and stoves complying with Section R402.4.2 and Section R1006 of the International Residential Code.

RX113 Fireplace doors.

Fireplaces shall have tight-fitting doors.

RX114 Renewables offset.

Renewables shall be permitted to be treated as a reduction in energy use of the dwelling. Such renewables shall be on-site or off-site renewables. Off-site renewables treated as a reduction in energy use shall be as specified by IECC Section CC103.3.1

RX115 Pool covers.

Outdoor heated pools and outdoor permanent spas shall be provided with a vapor-retardant cover or other approved vapor-retardant means. Outdoor heated pools shall be provided with an automated pool cover.

Exception: Where more than 75 percent of the energy for heating, computed over an operation season of not fewer than 3 calendar months, is from a heat pump or an on-site renewable energy system, the covers or other vapor-retardant means shall not be required.

RX116 Fuel Gas Lighting Equipment.

Fuel gas lighting systems shall not have continuously burning pilot lights.



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A057 Supplemental Information

Legislation Format (As Modified NGBS 2020 Text)

704.1 ERI Target compliance. Compliance shall be determined in accordance with ANSI/RESNET/ICC 301. ~~with the energy chapter shall be permitted to be based on the EPA National ERI Target Procedure for ENERGY STAR Certified Homes.~~ Points from Section 704 (ERI Target) shall not be combined with points from Section 702 (Performance Path) or Section 703 (Prescriptive Path).

Dwelling ratings shall be submitted to a Rating Certification Body approved by the Adopting Entity for calculating points under this section.

704.2 Point Calculation. Points for Section 704 shall be computed ~~based Step “1” of the EPA the National ERI Target Procedure.~~ Points shall be computed individually for each building as follows:

~~30~~ 40 + (Applicable ENERGY RATING INDEX from Table 704.2 - ENERGY RATING INDEX of the rated design ENERGY STAR National ERI Target ~~— National ERI Points~~) * 2.

TABLE 704.2

CLIMATE ZONE	ENERGY RATING INDEX
0-1	52
2	52
3	51
4	54
5	55
6	54
7	53
8	53

Multifamily Building Note: Modeling is completed building-wide using either a unit-by-unit approach, or a building average of a unit-by-unit approach.

Chapter 14

RESNET – Residential Energy Services Network | www.resnet.us

DOCUMENT	DATE	TITLE	SECTION
ANSI/RESNET/ICC 301	2022	Standard for the Calculation and Labeling of the Energy Performance of Dwelling and Sleeping Units using an Energy Rating Index	704.1

A105 Supplemental Information

Additional Proposed Change Submittal Form

Copy and paste the blank for below for each addition Proposed Change. Submit the completed change to your TG Chair or Staff Liaison

TG 3	Chapter 14	Final Formal Action: TBD	
Submitter:	Aaron Gary		
Comment:	Update Chapter 14 to reflect the most current versions of the documents referenced in Chapter 6 and 9 practices.		
	ISO – International Organization for Standardization www.iso.org		
	DOCUMENT	DATE	TITLE
	16000-23	2009/2018	Indoor air – Part 23: Performance test for evaluating the reduction of formaldehyde and other carbonyl concentrations by sorptive building materials
	17025	2005/2017	General requirements for the competence of testing and calibration laboratories
			901.9, 11.901.9
			901.7, 901.8, 901.9.3, 901.10(1), 901.11, 901.12, 11.901.7, 11.901.8, 11.901.9.3, 11.901.10(1), 11.901.11, 11.901.12
Reason:	Maintain the internal logic and structure of the NGBS Standard		
Task Group Recommendation:	Approve as Modified (y-n-a)		
Task Group Modification:	See Below		
Task Group Reason:	Incorporated additional 1402 updates.		

DOCUMENT	DATE	TITLE	SECTION
ASHRAE 62.1	20162019	Ventilation for Acceptable Indoor Air Quality	902.1.6, 11.902.1.6, 13.107.7, 13.107.8.1
ASHRAE 62.2	2019	Ventilation and Acceptable Indoor Air Quality in Residential Buildings	706.12, 901.3, 902.2.1, 11.706.12, 11.901.3, 11.902.2.1, 1205.8

ASTM – ASTM International, Inc. | www.astm.org

DOCUMENT	DATE	TITLE	SECTION
C1178	20132018	Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel	602.1.11, 11.602.1.11, 1202.8, 13.104.1.6
C1278— 07a/1278M—07a	20112018	Standard Specification for Fiber-Reinforced Gypsum Panel	602.1.11, 11.602.1.11, 1202.8, 13.104.1.6
C1288	20102017	Standard Specification for Discrete Non-Asbestos Fiber-Cement Interior Substrate Sheets	602.1.11, 11.602.1.11, 1202.8, 13.104.1.6
C1325-08b	20082022	Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cementitious Backer Units	602.1.11, 11.602.1.11, 1202.8, 13.104.1.6
C1371-15	20102022	Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers	703.2.3, 11.703.2.3
D7338	20102014	Standard Guide for Assessment of Fungal Growth in Buildings	904.1, 904.2, 11.904.1, 11.904.2

ASTM – ASTM International, Inc. | www.astm.org (Continued)

DOCUMENT	DATE	TITLE	SECTION
D7612	20152021	Standard Practice for Categorizing Wood and Wood-Based Products According to Their Fiber Sources	606.2(h), 11.606.2(h)
E283	2012	Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen	701.4.3.5, 11.701.4.3.5,

E779	2010	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization	705.6.2.1, 11.705.6.2.1
E1509	2012 2022	Standard Specification for Room Heaters, Pellet Fuel-Burning Type	901.2.1(4), 11.901.2.1(4), 1205.2(4)
E1602-03	2010 2017	Standard Guide for Construction of Solid Fuel Burning Masonry Heaters	901.2.1(5), 11.901.2.1(5), 1205.2(4)
E1827	2011	Standard Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door	705.6.2.1, 11.705.6.2.1
E1980-11	2011 2019	Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low Sloped Opaque Surfaces	505.2(1)(b), 602.2(3), 11.505.2(1)(b), 11.602.2(3)
E2273	2011 2018	Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies	602.1.9(5)(b), 11.602.1.9(5)(b)
E2921-16a	2013 2016	Standard Practice for Minimum Criteria for Comparing Whole Building Life Cycle Assessments for Use with Building Codes and Rating Systems	610.1.1, 610.1.1(1), 11.610.1.1, 11.610.1.1(1),

CARB – California Air Resources Board | www.arb.ca.gov

DOCUMENT	DATE	TITLE	SECTION
	2007	Composite Wood Air Toxic Contaminant Measure Standard	901.4(5), 901.5(2), 11.901.4(5), 11.901.5(2)
	2008 2020	Suggested Control Measure for Architectural Coatings	901.9.1(3), 11.901.9.1(3), 1205.6(3)
	2011	The California Consumer Products Regulations	901.10(3), 11.901.10(3)

CDPH – California Department of Public Health | www.cdarb.ca.gov

DOCUMENT	DATE	TITLE	SECTION
	2010 2017	Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.12.	901.7, 901.8, 901.9.3, 901.10(1), 901.11, 11.901.7, 11.901.8, 11.901.9.3, 11.901.10(1), 11.901.11, 12.1.901.7, 12.1.901.8,

Interest Categories: (G) = General (P) = Producer (U) = User

			12.1.901.9.2, 12.11.901.10(1)
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CPA – Composite Panel Association | www.pbmdf.com

DOCUMENT	DATE	TITLE	SECTION
A208.1	20092022	Particleboard Standard	901.4(2), 11.901.4(2)
A208.2	20092022	MDF Standard	901.4(2), 11.901.4(2)
CPA 4	20112019	The Eco-Certified Composite™ (ECC) Standard	901.4(4), 11.901.4(4)

CSA – CSA International | www.csa-international.org

DOCUMENT	DATE	TITLE	SECTION
6.19	2011	Residential Carbon Monoxide Alarming Devices	
CSA/AM - ANSI Z21.50/CSA 2.22	20142019	Vented Decorative Gas Fireplaces w/ Addenda b	901.1.5, 11.901.1.5
CSA/AM - ANSI Z21.88/CSA 2.33	20142019	Vented Gas Fireplace Heaters	901.1.5, 11.901.1.5
Z809	20132016	Sustainable Forest Management Requirements and Guidance (SFM)	606.2(b), 11.606.2(b)
B366.1	2007	Solid-Fuel-Fired Central Heating Appliances	13.107.4.3

EPA – Environmental Protection Agency | www.epa.gov

DOCUMENT	DATE	TITLE	SECTION
Burn Wise	2012	EPA Qualified Wood-Burning Fireplace Program Partnership Agreement	901.2(2), 11.901.2(2)
EPA 402-K-01-001	2008	Mold Remediation in Schools and Commercial Buildings	904.3(1), 11.904.3(1), 1202.11
EPA 402-K-02-003	2012	A Brief Guide to Mold, Moisture and Your Home	904.3(1), 11.904.3(1)
EPA 747-K-97-001	1997	Reducing Lead Hazards When Remodeling Your Home	11.1001.1(23)
Method 24	20002020	Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings	901.9.1(1), 11.901.9.1(1), 1205.6(1)
	1990	Asbestos in the Home: A Homeowner's Guide	11.1001.1(23)
	2013	Smart Location Database, NGBS: Points for Smart Location Practices https://epa.maps.arcgis.com/home/item.html?id=9508f9295c144b9fb392d33b18b569e3	405.6(7), 405.6(8), 501.2(4), 11.501.2(3)

ENERGY STAR® Documents (Continued)

DOCUMENT	DATE	TITLE	SECTION
	January 1, 2014	<i>ENERGY STAR Program Requirements for Clothes Washers, Version 7.0</i>	703.6.2(3), 802.2(2), 11.703.6.2(3), 11.802.2(3)
	January 20, 2013	<i>ENERGY STAR Program Requirements for Dishwashers, Version 5.2</i>	703.6.2(2), 802.2(1), 11.703.6.2(2), 11.802.2(1)
	December 1, 2009	<i>ENERGY STAR Program Requirements for Geothermal Heat Pumps – Eligibility Criteria Version 3.1</i>	703.3.6, 11.703.3.6
	April 1, 2012	<i>ENERGY STAR Program Requirements for Luminaires, Version 1.2</i>	703.6.1(1), 11.703.6.1(1)
	April 28, 2014	<i>ENERGY STAR Program Eligibility Criteria for Residential Refrigerators and/or Freezers, Version 5</i>	703.6.2(1), 11.703.6.2(1)
	April 1, 2012	<i>ENERGY STAR Program Requirements for Residential Ceiling Fans – Eligibility Criteria Version 3.0</i>	703.3.7, 11.703.3.7
	April 1, 2012 October 1, 2015	<i>ENERGY STAR Program Requirements for Residential Ventilating Fans – Eligibility Criteria Version 3.24.1</i>	902.1.4(1), 902.1.4(2), 11.902.1.4(1), 11.902.1.4(2)
	January 17, 2014	<i>ENERGY STAR Program Requirements for Residential Windows, Doors, and Skylights – Eligibility Criteria Version 6.0</i>	703.2.5.2.1, 11.703.2.5.2.1
	2012	<i>ENERGY STAR Program Requirements for Roof Products – Eligibility Criteria Version 2.3</i>	602.2(1), 11.602.2(1)

GS – Green Seal | www.greenseal.org

DOCUMENT	DATE	TITLE	SECTION
GS-11	2013/2021	<i>Paints and Coatings 3.14.0</i>	901.9.1(2), 11.901.9.1(2), 1205.6(2)
GS-36	2013	<i>Adhesives for Commercial Use 2.1</i>	901.10(2), 11.901.10(2),

HPVA – Hardwood Plywood Veneer Association | www.hpva.org

DOCUMENT	DATE	TITLE	SECTION
ANSI/HPVA HP-1	2009/2020	<i>American National Standard for Hardwood and Decorative Plywood</i>	901.4(3), 11.901.4(3)

ICC – International Code Council | www.iccsafe.org

DOCUMENT	DATE	TITLE	SECTION
A117.1	2017	<i>Accessible and Usable Buildings and Facilities</i>	611.3

IBC	2018/2024	International Building Code	202, 602.1.1.1, 602.1.3.1, 602.1.8, 602.1.13, 613.2, 901.2.1(5), 1001.1(12)(b), 11.602.1.1.1, 11.602.1.3.1, 11.602.1.8, 11.602.1.13, 11.613.2, 11.901.2.1(5), 11.1001.1(12)(b), 1205.2(5), 13.104.1.1, 13.104.1.2, 13.104.1.3, 13.104.1.4, 13.104.1.6
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ICC – International Code Council | www.iccsafe.org (Continued)

DOCUMENT	DATE	TITLE	SECTION
ICC-400	2012	<i>Standard on the Design and Construction of Log Structures</i>	Table 701.4.3.2(2)

IECC	2018	<i>International Energy Conservation Code</i>	610.1.1(2), 701.1.4, 701.1.6(1), 701.1.6(6)(a), 701.4.3.3, 702.2.1, 702.2.2, 702.2.3, 703.1.1.1, 703.1.1.2, 703.1.2, 703.1.3, 703.2.1, 705.6.2.1, 705.6.2.3(1), 705.6.2.3(2), 705.6.3, 706.5(1), 11.610.1.1(2), 11.701.4.0, 11.701.4.3.3, 11.703.1.1.1, 11.703.1.1.2, 11.703.1.2, 11.703.1.3, 11.703.2.1, 11.705.6.2.1, 11.705.6.2.3(1), 11.705.6.2.3(2), 11.705.6.3, 11.706.5(1), 1203.10.1, 1203.10.2, 13.105.1, 13.105.3.1, 13.105.5, 13.105.6, 13.105.7, 13.105.8.1, 13.105.9, 13.105.11.2, 13.105.12.1, 13.105.12.3
<u>IFGC</u>	<u>2018</u> <u>2024</u>	<i>International Fuel Gas Code</i>	901.1.4, 11.901.1.4, 1205.1, 13.107.4.4

ICC – International Code Council | www.iccsafe.org (Continued)

DOCUMENT	DATE	TITLE	SECTION
lgCC	2018	<i>International Green Construction Code</i>	301.1.1, 304.2,

Interest Categories: (G) = General (P) = Producer (U) = User

			701.1.5, 13.102.1.4
IMC	2018/2024	International Mechanical Code	705.6.1(1), 11.705.6.1(1), 13.105.10, 13.107.7, 13.107.8.1
IRC	2018/2024	International Residential Code	202, 602.1.1.1, 602.1.3.1, 602.1.4.2(1), 602.1.4.2(2), 602.1.8, 602.1.13, 705.6.1(1), 902.1.1(1), 902.3, 1001.1(12)(b), 11.602.1.1.1, 11.602.1.3.1, 11.602.1.4.2(1), 11.602.1.4.2(2), 11.602.1.8, 11.602.1.13, 11.705.6.1, 11.902.1.1(1), 11.902.3, 11.1001.1(12)(b), 1202.1, 1202.4
IPC	2018	International Plumbing Code	703.5.1, 11.703.5.1, 13.106.5.3
IWUIC	2018	International Wildlife Urban Interface Code	503.1(8), 11.503.1(8)

ISO – International Organization for Standardization | www.iso.org

DOCUMENT	DATE	TITLE	SECTION
14025 http://www.solar-rating.org/ratings/OG300DIRECTORIES/OG300DIRFULL20070131.pdf	2006	Environmental labels and declarations – Type III environmental declarations – Principles and procedures	611.1.1, 611.1.2, 11.611.1.1, 11.611.1.2
14044 http://www.solar-rating.org/ratings/OG300DIRECTORIES/OG300DIRFULL20070131.pdf	2006	Environmental management – Life cycle assessment – Requirements and guidelines	610.1.1, 610.1.2, 11.610.1.1, 11.610.1.2,

14001	http://www.solar-rating.org/ratings/OG300DIRECTORIES/OG300DIRFULL20070131.pdf	2004	2015	<i>Environmental management systems – Requirements with guidance for use</i>	612.1, 11.612.1
16000-23		2009	2018	<i>Indoor air – Part 23: Performance test for evaluating the reduction of formaldehyde and other carbonyl concentrations by sorptive building materials</i>	901.9, 11.901.9
17025		2005	2017	<i>General requirements for the competence of testing and calibration laboratories</i>	901.7, 901.8, 901.9.3, 901.10(1), 901.11, 901.12 11.901.7, 11.901.8, 11.901.9.3, 11.901.10(1), 11.901.11, 11.901.12
17065		2012		<i>Conformity assessment – Requirements for bodies certifying products, processes and services</i>	612.2, 901.7, 901.8, 901.9.3, 901.10(1), 901.11, 901.12, 11.612.2, 11.901.7, 11.901.8, 11.901.9.3, 11.901.10(1), 11.901.11, 11.901.12
21930		2007	2017	<i>Sustainability in buildings and civil engineering works construction – Core rules for Environmental declarations of building construction products and services</i>	611.1.1, 611.1.2, 11.611.1.1, 11.611.1.2

Home Innovation | Home Innovation Research Labs | www.HomeInnovation.com

DOCUMENT	DATE	TITLE	SECTION	
2765	2013	2020	<i>Single-Family Residential Buildings – Square Footage – Method for Calculating</i>	601.1, 11.601.1

KCMA – Kitchen Cabinet Manufacturers Association | www.kcma.org

DOCUMENT	DATE	TITLE	SECTION	
ANSI/KCMA A161.1	2012	2020	<i>Performance and Construction Standard for Kitchen and Vanity Cabinets</i>	602.1.15, 11.602.1.15

Interest Categories: (G) = General (P) = Producer (U) = User

NFPA – National Fire Protection Association | www.nfpa.org

DOCUMENT	DATE	TITLE	SECTION
54	20122021	National Fuel Gas Code	901.1.4, 11.901.1.4, 1205.1, 13.107.4.4

NSF – NSF International | www.nsf.org

DOCUMENT	DATE	TITLE	SECTION
NSF/ANSI 140	20132019	Sustainable Carpet Assessment	612.2(1), 11.612.2(1)
NSF/ANSI 332	20122015	Sustainability Assessment for Resilient Floor Coverings	612.2(2), 11.612.2(2)
NSF/ANSI 342	20122019	Sustainability Assessment for Wallcovering Products	612.2(4), 11.612.2(4)

NWFA – National Wood Flooring Association | www.nwfa.org

DOCUMENT	DATE	TITLE	SECTION
RPP-STN-V3-0	20112019	Responsible Procurement Program	606.2(f), 11.606.2(f)

PEFC – Pan European Forest Council | www.pefc.org

DOCUMENT	DATE	TITLE	SECTION
GL 2	2011	PEFC Council Minimum Requirements Checklist	606.2(d) & (g), 11.606.2(d) & (g)

RESNET – Residential Energy Services Network | www.resnet.us

DOCUMENT	DATE	TITLE	SECTION
ANSI/RESNET/ICC 380	20182019	Standard for Testing Airtightness of Building Dwelling Unit and Sleeping Unit Enclosures; Airtightness of Heating and Cooling Air Distribution Systems; and Airflow of Mechanical Ventilation Systems	902.2.2, 705.6.2.1, 11.705.6.2.1, 11.902.2.2 1209

SCAQMD – South Coast Air Quality Management District | www.aqmd.gov

DOCUMENT	DATE	TITLE	SECTION
Rule 1168	20112017	Adhesive and Sealant Applications	901.10(3), 11.901.10(3)

SFI – Sustainable Forestry Initiative, Inc. | www.sfiprogram.org

DOCUMENT	DATE	TITLE	SECTION
2010-20142015-2019 Standard	20102015	Sustainable Forestry Initiative Standard (SFIS)	606.2(e), 11.606.2(e)

DOCUMENT	DATE	TITLE	SECTION
127	2011 2020	<i>Factory-Built Fireplaces</i>	901.2.1(2), 11.901.2.1(2)
181	2013	<i>The Standard for Safety for Factory-Made Air Ducts and Air Connectors</i>	701.4.2.1, 11.701.4.2.1
1482	2011 2022	<i>Solid-Fuel Type Room Heaters</i>	901.2.1(3), 11.901.2.1(3), 1205.2(3), 13.107.4.2(3)
100	2012	<i>Interim Sustainability Requirements for Gypsum Boards and Panels</i>	612.2(5), 11.612.2(5)
102	2012	<i>Standard for Sustainability for Door Leafs</i>	612.2(6), 11.612.2(6)
2985	2015	<i>Sustainability Outline for Thermal Insulation</i>	612.2(3), 11.612.2(3)
391	2010	<i>Standard for Solid-Fuel and Combination Fuel Central and Supplementary Furnaces</i>	13.107.4.3
2523	2009	<i>Standard for Solid Fuel-Fired Hydronic Heating Appliances, Water Heaters, and Boilers</i>	13.107.4.3



National Green Building Standard® **2024 UPDATE**

P094 Supplemental Information

APPENDIX B:
 EXAMPLES OF THIRD-PARTY PROGRAMS AND ACCREDITATION FOR
~~INDOOR ENVIRONMENTAL QUALITY~~

B100 SCOPE AND APPLICABILITY

B101.1 Applicability of Appendix B. Appendix B is not part of this Standard.

B101.2 Scope. Appendix B provides examples of third-party programs for indoor environmental quality and accreditation that can be used to demonstrate compliance with the applicable provisions of this Standard.

B200 CONFORMANCE

TABLE B200(1) Examples of Third-party Certification Programs <u>and accreditation</u>	
Related Section of Standard	Examples of Third-party Certification Programs Compliant with the Corresponding Section
<u>403.1 (3) Natural resources</u>	<u>USDA Natural Resource Conservation Service (NRCS) Conservation programs</u>
<u>404.4 (4) Wildlife habitat</u>	<u>Wildlife Conservation Land Program (WCLP)</u> <u>USDA Wildlife Habitat Management Programs</u>
<u>503.6 (2)/11.503.6 (2) Wildlife habitat</u>	<u>Garden for Wildlife, National Wildlife Federation (NWR) Wild Acres, MD Department of Natural Resources</u>
<u>602.1.7.2/11.602.1.7.2 Moisture control measures</u>	<u>Carpet and Rug Institute’s (CRI) Green Label Plus Indoor Air Quality Program UL GREENGUARD Gold Resilient Floor Covering Institute’s FloorScore Indoor Air Certification Program</u>
<u>602.1.15/11.602.1.15 Kitchen and vanity cabinets</u>	<u>Kitchen Cabinet Manufacturers Association (KCMA) Environmental Stewardship Program (ESP)</u>
<u>602.2 (3)/11.602.2 (3) Roof surfaces</u>	<u>Cool Roof Rating Council (CRRC)</u>
<u>606.1/11.606.1 Biobased products (g/h)</u>	<u>Forest Stewardship Council (FSC)</u> <u>United States Department of Agriculture (USDA)</u>
<u>606.2/11.606.2 Wood-based products</u>	<u>Forest Stewardship Council (FSC)</u>
<u>612.2/11.612.2 Sustainable products</u>	<u>Carpet and Rug Institute’s (CRI) Green Label Plus Indoor Air Quality Program UL GREENGUARD Gold Resilient Floor Covering Institute’s FloorScore Indoor Air Certification Program</u>
<u>802.6.2/11.802.6.2 Irrigation systems</u>	<u>UL SPLASH Field Sample Sprinkler Testing</u>

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901.5 Cabinets	Kitchen Cabinet Manufacturers Association (KCMA) Environmental Stewardship Program (ESP)
901.6 Carpets	Carpet and Rug Institute's (CRI) Green Label Plus Indoor Air Quality Program
901.7 Hard-surface flooring	UL GREENGUARD Gold Resilient Floor Covering Institute's FloorScore Indoor Air Certification Program, Carpet and Rug Institute's (CRI) Label Plus Indoor Air Quality Program
901.8 Wall coverings	UL GREENGUARD Gold Scientific Certification Systems (SCS) Indoor Advantage Gold Program
901.9 Architectural coatings	UL GREENGUARD Gold Scientific Certification Systems (SCS) Indoor Advantage Gold Program Green Seal-11 Standard for Paints and Coatings UL 2768
901.10 Adhesives and sealants	UL GREENGUARD Scientific Certifications Systems (SCS) Indoor Advantage Gold Program Carpet and Rug Institute's (CRI) Green Label Plus Indoor Air Quality Program Resilient Floor Covering Institute's FloorScore Indoor Air Certification Program Green Seal-36 Standard for Adhesives for Commercial Use
901.11 Insulation	UL GREENGUARD Gold Scientific Certifications Systems (SCS) Indoor Advantage Gold Program
901.12 Furniture and Furnishing	UL GREENGUARD Gold Scientific Certifications Systems (SCS) Indoor Advantage Gold Program BIFMA level certification where 7.6.1 and 7.6.2 are proven to be achieved

TABLE B200(2)
Contact Information for the Example Third-party Certification Programs

Third-party Certification Program	Contact Information for the Program Administrator
Kitchen Cabinet Manufacturers Association (KCMA) Environmental Stewardship Program (ESP)	<i>Kitchen Cabinet Manufacturers Association 1899 Preston White Drive Reston, VA 20191 www.kcma.org (703) 264-1690</i>
Carpet and Rug Institute's (CRI) Green Label Plus Indoor Air Quality Program	<i>Carpet and Rug Institute 730 College Drive Dalton, Georgia 30720 United States of America http://www.carpet-rug.org (706) 278-3176</i>
UL GREENGUARD Gold	<i>Underwriters Laboratories Inc. 333 Pfingsten Road Northbrook, IL 60062-2096 www.ul.com (877) 854-3577</i>
Resilient Floor Covering Institute's FloorScore Indoor Air Certification Program	<i>Resilient Floor Covering Institute 115 Broad Street, Suite 201 LaGrange, Georgia 30240 http://www.rfci.com</i>

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Scientific Certification Systems (SCS) Indoor Advantage Gold Program	<p>Scientific Certification Systems 2000 Powell Street, Suite 600 Emeryville, California 94608 http://www.scs-certified.com (510) 452-8000</p>
Green Seal-11 Standard for Paints and Coatings	<p>Green Seal 1001 Connecticut Avenue, NW, Suite 827 Washington, DC 20036-5525 http://www.greenseal.org/ (202) 872-6400</p>
UL 2768	<p>Underwriters Laboratories Inc. 333 Pfingsten Road Northbrook, IL 60062-2096 www.ul.com (877) 854-3577</p>
<u>UL SPLASH Field Sample Sprinkler Testing</u>	<p><u>Underwriters Laboratories Inc. 333 Pfingsten Road Northbrook, IL 60062-2096 www.ul.com (877) 854-3577</u></p>
<u>USDA Natural Resource Conservation Service (NRCS) Conservation programs</u>	<p><u>United States Department of Agriculture 1400 Independence Ave SW, Washington, DC 20250 https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/ (202) 720-7246</u></p>
<u>USDA Wildlife Habitat Management Programs</u>	<p><u>United States Department of Agriculture 1400 Independence Ave SW, Washington, DC 20250 https://www.usda.gov/topics/conservation/wildlife (202) 720-7246</u></p>
<u>Garden for Wildlife, National Wildlife Federation (NWR)</u>	<p><u>National Wildlife Federation Mid-Atlantic Regional Center 20 Ridgely Avenue, Suite 203 Annapolis, MD 21401 http://www.nwf.org/Mid-Atlantic/MidAtlantic@nwf.org (443)-759-3400</u></p>
<u>Cool Roof Rating Council (CRRC)</u>	<p><u>Cool Roof Rating Council 2435 N. Lombard St. Portland, OR 97217 https://coolroofs.org/programs/roof-rating-program (866) 465-2523</u></p>
<u>Forest Stewardship Council (FSC)</u>	<p><u>Forest Stewardship Council 708 First Street North, Suite 235 Minneapolis, MN 55401 https://us.fsc.org/en-us/certification (612) 353 4511</u></p>

P013	ID 7480	602.2 Roof surfaces	Final Formal Action: TBD
Submitter:	Jonathan Humble, American Iron and Steel Institute		
Comment:	<p>CHAPTER 6</p> <p><i>(Modify as shown below)</i></p> <p>602.2 Roof surfaces. A minimum of 90% of roof surfaces, not used for roof penetrations and associated equipment, on-site renewable energy systems such as photovoltaics or solar thermal energy collectors, or rooftop decks, amenities and walkways, are constructed of one or more of the following:</p> <p>(1) products that are in accordance with the ENERGY STAR® cool roof certification or equivalent.</p> <p>(2) a vegetated roof system.</p> <p>(3) (1) Minimum initial SRI of 78 for low-sloped roof (a slope less than 2:12) and a minimum initial SRI of 29 for a steep-sloped roof (a slope equal to or greater than 2:12). The SRI is calculated in accordance with ASTM E1980. Roof products are certified <u>rated</u> and labeled <u>in accordance with the CRRC-1 Program</u>.</p> <p>(2) a vegetated roof system.</p> <p>CHAPTER 11</p> <p><i>(Modify as shown below)</i></p>		

A106 Supplemental Information

Additional Proposed Change Submittal Form

Copy and paste the blank for below for each addition Proposed Change. Submit the completed change to your TG Chair or Staff Liaison

TG 3	Appendix B	Final Formal Action: TBD
Submitter:	Aaron Gary	
Comment:	Update Appendix B to reflect the most current versions of the documents referenced in Chapter 6 and 9 practices.	
	TABLE B200(1)	
	Examples of Third-party Certification Programs	
	Related Section of Standard	Examples of Third-party Certification Programs Compliant with the Corresponding Section
	901.67(2) Carpets and carpet cushion , 11.901.7(2) Carpets and carpet cushion	Carpet and Rug Institute’s (CRI) Green Label Plus Indoor Air Quality Program
	901.7 (1) Hard-surface flooring, 11.901.7 (1) Hard-surface flooring	UL GREENGUARD Gold Resilient Floor Covering Institute’s FloorScore Indoor Air Certification Program
Reason:	Update the NGBS Standard references to the most recent versions.	
Task Group Recommendation:	Approve as Modified	
Task Group Modification:	See Below	
Task Group Reason:	Updated Chapter 9 references. Were not able to research and add Chapter 6 practices in time allotted.	

TABLE B200(1) Examples of Third-party Certification Programs	
Related Section of Standard	Examples of Third-party Certification Programs Compliant with the Corresponding Section
901.5 Cabinets <u>11.901.5 Cabinets</u>	Kitchen Cabinet Manufacturers Association (KCMA) Environmental Stewardship Program (ESP)
901.67 (2) Carpets and carpet cushion <u>11.901.7 (2) Carpet and carpet cushion</u>	Carpet and Rug Institute’s (CRI) Green Label Plus Indoor Air Quality Program
901.7 (1) Hard-surface flooring <u>11.901.7 (1) Hard-surface flooring</u>	UL GREENGUARD Gold Resilient Floor Covering Institute’s FloorScore Indoor Air Certification Program
901.8 Wall coverings <u>11.901.8 Wall coverings</u>	UL GREENGUARD Gold Scientific Certification Systems (SCS) Indoor Advantage Gold Program
901.9 Architectural coatings <u>11.901.9 Architectural coatings</u>	UL GREENGUARD Gold Scientific Certification Systems (SCS) Indoor Advantage Gold Program Green Seal-11 Standard for Paints and Coatings UL 2768
901.10 Adhesives and sealants <u>11.901.10 Adhesives and sealants</u>	UL GREENGUARD Scientific Certifications Systems (SCS) Indoor Advantage Gold Program Carpet and Rug Institute’s (CRI) Green Label Plus Indoor Air Quality Program Resilient Floor Covering Institute’s FloorScore Indoor Air Certification Program Green Seal-36 Standard for Adhesives for Commercial Use
901.11 Insulation <u>11.901.11 Insulation</u>	UL GREENGUARD Gold Scientific Certifications Systems (SCS) Indoor Advantage Gold Program
901.12 Furniture and Furnishing <u>11.901.12 Furniture and Furnishing</u>	UL GREENGUARD Gold Scientific Certifications Systems (SCS) Indoor Advantage Gold Program BIFMA level certification where 7.6.1 and 7.6.2 are proven to be achieved

P098 Supplemental Information

Section: Appendix D

Section Number: D101.5 Compute Water Rating Index

Reason Statement: Appendix D D101.5 states “The WRI shall be computed as a percentage of the combined indoor and outdoor water use in relation to the combined indoor and outdoor water baseline.” Appendix D, as written, does not address common areas; however, in most other areas of the NGBS, all residential portions of a multifamily building, including residential common areas, are evaluated for compliance. Add an additional section that addresses Indoor Common Areas. The values water volume and use factors included within the proposal below are derived largely from The Handbook of Water Use and Conservation.

Proposed Change:

Revise D101.5 as follows:

D101.5 Overall Water Rating Index (WRI) Calculation. The WRI is an overall rating for the home on an annual basis. The WRI shall be computed as a percentage of the combined indoor and outdoor water use in relation to the combined indoor and outdoor water baseline.

$$\text{WRI} = 100 * (\text{IndoorUseUnits} + \text{IndoorUseCommon} + \text{OutdoorUse}) / (\text{IndoorBaseline} + \text{IndoorBaselineCommon} + \text{OutdoorBaseline})$$

Add the following:

D101.6(3)-CA Indoor Water of Common Areas – Calculations

Indoor water calculations for annual Baseline and annual Use shall be as follows:

$$\begin{aligned} \text{IndoorBaseline} = & [\text{ToiletWater}_{(\text{baseline})} + \text{UrinalWater}_{(\text{baseline})} + \text{ShowerWater}_{(\text{baseline})} + \\ & \text{LavatoryWater}_{(\text{baseline})} + \text{FaucetWater}_{(\text{baseline})} + \text{DishWasherWater}_{(\text{baseline})} + \\ & \text{ClothesWasherWater}_{(\text{baseline})} + \text{StructuralWasteWater}_{(\text{baseline})} + \text{OtherWaterUse}_{(\text{baseline})}] * 365 \\ & \text{days/year} \end{aligned}$$

$$\begin{aligned} \text{IndoorUse} = & [\text{ToiletWater}_{(\text{verified})} + \text{UrinalWater}_{(\text{verified})} + \text{ShowerWater}_{(\text{verified})} + \text{LavatoryWater}_{(\text{verified})} + \\ & \text{FaucetWater}_{(\text{verified})} + \text{DishWasherWater}_{(\text{verified})} + \text{ClothesWasherWater}_{(\text{verified})} + \\ & \text{StructuralWasteWater}_{(\text{verified})} + \text{OtherWaterUse}_{(\text{verified})}] - \text{IndoorWaterReuseCredit}_{(\text{verified})} * 365 \text{ days/year} \end{aligned}$$

D101.6(3)-CA Indoor Water of Common Areas– Baseline Water Use for Devices

Baseline water for each device in Table 1 shall be:

$$\text{Baseline}_{(device)} = \text{Planned Maximum Capacity for Amenity Area(s)} \times \text{Use Factor} \times \text{Baseline Water Volume Per Use}$$

Use factors for water devices are as follows:

**TABLE D101.6(3)-CA
BASELINE WATER USES & VOLUME FOR COMMON AREA DEVICES**

Device	Baseline VolumePerUser (gallons/day/user)	Use Factor(s)
Toilet	3.2	2 uses / day / user
Urinal	1.6	1 use / day / user
Shower	9.01	5.3 minutes / day / user
Lavatory	4	4 minutes / day / user
Faucet	6.8	4 minutes / day / user
Dishwasher	0.45	0.1 loads / day / user
Clothes Washer (residential style)	22.3	0.37 loads / day / user
Clothes Washer (commercial style)	3.256 per cubic foot for Top Loading / 1.517 per CF for Front-Loading (Integrated Water Factors of 8.8 for Top-Loading and 4.1 for Front-Loading)	0.37 loads / day / user

D101.6(4)-CA Indoor Water of Common Areas – Verified Water Use for Devices

Verified use for each device in Table 1 shall be:

$$\text{Verified}_{(device)} = \text{Planned Capacity for Amenity Area(s)} \times \text{Use Factor} \times \text{VerifiedFlowRate}$$

D101.6(5)(a)-CA - Indoor Water of Common Areas – Structural Waste (Verified)

Structural waste, which is the water volume in the pipe between the hot water source and the plumbing fixture or appliance plus the extra volume needed to heat the pipe as hot water is delivered to its use.

- (a) VerifiedStructuralWaste (gallons), shall be field measured as the water volume collected until the temperature of the water equals 100°F at the furthest fixture for a domestic hot water system.
 - (i) This test shall be performed before any other tests in order to avoid preheating the pipes. This test shall use an apparatus with a thermometer and water container.
 - (ii) If there is more than one hot water system serving multifamily amenity areas, all systems shall be tested for structural waste with the worst performing system entered into the calculation.

D101.6(5)(b)-CA Indoor Water of Common Areas – Structural Waste (Baseline)

BaselineStructuralWaste (gallons/day) is approximated based on the amenity area size and configuration. The pipe length is estimated as a horizontal length plus a vertical length.

For Common Areas, the calculation is as follows:

Baseline Structural Waste = Estimated Total Pipe x Pipe Volume (see Table 2)

Estimated Total Pipe is the sum of Estimated Horizontal Pipe and Estimated Vertical Pipe.

Estimated Horizontal Pipe = Total Footprint of All Amenity Areas x 2

Estimated Vertical Pipe = Floor Height of Amenity Areas



National Green Building Standard® **2024 UPDATE**

Topical Zone Supplemental Information

TROPICAL ZONE SUPPLEMENTAL INFORMATION

Staff Note: At the request of the Consensus Committee the Task Group is moving all of the Tropical Zone Practices into their own section. Each Section of the stand alone Tropical Zone Section was submitted as its own Proposed Change. The Draft of this new section was compiled by Home Innovation Staff with input from the Task Group. The full stand alone Tropical Zone Section draft with all of the proposed modifications recommended for approval, with or without modifications, is shown below. Section numbering has been updated and may not match Proposed Changes. Proposal numbers for each change are identified by (blue text).

701.1.4 Alternative Bronze and Silver level compliance. As an alternative, any building that qualifies as an ENERGY STAR Version 3.0 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 building or demonstrates compliance with the ICC IECC or IRC Chapter 11 achieves the Bronze level for Chapter 7. As an alternative, any building that qualifies as an ENERGY STAR Version 3.1 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 (with the baseline at ASHRAE 90.1-2010) building achieves the Silver level for Chapter 7. As an alternative in the Tropical Climate Zone, any building that meets all the requirements in ICC IECC Section R401.2.1 (Tropical Zone) achieves the Silver level for Chapter 7. Buildings without heating and 50% or less air-conditioned space in the Tropical Zone are eligible to earn Silver even if they are located above the IECC elevation limit. (P020) The buildings achieving compliance under § 701.1.4 are not eligible for achieving a rating level above Silver.

Staff Note: Section 701.1.6 was modified by multiple Proposed Changes, with Task Group recommendations that do not align. Consensus Committee should clarify these contradictory recommendations.

- A044 - Task Group recommendation includes deleting section 701.1.6 in its entirety and replacing it with new language
- P021, P023, and A042 modify the existing section.

701.1.6 Alternative Gold level compliance for tropical zones. One- or two-family dwelling in the tropical zone ~~at an elevation less than 2,400 ft. (731.5 m) above sea level that~~ (P021) complies with the following shall achieve the Gold level for Chapter 7:

- (1) The residence complies with ICC IECC R401.2.1 Tropical zone.
- (2) The residence includes a minimum of 2 kW of PV ~~or~~ an on-site renewable energy system (P021) and a minimum of 6 kWh of battery storage.
- (3) Any air conditioning has a minimum of 18 SEER.
- (4) Solar, wind or other renewable energy source supplies not less than 90% of the energy for service water heating.
- (5) Glazing in conditioned spaces has a solar heat gain coefficient of less than or equal to 0.25, or has an overhang with a projection factor equal to or greater than 0.30.
- (6) The exterior roof/ceiling complies with at least two of the following:
 - (a) Minimum roof reflectance and emittance in ICC IECC Table C402.3.
 - (b) Roof or ceiling has insulation with an R-value of R-15 or greater.
 - (c) Includes a radiant barrier.
- (7) Walls comply with at least one of the following:

TROPICAL ZONE SUPPLEMENTAL INFORMATION

- (a) Walls have an overhang with a projection factor equal to or greater than 0.30.
- (b) Walls have insulation with an R-value of R-13 or greater.
- (c) Walls have a minimum initial (A142) solar reflectance of 0.64 measured in accordance with the CRRC-2 Wall Rating Program (A142).
- (8) A ceiling fan is provided for bedrooms and the largest space that is not used as a bedroom; alternately a whole house fan is provided.
- (9) ~~Wiring sufficient for (P023)~~ A Level 2 (208/240V 40-80 amp) electric vehicle charging station is installed on the building site.

(A044)

Delete Section 701.1.6 in its entirety and replace with:

701.1.6 Alternative compliance for tropical zones (705). Buildings in Tropical Zones where more than one-half of the occupied space is not air conditioned and 100 percent of the space is not heated can use this option to comply with chapter 7. Building can achieve either a silver or gold compliance level depending on the practices chosen. The building shall comply with the 705.1 mandatory practices and 705.2 additional practices. Note: To achieve a Gold level certification, all Gold level additional practices must be implemented.

705 ALTERNATIVE COMPLIANCE FOR TROPICAL ZONES

705.1 Mandatory Practices

705.1.2 High-Efficacy Lighting (A127)

Staff Note: For this section, TG5 and TG8 recommended different modifications. Both options are shown here:

Task Group 5: All lamps shall have an initial efficacy of not less than 75 lumens per watt, or luminaires shall have an efficacy of not less than 55 lumens per watt.

Task Group 8: All lamps shall have an efficacy of not less than 75 lumens per watt, or luminaires shall have an efficacy of not less than 55 lumens per watt.

705.1.3 Attics (A128)

Where attics are present, attics above the insulation are vented and attics below the insulation are unvented.

705.1.4 Roofs (A129)

Roof Surfaces have a slope of not less than ¼ unit vertical in 12 units horizontal (2.0 -percent slope). The finished roof does not have water accumulation areas.

705.1.5 Operable Fenestration (A130)

705.1.5.1 Ventilation Area (A131)

TROPICAL ZONE SUPPLEMENTAL INFORMATION

Staff Note: For this section, TG5 and TG8 recommended different modifications. Both options are shown here:

Task Group 5: Operable fenestration provides an openable area of not less than 10 percent of the entire living space.

Task Group 8: Operable fenestration provides a ventilation area of not less than 10 percent of the entire living space.

705.1.5.2 Bedroom Exterior Walls (A132)

Bedrooms with exterior walls facing two different directions have operable fenestration on exterior walls facing two directions.

705.1.5.3 Glazing in Conditioned Spaces (A133)

Staff Note: For this section, TG5 and TG8 recommended different modifications. Both options are shown here:

Task Group 5: Glazing in conditioned spaces has a solar heat gain coefficient (SHGC) as described in Table 705.3, or has an overhang with a projection factor equal to or greater than 0.30 and a solar heat gain coefficient of no greater than 0.30.

Task Group 8: Glazing in conditioned spaces has a solar heat gain coefficient (SHGC) as described in Table 705.3, or has an overhang with a projection factor equal to or greater than 0.30.

705.1.6 Interior Doors (A134)

Staff Note: For this section, TG5 and TG8 recommended different modifications. Both options are shown here:

Task Group 5: Bedroom doors are capable of being secured in a fully open position.

Task Group 8: Bedroom doors are capable of being secured in the open position.

705.2 Additional Practices (A135)

705.2 Water Heater (A136)

Task Group 5:

Renewable Energy source is used to provide annual service water heating for minimum percentages shown in Table 705.2(1)

Table 705.2(1)	
Renewable Energy for Service Water Heater	
$\geq 80\%$ 80%	$\geq 90\%$ 80%
Silver	Gold

TROPICAL ZONE SUPPLEMENTAL INFORMATION

Task Group 8:

Renewable Energy source is used for service water heating in accordance with Table 705.2(1).

Table 705.2(1)

Renewable Energy for Service Water Heater	
<u>= 80%</u>	<u>> 80%</u>
<u>Silver</u>	<u>Gold</u>

705.3 Glazing. Solar Heat Gain Coefficient (SHGC). (A137)

Task Group 5:

All glazing in conditioned spaces has an SHGC according to Table 705.3 below:

Table 705.3	
Solar Heat Gain Coefficient SHGC	
<u>0.26 - 0.30</u>	<u>≤ 0.25</u>
<u>Silver</u>	<u>Gold</u>

Task Group 8:

All glazing in conditioned spaces has an SHGC according to Table 705.3 below:

Table 705.3	
Solar Heat Gain Coefficient SHGC	
<u>0.26 - 0.4</u>	<u>= 0.25</u>
<u>Silver</u>	<u>Gold</u>

705.4 Roof (A138)

Task Group 5:

(1) The exterior roof surface complies with a least one of the following practices below.....

Silver

- a) Minimum initial solar reflectance and emittance of 0.75 and 0.75 respectively
- b) Minimum initial solar reflectance index of 75
- c) Roof or Ceiling has insulation with an R-Value of R-13 or greater
- d) Includes a radiant barrier

(2) The exterior roof surface complies with an additional practice above..... Gold

Task Group 8:

(1) The exterior roof surface complies with a least one of the following practices below.....

Silver

TROPICAL ZONE SUPPLEMENTAL INFORMATION

- a) Minimum initial solar reflectance and emittance of 0.75 and 0.75 respectively
- b) Minimum initial solar reflectance index of 75
- c) Roof or Ceiling has insulation with an R-Value of R-13 or greater
- d) Includes a radiant barrier

(2) The exterior roof surface complies with an additional practice above..... Gold

705.5 Ceiling Fans (A139)

Task Group 5:

(1) A ceiling fan rough-in is provided for all bedrooms and the largest space that is not used as a bedroom..... Silver

(2) A ceiling fan is provided for all bedrooms and the largest space that is not used as a bedroom..... Gold

Task Group 8:

(1) A ceiling fan rough-in is provided for bedrooms and the largest space that is not used as a bedroom..... Silver

(2) A ceiling fan is provided for bedrooms and the largest space that is not used as a bedroom..... Gold

705.6 Photovoltaic System (A140)

The residence includes a minimum of 2kW of PV and a minimum of 6kWh of battery storage per dwelling unit.....Gold

705.7 Air Conditioning (A141)

All installed air conditioners have a minimum of 18 SEER.....Gold

Section 14 (A142)

REFERENCED DOCUMENTS

1402.0 Referenced Documents

(Modify as shown below)

Cool Roof Rating Council Documents

DOCUMENT	DATE	TITLE	SECTION
<u>CRRC-2</u>	<u>2022</u>	<u>CRRC-2 Wall Product Rating Program Manual</u>	<u>701.1.6(7)</u>

A125 Supplemental Information

701.1. Mandatory requirements. The building shall comply with § 702 (Performance Path), § 703 (Prescriptive Path), § 704 (ERI Target Path), 701.1.4 (Alternative Bronze and Silver Path) , or § 705 (Tropical Path). Items listed as "mandatory" in § 701.4 shall apply to 702, 703 and 704 paths. For 702, 703 and 704 paths, unless except where otherwise noted, buildings in the Tropical Climate Zone shall comply with Climate Zone 1 requirements.

701.1.4 Alternative Bronze and Silver level compliance. As an alternative, any building that qualifies as an ENERGY STAR Version 3.0 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 building or demonstrates compliance with the ICC IECC or IRC Chapter 11 achieves the Bronze level for Chapter 7. As an alternative, any building that qualifies as an ENERGY STAR Version 3.1 Certified Home or ENERGY STAR Multifamily High Rise Version 1.0 Rev. 03 (with the baseline at ASHRAE 90.1-2010) building achieves the Silver level for Chapter 7. As an alternative in the Tropical Climate Zone, any building that meets all the requirements in ICC IECC Section R401.2.1 (Tropical Zone) achieves the Silver level for Chapter 7. Buildings without heating and 50% or less air-conditioned space in the Tropical Zone are eligible to earn Silver regardless of elevation. The buildings achieving compliance under § 701.1.4 are not eligible for achieving a rating level above Silver.

Delete Section 701.1.6 in its entirety and replace with:

701.1.6 Alternative Silver or Gold Level Compliance for Tropical Zones (705). Buildings in Tropical Zones where more than 50 percent of the occupied space is not air conditioned and 100 percent of the occupied space is not heated shall be permitted to use this option to comply with chapter 7. Building shall be permitted to achieve either a silver or gold compliance level depending on the practices chosen. The building shall comply with the 705.1 mandatory practices and 705.2 additional practices. To achieve certification under this path all silver level practices under 705.2 Additional practices shall be implemented. To achieve a Gold level certification, all Gold level additional practices shall be implemented.

705 ALTERNATIVE COMPLIANCE FOR TROPICAL ZONES

705.1 Mandatory Practices

705.1.2 High-Efficacy Lighting

All permanently installed lighting fixtures, excluding appliance lighting fixtures, shall contain only high-efficacy lighting sources.

705.1.3 Attics

Attics above the insulation are vented and attics below the insulation are unvented.

705.1.4 Roofs

Roof surfaces have a slope of not less than ¼ unit vertical in 12 units horizontal (2.0 -percent slope). The roof does not have water accumulation areas.

705.1.5 Operable Fenestration

705.1.5.1 Ventilation Area

A125 Supplemental Information

Operable fenestration provides an openable area of not less than 10 percent of the floor area of the living space.

705.1.5.2 Bedroom Exterior Walls

Bedrooms with exterior walls facing two or more directions have operable fenestration on exterior walls facing not less than two directions.

705.1.5.3 Glazing in Conditioned Spaces

Glazing in conditioned spaces has a solar heat gain coefficient (SHGC) as described in Table 705.3, or has an overhang with a projection factor equal to or greater than 0.30 and a solar heat gain coefficient of no greater than 0.30.

Exception: jalousie windows.

705.1.6 Interior Doors

Bedroom doors are capable of being secured in an open position.

705.2 Additional Practices

705.2 Water Heater

A renewable energy source provides annual service water heating greater than or equal to the percentages in Table 705.2(1)

Table 705.2(1)	
Renewable Energy for Service Water Heater	
<u>≥80%</u> 80%	<u>≥ 90%</u> 80%
<u>Silver</u>	<u>Gold</u>

705.3 Glazing. Solar Heat Gain Coefficient (SHGC).

Glazing in conditioned spaces has an SHGC according to Table 705.3 below:

Table 705.3	
<u>Solar Heat Gain Coefficient SHGC</u>	
<u>0.26 - 0.30</u>	<u>≤ 0.25</u>
<u>Silver</u>	<u>Gold</u>

705.9 Exterior Walls

Exterior walls comply with at not less than one of the following:

A125 Supplemental Information

- 1) Silver – one practice
- 2) Gold – two practices
 - (a) Walls have insulation with an R-value of R-13 or greater.
 - (b) Walls have a solar reflectance of 0.64.

705.5 Roof

The exterior roof surface complies with not less than one of the following.....

- 1) Silver – one practice
- 2) Gold – two or more practices
 - a) Minimum initial solar reflectance of 0.75 and emittance of 0.75
 - b) Minimum initial solar reflectance index of 75
 - c) Roof or Ceiling has insulation with an R-Value of R-13 or greater
 - d) Includes a radiant barrier

705.6 Ceiling Fans

(1) A ceiling fan rough-in is provided for bedrooms and the largest living space that is not used as a bedroom..... Silver

(2) A ceiling fan is provided for bedrooms and the largest living space that is not used as a bedroom..... Gold

705.7 Air Conditioning

All installed air conditioners have a minimum of 18 SEER.....Gold

705.8 renewable energy system

For each dwelling unit, the building or lot is served by a minimum of 2kW renewable energy system and a minimum of 6kWh of energy storage.....Gold

705.9 Electric vehicle charging

Wiring sufficient for a A Level 2 (208/240V 32-80 amp) electric vehicle charging station is installed on the building site.....Silver

A Level 2 (208/240V 32-80 amp) electric vehicle charging station is installed on the building site.....Gold