

2020 NGBS MANDATORY ITEMS

This document is not intended to serve as a substitute for the 2020 NGBS, but rather as a quick guide to the mandatory items required for compliance.

GREEN BUILDING PRACTICES		M=Mandatory
		POINTS
SECTION 4: SITE DESIGN AND DEVELOPMENT		
402	PROJECT TEAM, MISSION STATEMENT, AND GOALS	
	402.3 Project checklist. A checklist of green development practices to be used on the project is created, followed, and completed by the project team regarding the site.	M 4
403	SITE DESIGN	
	403.1 Natural resources. Natural resources are conserved by one or more of the following:	
	(1) A natural resources inventory is used to create the site plan.	M 5
	(2) A plan to protect and maintain priority natural resources/areas during construction is created. (Also see § 404 for guidance in forming the plan.)	M 5
SECTION 6: RESOURCE EFFICIENCY		
601	QUALITY OF CONSTRUCTION MATERIALS AND WASTE	
	601.1 Conditioned floor area. Finished floor area of a dwelling unit or sleeping unit is limited. Finished floor area is calculated in accordance with ANSI Z765 for single family and ANSI/BOMA Z65.4 for multifamily buildings. Only the finished floor area for stories above grade plane is included in the calculation. <i>[For every 100 sq. ft. (9.29 m²) over 4,000 sq. ft. (372 m²), 1 point is to be added to rating level points shown in Table 303, Category 7 for each rating level.]</i>	
	(6) greater than 4,000 sq. ft. (372 m ²).....	M
602	ENHANCED DURABILITY AND REDUCED MAINTENANCE	
	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.	M
	602.1.3.1 Where required by the IRC or IBC for habitable and usable spaces below grade, exterior drain tile is installed.....	M
	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.	
	(2) Walls. Dampproof walls are provided below finished grade.	M
	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:	
	(2) 6-mil polyethylene sheeting, or other Class I vapor retarder installed in accordance with IRC Section 408.3 or Section 506.	M
	602.1.7.1 Moisture control measures are in accordance with the following:	
	(2) Insulation in cavities is dry in accordance with manufacturer’s instructions when enclosed (e.g., with drywall).	M 2

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<p>602.1.8 Water-resistive barrier. Where required by the IRC or IBC, a water-resistive barrier and/or drainage plane system is installed behind exterior veneer and/or siding.</p>	M
<p>602.1.9 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>(1) Flashing is installed at all the following locations, as applicable:</p> <ul style="list-style-type: none"> (a) around exterior fenestrations, skylights, and doors; (b) at roof valleys; (c) at all building-to-deck, -balcony, -porch, and -stair intersections; (d) at roof-to-wall intersections, at roof-to-chimney intersections, at wall-to-chimney intersections, and at parapets; (e) at ends of and under masonry, wood, or metal copings and sills; (f) above projecting wood trim; (g) at built-in roof gutters; and (h) drip edge is installed at eave and rake edges. 	M
<p>602.1.11 Tile backing materials. Tile backing materials installed under tiled surfaces in wet areas are in accordance with ASTM C1178, C1278, C1288, or C1325.</p>	M
<p>602.1.13 Ice barrier. In areas where there has been a history of ice forming along the eaves causing a backup of water, an ice barrier is installed in accordance with the IRC or IBC at roof eaves of pitched roofs and extends a minimum of 24 in. (610 mm) inside the exterior wall line of the building.</p>	M
<p>602.1.14 Architectural features. Architectural features that increase the potential for water intrusion are avoided:</p>	
<p>(1) All horizontal ledgers are sloped away to provide gravity drainage as appropriate for the application.....</p>	M 1
<p>602.4.1 Finished grade at all sides of a building is sloped to provide a minimum of 6 in. (152 mm) of fall within 10 ft. (3048 mm) of the edge of the building. Where lot lines, walls, slopes, or other physical barriers prohibit 6 in. (152 mm) of fall within 10 ft. (3048 mm), the final grade is sloped away from the edge of the building at a minimum slope of 2%.....</p>	M
605 RECYCLED CONSTRUCTION WASTE	
<p>605.1 Hazardous waste. The construction and waste management plan shall include information on the proper handling and disposal of hazardous waste. Hazardous waste is properly handled and disposed.</p>	M
SECTION 7: ENERGY EFFICIENCY	
701 MINIMUM ENERGY EFFICIENCY REQUIREMENTS	
<p>701.1 Mandatory requirements. The building shall comply with § 702 (Performance Path), § 703 (Prescriptive Path), or § 704 (ERI Target Path). Items listed as “mandatory” in § 701.4 apply to all Paths. Unless otherwise noted, buildings in the Tropical Climate Zone shall comply with Climate Zone 1 requirements.</p>	
<p>701.1.1 Minimum Performance Path requirements. A building complying with § 702 shall include a minimum of two practices from § 705, or a minimum of one practice from § 705 and a minimum of one practice from § 706.</p>	

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701.1.3 ERI Target Path requirements. A building complying with § 704 shall obtain a minimum of 30 points from § 704 and shall include a minimum of two practices from § 705, or a minimum of one practice from § 705 and a minimum of one practice from § 706.

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. The buildings achieving compliance under § 701.1.4 are not eligible for achieving a rating level above Silver.

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 cfm/sf of enclosure bounding the apartment at an induced pressure difference of 50 pascals.

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 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:
 - (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 solar reflectance of 0.64.
- (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 a Level 2 (208/240V 40-80 amp) electric vehicle charging station is installed on the building site.

701.2 Emerald level points. The Performance Path (§ 702) or the ERI Target Path (§ 704) shall be used to achieve the Emerald level.

701.3 Adopting entity review. A review by the Adopting Entity or designated third party shall be conducted to verify design and compliance with Chapter 7.

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701.4 Mandatory practices	
701.4.1.1 HVAC system sizing. Space heating and cooling system is sized according to heating and cooling loads calculated using ACCA Manual J or equivalent. Equipment is selected using ACCA Manual S or equivalent.	M
701.4.1.2 Radiant and hydronic space heating. Where installed as a primary heat source in the building, radiant or hydronic space heating system is designed, installed, and documented, using industry-approved guidelines and standards (e.g., ACCA Manual J, AHRI I=B=R, ACCA 5 QI, or an accredited design professional's and manufacturer's recommendation).....	M
701.4.2.1 Duct air sealing. Ducts are air sealed. All duct sealing materials are in conformance with UL 181A or UL 181B specifications and are installed in accordance with manufacturer's instructions.	M
701.4.2.2 Ducts and Plenums. Building framing cavities are not used as ducts or plenums.	M
701.4.2.3 Duct system sizing. Duct system is sized and designed in accordance with ACCA Manual D or equivalent.....	M
701.4.3.1 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:	M
<ul style="list-style-type: none"> (a) All joints, seams and penetrations. (b) Site-built windows, doors, and skylights. (c) Openings between window and door assemblies and their respective jambs and framing. (d) Utility penetrations. (e) Dropped ceilings or chases adjacent to the thermal envelope. (f) Knee walls. (g) Walls, ceilings, and floors separating conditioned spaces from unconditioned spaces. (h) Behind tubs and showers on exterior walls. (i) Common walls between dwelling units or sleeping units. (j) Attic access openings. (k) Joints of framing members at rim joists. (l) Top and bottom plates. (m) Other sources of infiltration. 	
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.....	M
<p>(1) Testing. Building envelope tightness is tested. Testing is conducted in accordance with ASTM E779 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. Testing is conducted under the following conditions:</p> <ul style="list-style-type: none"> (a) Exterior windows and doors, fireplace and stove doors are closed, but not sealed; (b) Dampers are closed, but not sealed, including exhaust, intake, make-up air, backdraft and flue dampers; (c) Interior doors are open; (d) Exterior openings for continuous ventilation systems and heat recovery ventilators are closed and sealed; (e) Heating and cooling systems are turned off; 	

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<ul style="list-style-type: none"> (f) HVAC duct terminations are not sealed; and (g) Supply and return registers are not sealed. 	
<p>Multifamily Building Note: Testing by dwelling units, groups of dwelling units, or the building as a whole is acceptable.</p>	
<p>(2) Visual inspection. The air barrier and insulation items listed in Table 701.4.3.2(2) are field verified by visual inspection.</p>	
<p>701.4.3.2.1 Grade I insulation installations. Field-installed insulation products to ceilings, walls, floors, band joists, rim joists, conditioned attics, basements, and crawlspaces, except as specifically noted, are verified by a third-party as Grade I in accordance with the following:.....</p> <ul style="list-style-type: none"> (1) Inspection is conducted before insulation is covered. (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. (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). (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. (5) Exterior rigid insulation has substantial contact with the structural framing members or sheathing materials and is tightly fitted at joints. (6) Cavity insulation is split, installed, and/or fitted tightly around wiring and other services. (7) Exterior sheathing is not visible from the interior through gaps in the cavity insulation. (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. (9) Where properly installed, ICFs, SIPs, and other wall systems that provide integral insulation are deemed in compliance with this section. 	M
<p>701.4.3.4 Fenestration air leakage. Windows, skylights and sliding glass doors have an air infiltration rate of no more than 0.3 cfm per sq. ft. (1.5 L/s/m²), and swinging doors no more than 0.5 cfm per sq. ft. (2.6 L/s/m²), when tested in accordance with NFRC 400 or AAMA/WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory and listed and labeled. For site-built fenestration, a test report by an accredited, independent laboratory verifying compliance with the applicable infiltration rate shall be submitted to demonstrate compliance with this practice. This practice does not apply to field-fabricated fenestration products.</p>	M
<p>Exception: For Tropical Zones Only, Jalousie windows are permitted to be used as a conditioned space boundary and shall have an air infiltration rate of not more than 1.3 cfm per sq. ft.</p>	
<p>701.4.3.5 Lighting in building thermal envelope. Luminaires installed in the building thermal envelope which penetrate the air barrier are sealed to limit air leakage between conditioned and unconditioned spaces. All luminaires installed in the building thermal envelope which penetrate the air barrier are IC-rated and labeled as meeting ASTM E283 when tested at 1.57 psf (75 Pa) pressure differential with no more than 2.0 cfm (0.944 L/s) of air movement from the conditioned space to the ceiling cavity. All luminaires installed in the building thermal envelope which penetrate the air barrier are sealed with a gasket or caulk between the housing and the interior of the wall or ceiling covering.....</p>	M

M=Mandatory

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<p>701.4.4 High-efficacy lighting. Lighting efficacy in dwelling units or sleeping units is in accordance with one of the following:</p> <p>(1) A minimum of 75% of the total hard-wired lighting fixtures or the bulbs in those fixtures qualify as high efficacy or equivalent</p> <p>(2) Lighting power density, measured in watts/sq. ft., is 1.1 or less.</p>		M
<p>701.4.5 Boiler piping. Boiler piping in unconditioned space supplying and returning heated water or steam is insulated.....</p>		M
702	PERFORMANCE PATH	
<p>702.1 Point allocation. Points from § 702 (Performance Path) shall not be combined with points from § 703 (Prescriptive Path) or § 704 (ERI Target Path).</p>		M for § 702
<p>702.2 Energy performance levels</p> <p>702.2.1 ICC IECC analysis. 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>		M for § 702
703	PRESCRIPTIVE PATH	
<p>703.1 Mandatory practices</p>		30
<p>703.1.1 Building thermal envelope compliance. The building thermal envelope is in compliance with § 703.1.1.1 or § 703.1.1.2.</p> <p>Exception: Section 703.1.1 is not required for Tropical Climate Zone.</p> <p>703.1.1.1 Maximum UA and SHGC. For ICC IECC residential buildings, the total building UA is less than or equal to the total maximum UA as computed by ICC IECC Section R402.1.5. The SHGC requirements for fenestration in Table R402.1.2 are also met. For ICC IECC commercial buildings, the total UA is less than or equal to the sum of the UA for 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 SHGC requirements for fenestration in Table C402.4 are also met. The total UA proposed and baseline calculations are documented. REScheck or COMcheck is deemed to provide UA calculation documentation.</p> <p>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.</p> <p>703.1.2 Building envelope leakage. The building thermal envelope is in accordance with ICC IECC R402.4.1.2 or C402.5 as applicable.</p> <p>Exception: Section 703.1.2 is not required for Tropical Climate Zone.</p> <p>11.703.1.3 Duct testing. The duct system is in accordance with ICC IECC R403.3.2 through R403.3.5 as applicable.</p>		M for § 703
<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.....</p>		M for § 703

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704	ERI TARGET PATH	
<p>704.1 ERI target compliance. Compliance with the energy chapter shall be permitted to be based on the EPA National ERI Target Procedure for ENERGY STAR Certified Homes. Points from § 704 (ERI Target) shall not be combined with points from § 702 (Performance Path) or § 703 (Prescriptive Path).</p> <p>Dwelling ratings shall be submitted to a Rating Certification Body approved by the Adopting Entity for calculating points under this section.</p> <p>SECTION 8: WATER EFFICIENCY</p>		
801	INDOOR AND OUTDOOR WATER USE	
<p>801.1 Mandatory requirements. The building shall comply with § 802 (Prescriptive Path) and § 803 (Innovative Practices) or § 804 (Performance Path). Points from § 804 (Performance Path) shall not be combined with points from § 802 (Prescriptive Path) or § 803 (Innovative Practices). The mandatory provisions of § 802 (Prescriptive Path) are required when using the Water Rating Index of § 804 (Performance Path) for Chapter 8 Water Efficiency compliance.</p>		
802	PRESCRIPTIVE PATH	
<p>802.5.4 Water closets and urinals are in accordance with the following:</p> <p>(1) Gold and Emerald levels: All water closets and urinals are in accordance with § 802.5.4.</p> <p>802.6.1 Where an irrigation system is installed, an irrigation plan and implementation are executed by a qualified professional or equivalent.....</p> <p>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>SECTION 9: INDOOR ENVIRONMENTAL QUALITY</p>		M
901	POLLUTANT SOURCE CONTROL	
<p>901.1.4 Gas-fired fireplaces and direct heating equipment is listed and is installed in accordance with the NFPA 54, ICC IFGC, or the applicable local gas appliance installation code. Gas-fired fireplaces within dwelling units or sleeping units and direct heating equipment are vented to the outdoors. Alcohol burning devices and kerosene heaters are vented to the outdoors.....</p> <p>901.2.1 Solid fuel-burning fireplaces, inserts, stoves and heaters are code compliant and are in accordance with the following requirements:</p> <p>(1) Site-built masonry wood-burning fireplaces use outside combustion air and include a means of sealing the flue and the combustion air outlets to minimize interior air (heat) loss when not in operation.....</p> <p>(2) Factory-built, wood-burning fireplaces are in accordance with the certification requirements of UL 127 and are an EPA Phase 2 Emission Level Qualified Model.</p> <p>(3) Wood stove and fireplace inserts, as defined in UL 1482 Section 3.8, are in accordance with the certification requirements of UL 1482 and are in accordance with the emission requirements of the EPA Certification and the State of Washington WAC 173-433-100(3).</p> <p>(4) Pellet (biomass) stoves and furnaces are in accordance with ASTM E1509 or are EPA certified.</p> <p>(5) Masonry heaters are in accordance with the definitions in ASTM E1602 and IBC Section 2112.1.</p>		M M 4 6 6 6

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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
901.4 Wood materials. A minimum of 85% of material within a product group (i.e., wood structural panels, countertops, composite trim/doors, custom woodwork, and/or component closet shelving) is manufactured in accordance with the following:		
(1) Structural plywood used for floor, wall, and/or roof sheathing is compliant with DOC PS 1 and/or DOC PS 2. OSB used for floor, wall, and/or roof sheathing is compliant with DOC PS 2. The panels are made with moisture-resistant adhesives. The trademark indicates these adhesives as follows: Exposure 1 or Exterior for plywood, and Exposure 1 for OSB.....		M
901.6 Carpets. Wall-to-wall carpeting is not installed adjacent to water closets and bathing fixtures.		M
901.13 Carbon monoxide (CO) alarms. A carbon monoxide (CO) alarm is provided in accordance with the IRC Section R315.		M
902 POLLUTANT CONTROL		
902.1.1 Spot ventilation is in accordance with the following:		
(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]
(2) Clothes dryers (except listed and labeled condensing ductless dryers) are vented to the outdoors. ...		M
902.2.1 One of the following whole building ventilation systems is implemented and is in accordance with the specifications of ASHRAE Standard 62.2-2010 Section 4 and an explanation of the operation and importance of the ventilation system is included in either § 1001.1 or § 1002.2. <i>[* Mandatory where the maximum air infiltration rate is less than 5.0 ACH50]</i>		M *
(1) Exhaust or supply fan(s) ready for continuous operation and with appropriately labeled controls		3
(2) Balanced exhaust and supply fans with supply intakes located in accordance with the manufacturer’s guidelines so as to not introduce polluted air back into the building		6
(3) Heat-recovery ventilator		7
(4) Energy-recovery ventilator		8
(5) Ventilation air is preconditioned by a system not specified above		10
902.3 Radon reduction measures. Radon reduction measures are in accordance with IRC Appendix F 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).		
(1) Buildings located in Zone 1		
(a) a passive radon system is installed		M

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<p>902.3.2 Radon testing. Radon testing is mandatory for Zone 1.</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.</p> <p>(1) Testing specifications. Testing is performance as specified in (a) through (j). Testing of a representative sample shall be permitted for multifamily buildings only</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> <p>(d) Testing is not performed in a closet, hallway, stairway, laundry room, furnace room, kitchen or bathroom.</p> <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>(2) Testing results. A radon test done in accordance with 902.3.2(1) and completed before occupancy receives a results of 2 pCi/L or less.</p>		<p>8</p>
<p>902.6 Living space contaminants. The living space is sealed in accordance with § 701.4.3.1 to prevent unwanted contaminants.</p>		<p>6</p>
<p>904 INDOOR AIR QUALITY</p>		
<p>904.3 Microbial growth & moisture inspection and remediation. A visual inspection is performed to confirm the following:</p> <p>(1) Verify that no visible signs of discoloration and microbial growth on ceilings, walls or floors, or other building assemblies; or if minor microbial growth is observed (less than within a total area of 25 sq. ft.) in homes or multifamily buildings, reference EPA Document 402-K-02-003 (A Brief Guide to Mold, Moisture, and Your Home) for guidance on how to properly remediate the issue. If microbial growth is observed, on a larger scale in homes or multifamily buildings (greater than 25 sq. ft.), reference EPA Document 402-K-01-001 (Mold Remediation in Schools and Commercial Buildings) for guidance on how to properly remediate the issue.....</p> <p>(2) Verify that there are no visible signs of water damage or pooling. If signs of water damage or pooling are observed, verify that the source of the leak has been repaired, and that damaged materials are either properly dried or replaced as needed.</p>		<p>M</p> <p>M</p>

GREEN BUILDING PRACTICES		POINTS
SECTION 10: OPERATION, MAINTENANCE, AND BUILDING OWNER EDUCATION		
1001	HOMEOWNER'S MANUAL AND TRAINING GUIDELINES FOR ONE- AND TWO-FAMILY DWELLINGS	
	1001.1 Homeowner's manual. A homeowner's manual is provided and stored in a permanent location in the dwelling that includes the following, as available and applicable. <i>[1 point awarded per two items. Points awarded for non-mandatory items.]</i>	1 [8 max]
	(1) A National Green Building Standard certificate with a web link and completion document.	M
	(2) List of green building features (can include the National Green Building Standard checklist).....	M
	(3) Product manufacturer's manuals or product data sheet for installed major equipment, fixtures, and appliances. If product data sheet is in the building owners' manual, manufacturer's manual may be attached to the appliance in lieu of inclusion in the building owners' manual.	M
	1001.2 Training of initial homeowners. Initial homeowners are familiarized with the role of occupants in achieving green goals. Training is provided to the responsible party(ies) regarding equipment operation and maintenance, control systems, and occupant actions that will improve the environmental performance of the building. These include:	M 8
	(1) HVAC filters.	
	(2) Thermostat operation and programming.	
	(3) Lighting controls.	
	(4) Appliances operation.	
	(5) Water heater settings and hot water use.	
	(6) Fan controls.	
	(7) Recycling and composting practices.	
	(8) Whole-dwelling mechanical ventilation systems.	
1002	CONSTRUCTION, OPERATION, AND MAINTENANCE MANUALS AND TRAINING FOR MULTIFAMILY BUILDINGS	
	1002.1 Building construction manual. A building construction manual, including five or more of the following, is compiled and distributed in accordance with § 1002.0. <i>[Points awarded for non-mandatory items.]</i>	1 per 2 items
	(1) A narrative detailing the importance of constructing a green building, including a list of green building attributes included in the building. This narrative is included in all responsible parties' manuals.	M
	(2) A local green building program certificate as well as a copy of the <i>National Green Building Standard™</i> , as adopted by the Adopting Entity, and the individual measures achieved by the building.....	M
	(3) Warranty, operation, and maintenance instructions for all equipment, fixtures, appliances, and finishes.	M
	1002.2 Operations manual. Operations manuals are created and distributed to the responsible parties in accordance with § 1002.0. Between all of the operation manuals, five or more of the following options are included. <i>[Points awarded for non-mandatory items.]</i>	1 per 2 items
	(1) A narrative detailing the importance of operating and living in a green building. This narrative is included in all responsible parties' manuals.....	M
	(2) A list of practices to conserve water and energy (e.g., turning off lights when not in use, switching the rotation of ceiling fans in changing seasons, purchasing ENERGY STAR appliances and electronics).....	M

GREEN BUILDING PRACTICES	POINTS
<p>1002.3 Maintenance manual. Maintenance manuals are created and distributed to the responsible parties in accordance with § 1002.0. Between all of the maintenance manuals, five or more of the following options are included. <i>[Points awarded for non-mandatory items.]</i>.....</p> <p>(1) A narrative detailing the importance of maintaining a green building. This narrative is included in all responsible parties' manuals.</p> <p>1002.4 Training of building owners. Building owners are familiarized with the role of occupants in achieving green goals. On-site training is provided to the responsible party(ies) regarding equipment operation and maintenance, control systems, and occupant actions that will improve the environmental performance of the building. These include:</p> <p>(1) HVAC filters (2) thermostat operation and programming (3) lighting controls (4) appliances operation (5) water heater settings and hot water use (6) fan controls (7) recycling and composting practices (8) Whole-dwelling mechanical ventilation systems</p> <p>1002.5 Multifamily occupant manual. An occupant manual is compiled and distributed in accordance with § 1002.0. <i>[Points awarded for non-mandatory items.]</i></p> <p>(1) NGBS certificate</p> <p>(2) List of green building features</p> <p>(3) Operations manuals for all appliances and occupant operated equipment including lighting and ventilation controls, thermostats, etc.....</p>	<p>1 per 2 items</p> <p>M</p> <p>M 8</p> <p>1 per 2 items</p> <p>M</p> <p>M</p> <p>M</p>
<p>SECTION 11: REMODELING</p>	
<p>11.601 QUALITY OF CONSTRUCTION MATERIALS AND WASTE</p>	
<p>11.601.1 Conditioned floor area. Finished floor area of a dwelling unit or sleeping unit after the remodeling is limited. Finished floor area is calculated in accordance with ANSI Z765 for single family and ANSI/BOMA Z65.4 for multifamily buildings. Only the finished floor area for stories above grade plane is included in the calculation. <i>[For every 100 sq. ft. (9.29 m²) over 4,000 sq. ft. (372 m²), 1 point is to be added the threshold points shown in Table 305.3.7 for each rating level.]</i></p> <p>(6) greater than 4,000 sq. ft. (372 m²).....</p>	<p>M</p>
<p>11.602 ENHANCED DURABILITY AND REDUCED MAINTENANCE</p>	
<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 1910 and 1805.4.1. <i>[*This practice is not mandatory for existing slabs without apparent moisture problem.]</i></p> <p>11.602.1.3.1 Where required by the IRC or IBC for habitable and usable spaces below grade, exterior drain tile is installed. <i>[*This practice is not mandatory for existing space without apparent moisture problem.]</i></p> <p>11.602.1.4.1 Vapor retarder for all new unconditioned vented crawlspace foundations and not less than 25% of the total area after the remodel 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) Walls. Dampproof walls are provided below finished grade. <i>[*This practice is not mandatory for existing walls without apparent moisture problem.]</i></p>	<p>M*</p> <p>M*</p> <p>M*</p>

GREEN BUILDING PRACTICES	POINTS
<p>11.602.1.4.2 For all new foundations and not less than 25% of the total area of the crawlspace after the remodel, 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>(2) 6 mil polyethylene sheeting or other Class I vapor retarder installed in accordance with IRC Section 408.3 or Section 506. <i>[*This practice is not mandatory for existing foundations without apparent moisture problem.]</i>.....</p>	M*
<p>11.602.1.7.1 Moisture control measures are in accordance with the following:</p>	
<p>(2) Insulation in cavities is dry in accordance with manufacturer’s instructions when enclosed (e.g., with drywall).</p>	M 2
<p>11.602.1.8 Water-resistive barrier. Where required by the IRC or IBC, a water-resistive barrier and/or drainage plane system is installed behind newly installed exterior veneer and/or siding and where there is evidence of a moisture problem.</p>	M
<p>11.602.1.9 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><i>[Points awarded only when practices (2)-(7) are implemented in all newly installed construction and not less than 25% of the applicable building elements for the entire building after the remodel.]</i></p>	
<p>(1) Flashing is installed at all the following locations, as applicable: <i>[*These practices are not mandatory for existing building elements without apparent moisture problem.]</i>.....</p> <ul style="list-style-type: none"> (a) around exterior fenestrations, skylights and doors; (b) at roof valleys; (c) at all building-to-deck, -balcony, -porch, and -stair intersections; (d) at roof-to-wall intersections, at roof-to-chimney intersections, at wall-to-chimney intersections, and at parapets; (e) at ends of and under masonry, wood, or metal copings and sills; (f) above projecting wood trim; (g) at built-in roof gutters; and (h) drip edge is installed at eave and rake edges. 	M*
<p>11.602.1.11 Tile backing materials. Tile backing materials installed under tiled surfaces in wet areas are in accordance with ASTM C1178, C1278, C1288, or C1325. <i>[*This practice is not mandatory for existing tile surfaces without apparent moisture problem.]</i>.....</p>	M*
<p>11.602.1.13 Ice barrier. In areas where there has been a history of ice forming along the eaves causing a backup of water, an ice barrier is installed in accordance with the IRC or IBC at roof eaves of pitched roofs and extends a minimum of 24 in. (610 mm) inside the exterior wall line of the building.</p>	M
<p>11.602.1.14 Architectural features. Architectural features that increase the potential for the water intrusion are avoided:</p>	
<p>(1) All horizontal ledgers are sloped away to provide gravity drainage as appropriate for the application. ...</p>	M 1
<p>11.602.4.1 Finished grade at all sides of a building is sloped to provide a minimum of 6 in. (152 mm) of fall within 10 ft. (3048 mm) of the edge of the building. Where lot lines, walls, slopes, or other physical barriers prohibit 6 in. (152 mm) of fall within 10 ft. (3048 mm), the final grade is sloped away from the edge of the building at a minimum slope of 2%.....</p>	M

GREEN BUILDING PRACTICES	POINTS
11.605 RECYCLED CONSTRUCTION WASTE	
<p>11.605.1 Hazardous waste. The construction waste management plan shall include information on the proper handling and disposal of hazardous waste. Hazardous waste is properly handled and disposed.....</p>	M
11.701 MINIMUM ENERGY EFFICIENCY REQUIREMENTS	
<p>305.2.5 Energy efficiency. The building shall comply with § 305.2.5.1 or § 305.2.5.2.</p>	
<p>11.701.4 Mandatory practices</p>	
<p>11.701.4.0 Minimum energy efficiency requirements. Additions, alterations, or renovations to an existing building, building system or portion thereof shall comply with the provisions of the ICC IECC as they relate to new construction without requiring the unaltered portion(s) of the existing building or building system to comply with the ICC IECC. An addition complies with the ICC IECC if the addition complies or if the existing building and addition comply with the ICC IECC as a single building.....</p>	M
<p>11.701.4.1.1 HVAC system sizing. Newly installed or modified space heating and cooling system is sized according to heating and cooling loads calculated using ACCA Manual J, or equivalent. New equipment is selected using ACCA Manual S or equivalent.....</p>	M
<p>11.701.4.1.2 Radiant and hydronic space heating. Where installed as a primary heat source in the building, new radiant or hydronic space heating system is designed, installed, and documented, using industry-approved guidelines and standards (e.g., ACCA Manual J, AHRI I=B=R, ANSI/ACCA 5 QI, or an accredited design professional's and manufacturer's recommendation)</p>	M
<p>11.701.4.2.1 Duct air sealing. Ducts that are newly installed, modified, or are exposed during the remodel are air sealed. All duct sealing materials are in conformance with UL 181A or UL 181B specifications and are installed in accordance with manufacturer's instructions.</p>	M
<p>11.701.4.2.2 Ducts and plenums. Building framing cavities are not used as ducts or plenums. Existing building cavities currently used as supply ducts exposed during the remodel are lined.....</p>	M
<p>11.701.4.2.3 Duct system sizing. New or modified duct system is sized and designed in accordance with ACCA Manual D or equivalent.</p>	M
<p>11.701.4.3.1 Building thermal envelope air sealing. The building thermal envelope exposed or created during the remodel 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>	M
<ul style="list-style-type: none"> (a) All joints, seams and penetrations. (b) Site-built windows, doors and skylights. (c) Openings between window and door assemblies and their respective jambs and framing. (d) Utility penetrations. (e) Dropped ceilings or chases adjacent to the thermal envelope. (f) Knee walls. (g) Walls, ceilings, and floors separating conditioned spaces from unconditioned spaces. (h) Behind tubs and showers on exterior walls. (i) Common walls between dwelling units or sleeping units. (j) Attic access openings. (k) Joints of framing members at rim joists. (l) Top and bottom plates. (m) Other sources of infiltration. 	

GREEN BUILDING PRACTICES	POINTS
<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 E 779 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. Testing is conducted under the following conditions:</p> <ul style="list-style-type: none"> (a) Exterior windows and doors, fireplace and stove doors are closed, but not sealed; (b) Dampers are closed, but not sealed, including exhaust, intake, make-up air, backdraft, and flue dampers; (c) Interior doors are open; (d) Exterior openings for continuous ventilation systems and heat recovery ventilators are closed and sealed; (e) Heating and cooling system(s) is turned off; (f) HVAC duct terminations are not sealed; and (g) Supply and return registers are not sealed. 	<p>M</p>
<p>Multifamily Building Note: Testing by dwelling units, groups of dwelling units, or the building as a whole is acceptable.</p>	
<p>(2) Visual inspection. The air barrier and insulation items listed in Table 11.701.4.3.2(2) are field verified by visual inspection.</p> <p>11.701.4.3.2.1 Grade I insulation installation. Field-installed insulation products to ceilings, walls, floors, band joists, rim joists, conditioned attics, basements, and crawlspaces, except as specifically noted, are verified by a third-party as Grade I in accordance with the following:.....</p> <ul style="list-style-type: none"> (1) Inspection is conducted before insulation is covered. (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. (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). (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. (5) Exterior rigid insulation has substantial contact with the structural framing members or sheathing materials and is tightly fitted at joints. (6) Cavity insulation is split, installed, and/or fitted tightly around wiring and other services. (7) Exterior sheathing is not visible from the interior through gaps in the cavity insulation. (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. (9) Where properly installed, ICFs, SIPs, and other wall systems that provide integral insulation are deemed in compliance with this section. 	<p>M</p>
<p>11.701.4.3.3 Multifamily air leakage alternative. Multifamily buildings four or more stories in height and in compliance with ICC IECC section C402.5 (Air leakage-thermal envelope) are deemed to comply with § 701.4.3.1 and § 701.4.3.2.</p>	

GREEN BUILDING PRACTICES	POINTS
<p>11.701.4.3.4 Fenestration air leakage. Newly installed Windows, skylights and sliding glass doors have an air infiltration rate of no more than 0.3 cfm per sq. ft. (1.5 L/s/m²), and swinging doors no more than 0.5 cfm per sq. ft. (2.6 L/s/m²), when tested in accordance with NFRC 400 or AAMA/WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory and listed and labeled. For site-built fenestration, a test report by an accredited, independent laboratory verifying compliance with the applicable infiltration rate shall be submitted to demonstrate compliance with this practice. This practice does not apply to field-fabricated fenestration products.....</p>	M
<p>Exception: For Tropical Zones only, jalousie windows are permitted to be used as a conditioned space boundary and shall have an air infiltration rate of not more than 1.3 cfm per sq. ft.</p>	
<p>11.701.4.3.5 Lighting and building thermal envelope. Newly installed luminaires installed in the building thermal envelope which penetrate the air barrier are sealed to limit air leakage between conditioned and unconditioned spaces. All luminaires are IC-rated and labeled as meeting ASTM E283 when tested at 1.57 psf (75 Pa) pressure differential with no more than 2.0 cfm (0.944 L/s) of air movement from the conditioned space to the ceiling cavity. All luminaires installed in the building thermal envelope which penetrate the air barrier are sealed with a gasket or caulk between the housing and the interior of the wall or ceiling covering.</p>	M
<p>11.701.4.4 High-efficacy lighting. A minimum of 90% of newly installed hard-wired lighting fixtures or the bulbs in those fixtures shall be high efficacy</p>	M
<p>11.701.4.5 Boiler piping. Boiler piping in unconditioned space supplying and returning heated water or steam that is accessible during the remodel is insulated. Exception: where condensing boilers are installed, insulation is not required for return piping</p>	M
<p>11.701.4.6 Fenestration specifications. The NFRC-certified U-factor and SHGC of newly installed windows, exterior doors, skylights, and tubular daylighting devices (TDDs) do not exceed the values in Table 703.2.5.1.</p>	M
<p>11.701.4.7 Replacement fenestration. Where some or all of an existing fenestration unit is replaced with a new fenestration product, including sash and glazing, the NFRC-certified U-factor and SHGC of the replacement fenestration unit do not exceed the values in Table 703.2.5.1.</p>	M
<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 source energy savings as determined by a third-party energy audit and analysis or utility consumption data. The reduction shall be the percentage difference between the consumption per square foot before and after the remodel calculated as follows:</p>	
$\frac{[(\text{consumption per square foot before remodel} - \text{consumption per square foot after remodel}) / \text{consumption per square foot before remodel}] * 100}{}$	
<p>The occupancy and lifestyle assumed and the method of making the energy consumption estimates shall be the same for estimates before and after the remodel. The building configuration for the after-remodel estimate shall include any additions to the building or other changes to the configuration of the conditioned space. For multifamily buildings, the energy consumption shall be based on the entire building including all dwelling units/sleeping units and common areas.</p>	
<p>If a building can demonstrate through documentation approved by the Adopting Entity that the remodel activities started prior to project registration, the energy baseline (consumption per square foot before remodel) can be calculated based on data and building systems that was existing in the building up to 3 years prior project registration.</p>	

GREEN BUILDING PRACTICES	POINTS
11.703 PRESCRIPTIVE PATH	
11.703.1 Mandatory practices	30
<p>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.</p>	M for § 11.703
<p>Exception: Section 11.703.1.1 is not required for Tropical Climate Zone.</p>	
<p>11.703.1.1.1 Maximum UA. For ICC IECC residential, the total building UA is less than or equal to the total maximum UA as computed by 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 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>11.703.1.1.2 Prescriptive R-value and fenestration requirements. The building thermal envelope is in accordance with the insulation and fenestration requirements of ICC IECC R502.1.1.1. The SHGC is in accordance with the ICC IECC requirements.</p>	
<p>11.703.1.2 Building envelope leakage. The building thermal envelope is in accordance with ICC IECC R502.1.1.1 or R503.1.1 as applicable.</p>	
<p>Exception: Section 11.703.1.2 is not required for Tropical Climate Zone.</p>	
<p>11.703.1.3 Duct testing. The duct system is in accordance with ICC IECC R403.3.2 through R403.3.5 as applicable.</p>	
11.703.2.5 Fenestration	
<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.....</p>	M for § 11.703
<p>11.703.2.5.1.1 Dynamic glazing. Dynamic glazing is permitted to satisfy the SHGC requirements of Table 11.703.2.5.1 provided the ratio of the higher to lower labeled SHGC is greater than or equal to 2.4 and the dynamic glazing is automatically controlled to modulate the amount of solar gain into the space in multiple steps. Fenestration with dynamic glazing is considered separately from other fenestration and area-weighted averaging with fenestration that does not use dynamic glazing is not permitted. Dynamic glazing is not required to be automatically controlled or comply with minimum SHGC ratio when both the lower and higher labeled SHGC already comply with the requirements of Table 11.703.2.5.1.</p>	
11.801 INDOOR AND OUTDOOR WATER USE	
<p>11.801.1 Mandatory requirements. The building shall comply with § 11.802 (Prescriptive Path) and § 11.803 (Innovative Practices). Points from § 11.804 (Performance Path) shall not be combined with points from § 11.802 (Prescriptive Path) or § 11.803 (Innovative Practices).</p>	
<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>[(consumption before remodel – consumption after remodel)/consumption before remodel]*100%</p>	

GREEN BUILDING PRACTICES	POINTS
<p>The occupancy and lifestyle assumed and the method of making the water consumption estimates shall be the same for estimates before and after the remodel. The building configuration for the after-remodel estimate shall include any changes to the configuration of the building such as additions or new points of water use. For multifamily buildings, the water consumption shall be based on the entire building including all dwelling units and common areas.</p>	
<p>Where a building can demonstrate through documentation approved by the Adopting Entity that the remodel activities started prior to project registration, the water baseline (consumption before remodel) shall be calculated based on data and building systems that existed in the building up to 3 years prior project registration.</p>	
11.802 PRESCRIPTIVE PATH	
<p>11.802.5.4 Water closets and urinals are in accordance with the following:</p>	
<p>(1) Gold and Emerald levels: All water closets and urinals are in accordance with § 11.801.5.</p>	M
<p>11.802.6.1 Where an irrigation system is installed, an irrigation plan and implementation are executed by a qualified professional or equivalent.</p>	M
11.901 POLLUTANT SOURCE CONTROL	
<p>11.901.1.4 Newly installed gas-fired fireplaces and direct heating equipment is listed and is installed in accordance with the NFPA 54, ICC IFGC, or the applicable local gas appliance installation code. Gas-fired fireplaces within dwelling units or sleeping units and direct heating equipment are vented to the outdoors. Alcohol burning devices and kerosene heaters are vented to the outdoors.</p>	M
<p>11.901.2.1 Newly installed solid fuel-burning fireplaces, inserts, stoves and heaters are code compliant and are in accordance with the following requirements:</p>	M
<p>(1) Site-built masonry wood-burning fireplaces are equipped with outside combustion air and a means of sealing the flue and the combustion air outlets to minimize interior air (heat) loss when not in operation.</p> <p>(2) Factory-built, wood-burning fireplaces are in accordance with the certification requirements of UL 127 and are an EPA Phase 2 Emission Level Qualified Model.</p> <p>(3) Wood stove and fireplace inserts, as defined in UL 1482 Section 3.8, are in accordance with the certification requirements of UL 1482 and are in accordance with the emission requirements of the EPA Certification and the State of Washington WAC 173-433-100(3).</p> <p>(4) Pellet (biomass) stoves and furnaces are in accordance with the requirements of ASTM E1509 or are EPA certified.</p> <p>(5) Masonry heaters are in accordance with the definitions in ASTM E1602 and IBC Section 2112.1.</p> <p>(6) Removal of or rendering unusable an existing fireplace or fuel burning appliance that is not in accordance with § 11.901.2.1 or replacement of each fireplace or appliance that is not in accordance with § 11.901.2.1 with a compliant appliance.</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.</p>	M 2
<p>(b) A continuous air barrier is provided between walls and ceilings separating the garage space from the conditioned living spaces.</p>	M 2

GREEN BUILDING PRACTICES	POINTS
11.901.4 Wood materials. A minimum of 85% of newly installed material within a product group (i.e., wood structural panels, countertops, composite trim/doors, custom woodwork, and/or component closet shelving) is manufactured in accordance with the following:	10 max
(1) Structural plywood used for floor, wall, and/or roof sheathing is compliant with DOC PS 1 and/or DOC PS 2. OSB used for floor, wall, and/or roof sheathing is compliant with DOC PS 2. The panels are made with moisture-resistant adhesives. The trademark indicates these adhesives as follows: Exposure 1 or Exterior for plywood, and Exposure 1 for OSB.	M
11.901.6 Carpets. Carpets are in accordance with the following:	
(1) Wall-to-wall carpeting is not installed adjacent to water closets and bathing fixtures.....	M
11.901.9.4 When the building is occupied during the remodel, a minimum of 85% of the newly applied interior architectural coatings are in accordance with either § 11.901.9.1 or § 11.901.9.3.....	M
11.901.13 Carbon monoxide (CO) alarms. A carbon monoxide (CO) alarm is provided in accordance with the IRC Section R315.	M
11.901.16 Lead-safe work practices. For buildings constructed before 1978, lead-safe work practices are used during the remodeling.	M
11.902 POLLUTANT CONTROL	
11.902.1.1 Spot ventilation is in accordance with the following:	
(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]
(2) Clothes dryers (except listed and labeled condensing ductless dryers) are vented to the outdoors. ...	M
11.902.1.2 Bathroom and/or laundry exhaust fan is provided with an automatic timer and/or humidistat:	11 max
(1) for first device	5
(2) for each additional device.....	2
11.902.2.1 One of the following whole building ventilation systems is implemented and is in accordance with the specifications of ASHRAE Standard 62.2-2010 Section 4 and an explanation of the operation and importance of the ventilation system is included in either § 11.1001.1 or § 11.1002.2. <i>[*Mandatory where the maximum air infiltration rate is less than 5.0 ACH50]</i>	M*
(1) exhaust or supply fan(s) ready for continuous operation and with appropriately labeled controls	3
(2) balanced exhaust and supply fans with supply intakes located in accordance with the manufacturer's guidelines so as to not introduce polluted air back into the building	6
(3) heat-recovery ventilator	7
(4) energy-recovery ventilator	8
(5) Ventilation air is preconditioned by a system not specified above	10

GREEN BUILDING PRACTICES	POINTS
<p>11.902.3 Radon reduction measures. Radon reduction measures are in accordance with IRC Appendix F or § 11.902.3.1. Radon Zones as identified by the AHJ or, if the zone is not identified by the AHJ, as defined in Figure 9(1). This practice is not mandatory if the existing building has been tested for radon and is accordance with federal and local acceptable limits.</p>	
<p>(1) Buildings located in Zone 1 (a) a passive radon system is installed</p>	M
<p>11.902.6 Living space contaminants. The living space is sealed in accordance with § 11.701.4.3.1 to prevent unwanted contaminants.....</p>	M
11.904 INDOOR AIR QUALITY	
<p>11.904.3 Microbial growth & moisture inspection and remediation. A visual inspection is performed to confirm the following:</p>	
<p>(1) Verify that no visible signs of discoloration and microbial growth on ceilings, walls or floors, or other building assemblies; or if minor microbial growth is observed (less than within a total area of 25 sq. ft.) in homes or multifamily buildings, reference EPA Document 402-K-02-003 (A Brief Guide to Mold, Moisture, and Your Home) for guidance on how to properly remediate the issue. If microbial growth is observed, on a larger scale in homes or multifamily buildings (greater than 25 sq. ft.), reference EPA Document 402-K-01-001 (Mold Remediation in Schools and Commercial Buildings) for guidance on how to properly remediate the issue.....</p>	M
<p>(2) Verify that there are no visible signs of water damage or pooling. If signs of water damage or pooling are observed, verify that the source of the leak has been repaired, and that damaged materials are either properly dried or replaced as needed.</p>	M
11.1001 HOMEOWNER’S MANUAL AND TRAINING GUIDELINES FOR ONE- AND TWO-FAMILY DWELLINGS	
<p>11.1001.1 Homeowner’s manual. A homeowner’s manual is provided and stored in a permanent location in the dwelling that includes the following, as available and applicable. <i>[1 point awarded per two items. Points awarded for non-mandatory items.]</i></p>	1 [8 max]
<p>(1) A National Green Building Standard certificate with web link and completion document.</p>	M
<p>(2) List of green building features (can include the national green building checklist).</p>	M
<p>(3) Product manufacturer’s manuals or product data sheet for newly installed major equipment, fixtures, and appliances including product model numbers and serial numbers. If product data sheet is in the building owners’ manual, manufacturer’s manual may be attached to the appliance in lieu of inclusion in the building owners’ manual.</p>	M
<p>11.1001.2 Training of initial building owners. Initial building owners are familiarized with the role of occupants in achieving green goals. Training is provided to the responsible party(ies) regarding newly installed equipment operation and maintenance, control systems, and occupant actions that will improve the environmental performance of the building. These include:</p>	M 8
<p>(1) HVAC filters (2) thermostat operation and programming (3) lighting controls (4) appliances operation (5) water heater settings and hot water use (6) fan controls (7) Recycling and composting practices (8) Whole-dwelling mechanical ventilation systems</p>	

GREEN BUILDING PRACTICES	POINTS
11.1002 CONSTRUCTION, OPERATION, AND MAINTENANCE MANUALS AND TRAINING FOR MULTIFAMILY BUILDINGS	
11.1002.1 Building construction manual. A building construction manual, including five or more of the following, is compiled and distributed in accordance with § 11.1002.0. <i>[Points awarded per two items. Points awarded for non-mandatory items.]</i>	1
(1) A narrative detailing the importance of constructing a green building, including a list of green building attributes included in the building. This narrative is included in all responsible parties’ manuals.....	M
(2) A local green building program certificate as well as a copy of the <i>National Green Building Standard™</i> , as adopted by the Adopting Entity, and the individual measures achieved by the building.	M
(3) Warranty, operation, and maintenance instructions for all equipment, fixtures, appliances, and finishes.	M
11.1002.2 Operations manual. Operations manuals are created and distributed to the responsible parties in accordance with § 11.1002.0. Among all of the operation manuals, five or more of the following options are included. <i>[Points awarded per two items. Points awarded for non-mandatory items.]</i>	1
(1) A narrative detailing the importance of operating and living in a green building. This narrative is included in all responsible parties’ manuals.....	M
(2) A list of practices to conserve water and energy (e.g., turning off lights when not in use, switching the rotation of ceiling fans in changing seasons, purchasing ENERGY STAR appliances and electronics).	M
11.1002.3 Maintenance manual. Maintenance manuals are created and distributed to the responsible parties in accordance with § 11.1002.0. Between all of the maintenance manuals, five or more of the following options are included. <i>[Points awarded for non-mandatory items.]</i>	1 per 2 items
(1) A narrative detailing the importance of maintaining a green building. This narrative is included in all responsible parties’ manuals.	M
11.1002.4 Training of building owners. Building owners are familiarized with the role of occupants in achieving green goals. On-site training is provided to the responsible party(ies) regarding newly installed equipment operation and maintenance, control systems, and occupant actions that will improve the environmental performance of the building.	M 8
These include:	
(1) HVAC filters	
(2) thermostat operation and programming	
(3) lighting controls	
(4) appliances operation	
(5) water heater settings and hot water use	
(6) fan controls	
(7) recycling and composting practices	
(8) Whole-dwelling mechanical ventilation system	
11.1002.5 Multifamily occupant manual. An occupant manual is compiled and distributed in accordance with § 1002.0. <i>[Points awarded for non-mandatory items.]</i>	1 per 2 items
(1) NGBS certificate	M
(2) List of green building features	M
(3) Operations manuals for all appliances and occupant operated equipment including lighting and ventilation controls, thermostats, etc.....	M