

SECTION 12: CERTIFIED COMPLIANCE PATH FOR SINGLE-FAMILY HOMES, TOWNHOMES, AND DUPLEXES

Homes can earn the Certified level if they comply with all applicable green practices from the 2020 NGBS Chapter 12. This streamlined yet rigorous certification path requires homes to be designed and constructed to be more efficient than 2018 IECC code-compliant homes and to include important building practices that ensure the home provides a healthier indoor environment, is more water efficient, and is more durable. The NGBS Chapter 12 Certified Path focuses on the most impactful practices that improve energy and water efficiency, create a healthier living space, and manage potential moisture issues.

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- 1200 Substitution of practices.** The adopting entity shall be permitted to substitute one or more practices with alternatives that achieve the overall intent of this standard. The determination of intent and equivalency is in the purview of the adopting entity.

1201 LOT DEVELOPMENT

- 1201.1 Floodplain.** Construction shall not occur in a floodplain or construction shall be elevated above the floodplain.
- 1201.2 Lot slope.** Finished grade at all sides of a building shall be 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 shall be sloped away from the edge of the building at a minimum slope of 2%.
- 1201.3 Soil preparation for new plants.** Soil shall be tilled or new soil shall be added down 6 in. for new plants and 12 in. for new trees. Soil shall be amended with organic matter, such as mulch or compost, as needed. Long acting sources of nutrients shall be added if the soil is deficient. Alternately, the landscaping plan shall incorporate the jurisdictional Department of Transportation (DOT) specifications (or equal) for soil preparation and amendment for landscape planning. Other approved sources such as University or County agricultural extension services shall be permitted for use.
- 1201.4 Regionally appropriate vegetation.** When an Agency that has jurisdiction has developed a specification for planting, including non-invasive vegetation that is native or appropriate for local growing conditions, vegetation from that specification is selected for the landscaping plan and that landscaping is installed.
- 1201.5 Protection of natural resources.** Any trees or other natural resources that do not conflict with the home construction or finished grading and drainage of the lot and adjacent lots shall be properly protected during construction and all controls shall be removed following construction. The landscape plan shall contain details for the protection and instructions for incorporation of the trees/areas into the final landscape plan.

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1202 RESOURCE EFFICIENCY (DURABILITY)

- 1202.1 Capillary break.** A capillary break and vapor retarder shall be installed at concrete slabs in accordance with IRC Sections R506.2.2 and R506.2.3.
- 1202.2 Foundation drainage.** Where required by the IRC for habitable and usable spaces below grade, exterior drain tile shall be installed.
- 1202.3 Dampproof walls.** Dampproof walls shall be provided below finished grade.
- 1202.4 Sealed crawlspace.** 6-mil polyethylene sheeting, or other Class I vapor retarder shall be installed in accordance with § 408.3 or IRC Section 506.
- 1202.5 Dry Insulation.** Insulation in cavities shall be dry in accordance with manufacturer's instructions before enclosing (e.g., with drywall).
- 1202.6 Water-resistive barrier.** A water-resistive barrier and/or drainage plane system shall be installed in accordance with IRC requirements behind exterior veneer and/or siding.
- 1202.7 Flashing.** Flashing shall be 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 shall be provided in the construction documents and shall be in accordance with the fenestration manufacturer's instructions, the flashing manufacturer's instructions, or as detailed by a registered design professional.

Flashing shall be installed at the following locations, as applicable:

- (1) around exterior fenestrations, skylights, and doors
- (2) at roof valleys
- (3) at building-to-deck, -balcony, -porch, and -stair intersections
- (4) at roof-to-wall intersections, at roof-to-chimney intersections, at wall-to-chimney intersections, and at parapets
- (5) at ends of and under masonry, wood, or metal copings and sills
- (6) above projecting wood trim
- (7) at built-in roof gutters
- (8) drip edge shall be installed at eave and rake edges
- (9) 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 flashing fenestration or manufacturer's installation instructions.
- (10) pan flashing is installed at sills of all exterior windows and doors.
- (11) 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.
- (12) through-wall flashing is installed at transitions between wall cladding materials, or wall construction types

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- 1202.8 Tile backing materials.** Tile backing materials installed under tiled surfaces in wet areas shall be in accordance with ASTM C1178, C1278, C1288, or C1325. Tile shall not be installed over paper-faced drywall in wet areas.
- 1202.9 Ice and water shield.** In areas where there has been a history of ice forming along the eaves causing a backup of water, an ice barrier shall be installed in accordance with the IRC at roof eaves of pitched roofs and shall extend a minimum of 24 in. (610 mm) inside the exterior wall line of the building.
- 1202.10 Architectural features.** Horizontal ledgers shall be sloped away to provide gravity drainage as appropriate for the application.
- 1202.11 Visible suspect fungal growth.** Building materials with visible suspect fungal growth shall not be installed or shall be addressed in accordance with industry recognized guidelines such as ANSI/IICRC S520 Mold Remediation or EPA 402-K-01-001 Table 2: Mold Remediation Guidelines, prior to concealment and closing. Porous and semi-porous building materials should be stored in such a manner as to prevent excessive moisture content prior to installation or use. Relative humidity within the structure shall be controlled during construction to minimize the potential for microbial growth.
- 1202.12 Exterior doors.** At least one entry at an exterior door assembly, inclusive of side lights (if any), are covered by one of the following methods to protect the building from the effects of precipitation and solar radiation. Either a storm door or a projection factor of 0.375 minimum is provided. Eastern- and western-facing entries in Climate Zones 1, 2, and 3, as determined in accordance with Figure 6(1) or Appendix A, have either a storm door or a projection factor of 1.0 minimum, unless protected from direct solar radiation by other means (e.g., screen wall, vegetation).
 - (a) installing a porch roof or awning
 - (b) extending the roof overhang
 - (c) recessing the exterior door
 - (d) installing a storm door
- 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.
- 1202.14 Roof Water discharge.** Each downspout shall discharge 5 ft. from building, onto impervious surfaces, into areas designed to infiltrate drainage into the ground, to water vegetation, or into a rain collection system.

1203 ENERGY EFFICIENCY

- 1203.1 Mandatory requirements.** The building shall comply with § 1203.1 through § 1203.9 in addition to one of the following: § 1203.10 (Energy Performance Path); § 1203.11 through § 1203.14 (Energy Prescriptive Path); or § 1203.15 (ERI Target Path). Sampling shall not be permitted for this alternative compliance path.
- 1203.2 Adopting entity review.** A review by the Adopting Entity or approved third party shall be conducted to verify design and compliance with these energy requirements.
- 1203.3 Duct testing.** Ducts shall be pressure tested 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 in. 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.

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(2) Post-construction test: Total leakage shall be measured with a pressure differential of 0.1 in. 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.

Exceptions: 1) A duct air-leakage test shall not be required where the ducts and air handlers are located entirely within the building thermal envelope; and 2) A duct air-leakage test shall not be required for ducts serving heat or energy recovery ventilators that are not integrated with ducts serving heating or cooling systems.

A written report of the results of the test shall be signed by the party conducting the test and provided to the code official.



1203.4 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 recommendations).



1203.5 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:

- (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 and ceilings separating a garage from conditioned spaces
- (h) Behind tubs and showers on exterior walls
- (i) Common walls between dwelling units
- (j) Attic access openings
- (k) Rim joist junction
- (l) Other sources of infiltration



1203.6 Air sealing and insulation. Insulation shall be installed to Grade I. Grade II and Grade III insulation shall not be permitted. Building envelope air tightness and insulation installation shall be verified to be in accordance with the following.

(A) Testing is conducted in accordance with ASTM E 779 using a blower door at a pressure of 1.04 psf (50 pa). Testing is conducted after rough-in and installation of penetrations in the building envelope, including but not limited to penetrations for utilities, electrical, plumbing, ventilation and combustion appliances. Testing is to be conducted under the following conditions:

- (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;

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- (e) Heating, cooling, and ventilation systems are turned off;
- (f) HVAC duct terminations are not sealed; and
- (g) Supply and return registers are not sealed.

(B) Visual inspection. The air barrier and insulation items listed in Table 1203.6(B) shall be field verified by visual inspection.

- 1203.7 High-efficacy lighting.** A minimum of 90% of the total hard-wired lighting fixtures or the bulbs in those fixtures qualify as high efficacy or equivalent.
- 1203.8 Appliances.** If installed, refrigerator, dishwasher, and/or washing machine shall be ENERGY STAR or equivalent.
- 1203.9 Clothes washers.** Where installed, clothes washers rated with an IWF (integrated water factor), MEF (modified energy factor), or IMEF (integrated modified energy factor), shall be rated as follows:
 - (1) Residential Clothes Washers, Front-loading, greater than 2.5 cu-ft maximum 3.2 IWF, minimum IMEF 2.76
 - (2) Residential Clothes Washers, Top-loading, greater than 2.5 cu-ft maximum 4.3 IWF, minimum IMEF 2.06
 - (3) Residential Clothes Washers, less than or equal to 2.5 cu-ft maximum 4.2 IWF, minimum IMEF 2.07
- 1203.10 Energy performance pathway.**
- 1203.10.1 ICC IECC analysis.** Energy efficiency features are implemented to achieve energy cost or source energy performance that exceeds the ICC IECC by 7.5%. A documented analysis using software in accordance with ICC IECC Section R405 is required.
- 1203.10.2 Energy performance analysis.** Energy savings levels above the ICC IECC are determined through an analysis that includes improvements in building envelope, air infiltration, heating system efficiencies, cooling system efficiencies, duct sealing, water heating system efficiencies, lighting, and appliances.
- 1203.11 Energy prescriptive pathway.**
- 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 is not required for Tropical Climate Zone.
- 1203.11.1.1 Insulation and fenestration requirements.** The building thermal envelope shall meet the requirements of Table 1203.11.1.1 and 1203.11.1.2.
- 1203.11.1.2** The total UA proposed and baseline calculations are documented where the total proposed building thermal envelope UA is less than or equal to the total baseline UA resulting from multiplying the U-factors in Table 1203.11.1.2 by the same assembly area as in the proposed building. REScheck is deemed to provide UA calculation documentation. SHGC requirements of Table 1203.11.1.1 shall be met.

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1203.12 Space heating and cooling and water heating system efficiencies. The Space Heating and Cooling and Water Heating systems are in accordance with Table 1203.12.

**Table 1203.12
Space Heating and Cooling and Water Heating System Efficiencies**

Climate Zone	Space Cooling System	Space Heating System - select 1 option from below				Water Heating System - select 1 option from below		
	AC	Gas Furnace	Gas Boiler	ASHP	GSHP or WSHP	Gas Tank WH	Gas Tankless WH	Elec Tank WH
	Min. Req.	Min. Req.	Min. Req.	Min. Req.	Min. Req.	Min. UEF Req.	Min. UEF Req.	Min. UEF Req.
1	15 SEER**	NR	85%	NR	Any	0.78	>.93	>.92
2	15 SEER**	NR	85%	NANR	Any	0.78	>.93	>.92
3	15 SEER**	92%	85%	≥ 8.5 HSPF*	Any	0.78	>.93	>.92
4	15 SEER**	92%	85%	≥ 8.5 HSPF*	Any	0.78	>.93	>.92
5	14 SEER	95%	85%	≥ 8.5 HSPF*	Any	0.78	>.93	>.92
6	14 SEER	95%	85%	≥ 8.5 HSPF*	Any	0.78	>.93	>.92
7	14 SEER	95%	85%	≥ 8.5 HSPF*	Any	0.78	>.93	>.92
8	14 SEER	95%	85%	≥ 8.5 HSPF*	Any	∅	>.93	>.92

* ≥ 8.2 HSPF for single package

**zones 1-4 ≥12.5 EER for split; ≥12 EER for single package

NR = No requirement



1203.13 Duct leakage. The total leakage of the ducts, where measured in accordance with Section R403.3.3, shall be as follows:

- (1) Rough-in test: The total leakage shall be less than or equal to 4 cubic feet per minute (113.3 L/min) per 100 sq. ft. (9.29 m²) 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 cubic feet per minute (85 L/min) per 100 sq. ft. (9.29 m²) of conditioned floor area.
- (2) Postconstruction test: Total leakage shall be less than or equal to 4 cubic feet per minute (113.3 L/min) per 100 sq. ft. (9.29 m²) of conditioned floor area.



1203.14 High-efficacy lighting. A minimum of 95% of the total hard-wired lighting fixtures or the bulbs in those fixtures qualify as high efficacy or equivalent.



1203.15 ERI target pathway.



1203.15.1 ERI target compliance. Energy efficiency features are implemented to achieve an ERI performance that is 8 points less than the EPA National ERI Target Procedure for ENERGY STAR Certified Homes version 3.0 as computed based on Step 1 of the EPA National ERI Target Procedure. Dwelling ratings shall be submitted to a quality control registry approved by the Adopting Entity for calculating points under this section.

1204 WATER EFFICIENCY



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.

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- 1204.2 Water closets.** Water closets shall have an effective flush volume of 1.28 gallons or less and shall be in accordance with the performance criteria of the EPA WaterSense Specification for tank-type toilets.
- 1204.3 Irrigation systems.** Where an irrigation system is installed, one of the following is met:
 - (1) Drip irrigation is installed for all landscape beds and/or subsurface drip irrigation is installed for all turf grass areas.
 - (2) Irrigation zones are organized by plant water needs.
 - (3) The irrigation system(s) is controlled by a climate-based controller or soil moisture controller.
 - (4) No irrigation is installed.
- 1204.4 Alternative Compliance Path.** Water Rating Index (WRI) needs to achieve a level 70.

1205 INDOOR ENVIRONMENTAL QUALITY

- 1205.1 Gas-fired fireplaces and direct heating equipment.** 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 and direct heating equipment are vented to the outdoors.
- 1205.2 Solid fuel-burning fireplaces, inserts, stoves and heaters.** Solid fuel-burning fireplaces, inserts, stoves and heaters are code compliant and are in accordance with one or more of the following requirements:
 - (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.
 - (2) Factory-built, wood-burning fireplaces are in accordance with the certification requirements of UL 127 and are EPA certified or Phase 2 Qualified.
 - (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).
 - (4) Pellet (biomass) stoves and furnaces are in accordance with ASTM E1509 or are EPA certified.
 - (5) Masonry heaters are in accordance with the definitions in ASTM E1602 and IBC Section 2112.1.
 - (6) Fireplaces, woodstoves, pellet stoves, or masonry heaters are not installed.
- 1205.3 Garages.** Garages shall be in accordance with “a” or “b”:
 - (a) Attached garage
 - (1) Doors installed in the common wall between the attached garage and conditioned space are tightly sealed and gasketed; and
 - (2) A continuous air barrier is provided separating the garage space from the conditioned living spaces.
 - (b) A carport is installed, the garage is detached from the building, or no garage is installed.
- 1205.4 Carpets.** Wall-to-wall carpeting shall not be installed adjacent to
 - (a) water closets and bathing fixtures, and
 - (b) exterior doors.

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1205.5 Carbon monoxide (CO) alarms. A carbon monoxide (CO) alarm shall be provided in accordance with IRC Section R315 in any dwelling unit with a combustion fueled appliance or an attached garage with an opening that communicates with the dwelling unit.

1205.6 Interior architectural coatings. A minimum of 85% of the interior architectural coatings are in accordance with one or more of the following:

- (1) Low VOC as determined by EPA Method 24 (VOC content is below the detection limit for the method)
- (2) Green Seal GS-11
- (3) CARB Suggested Control Measure for Architectural Coatings (see Table 901.9.1).



1205.7 Local ventilation. shall be in accordance with the following:

- (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.
- (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.
- (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.



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.

- (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, 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, 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 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, extreme humidity and/or during times of peak utility loads, and with intakes located in accordance with the manufacturer's guidelines to not introduce polluted air back in to the building.
- (8) energy-recovery ventilator



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

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- 1205.10 Kitchen exhaust.** If a kitchen exhaust unit(s) that equals or exceeds 400 cfm (189 L/s) is installed, make-up air shall be provided.
- 1205.11 MERV filters.** Minimum 8 MERV filters shall be installed on central forced air systems and are accessible.
- 1205.12 HVAC system protection.** One of the following HVAC system protection measures shall be performed.
 - (a) HVAC supply registers (boots), return grilles, and rough-ins are covered during construction activities to prevent dust and other pollutants from entering the system.
 - (b) Prior to owner occupancy, HVAC supply registers (boots), return grilles, and duct terminations are inspected and vacuumed. In addition, the coils are inspected and cleaned, and the filter is replaced if necessary.

1206 HOMEOWNER OPERATION AND MAINTAINANCE

- 1206.1 Homeowner's manual.** A homeowner's manual shall be provided. The homeowner's manual shall include all items below:
 - (1) A National Green Building Standard certificate with a web link and completion document.
 - (2) List of green building features (can include the National Green Building Standard checklist).
 - (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.
 - (4) Maintenance checklist.
 - (5) Information on the importance and operation of the home's fresh air ventilation system.
 - (6) Provide information on regionally-appropriate vegetation from the local authority with jurisdiction.
 - (7) A narrative detailing the importance of maintenance and operation of the green building features from the National Green Building Standard checklist in retaining the attributes of a green-built home.
 - (8) Where stormwater management measures are installed on the lot, information on the location, purpose, and upkeep of these measures.
- 1206.2 Training of initial homeowners.** Initial homeowners shall be 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 role. These include:
 - (1) HVAC filters
 - (2) Water heater settings
 - (3) Whole-house ventilation systems
 - (4) Operation of household equipment