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\$50,000 or 5 percent limit, as approved by DOE.

(c) The total of all grants for State administrative costs, technical assistance programs, and energy conservation measures (or for State administrative costs, technical assistance, program assistance, and marketing, if the State elects and is eligible to apply for such grants) in that State shall not exceed the total amount allocated for that State for any grant program cycle.

(d) In the event that a State cannot or decides not to use the amount available to it for an administrative grant under this section for administrative purposes, these funds may, at the discretion of the State, be used for technical assistance and energy conservation grants to eligible institutions within that State in accordance with this part.

§ 455.144 Grant awards for State programs to provide technical assistance, program assistance, and marketing.

(a) For the purpose of defraying State expenses in the administration of special programs to provide technical assistance and program assistance pursuant to § 455.121, DOE may make a grant award to a State for up to 100 percent of the funds allocated to the State for the grant program cycle, provided that the State meets the requirements described in § 455.121(b). In addition:

(1) Funds for individual technical assistance programs provided by the State pursuant to this section shall not exceed 50 percent of the cost of the technical assistance program;

(2) Grants for program assistance may be made for up to 100 percent of a State's projected program assistance expenses; and

(3) Grants for State technical assistance, and program assistance programs may be awarded by DOE upon approval of an application from the State.

(b) For the purpose of defraying State expenses in the administration of a marketing program pursuant to § 455.121, DOE may make a grant award to a State for up to 50 percent of the funds allocated to the State for the grant program cycle, provided that the

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State meets the requirements described in § 455.121(b). In addition:

(1) Grants for marketing may be made for up to 100 percent of a State's projected marketing expenses; and

(2) Such grants may be awarded by DOE upon approval of an application from the State.

(c) If a State provides a certification under section 455.121(b) and is unable to document that the required non-Federal funding levels for energy conservation measures were achieved substantially for the previous fiscal year for which a similar certification was submitted, DOE may deny the application, accept it after the percentage of allocated funds is reduced in light of past performance, or take other appropriate action.

(d) In the event that a State, after receiving a grant under this section, cannot or decides not to use all or part of the amount available to it for technical assistance, program assistance, and marketing, these funds may, at the discretion of the State and after appropriate application to and approval of DOE, be used for technical assistance and energy conservation grants to eligible institutions within that State in accordance with this part.

Subpart N—Administrative Review**§ 455.150 Right to administrative review.**

(a) A State shall have a right to file a notice requesting administrative review of a decision under § 455.143 by a Support Office Director to disapprove an application for a grant award for State administrative expenses subject to special conditions or a decision under § 455.21 of this part by a Support Office Director to disapprove a State Plan or an amendment to a State Plan.

(b) A State shall have a right to file a notice requesting administrative review of a decision under § 455.144 by a Support Office Director to disapprove an application for a grant award for State technical assistance, program assistance, or marketing programs.

(c) A school, hospital, coordinating agency, or State acting as an institution's duly authorized agent shall have a right to file a notice requesting administrative review of a decision under

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§ 455.140 by a Support Office Director to disapprove an application for a grant award to perform technical assistance programs or to acquire and install an energy conservation measure if the disapproval is based on a determination that:

- (1) The applicant is ineligible, under § 455.61 or § 455.71 or for any other reason; or
- (2) An energy use evaluation submitted in lieu of an energy audit is unacceptable under the State Plan; or
- (3) A technical assistance program equivalent performed without the use of Federal funds does not comply with the requirements of § 455.62 for purposes of satisfying the eligibility requirements of § 455.71(a)(3).

§ 455.151 Notice requesting administrative review.

(a) Any applicant shall have 20 days from the date of receipt of a decision subject to administrative review under § 455.150 to disapprove its application for a grant award to file a notice requesting administrative review. If an applicant does not timely file such a notice, the decision to disapprove shall become final for DOE.

(b) A notice requesting administrative review shall be filed with the Support Office Director and shall be accompanied by a written statement containing supporting arguments.

(c) If the applicant is a State appealing pursuant to paragraph (a) of § 455.150, the State shall have the right to a public hearing. To exercise that right, the State must request such a hearing in the notice filed under paragraph (b) of this section. A public hearing under this section shall be informal and legislative in nature.

(d) A notice or any other document shall be deemed filed under this subpart upon receipt.

§ 455.152 Transmittal of record on review.

On or before 15 days from receipt of a notice requesting administrative review which is timely filed, the Support Office Director shall forward to the Deputy Assistant Secretary the notice requesting administrative review, the decision to disapprove as to which administrative review is sought, a draft

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recommended final decision for concurrence, and any other relevant material.

§ 455.153 Review by the Deputy Assistant Secretary.

(a) If a State requests a public hearing pursuant to paragraph (a) of § 455.150, the Deputy Assistant Secretary, within 15 days, shall give actual notice to the State and FEDERAL REGISTER notice of the date, place, time, and procedures which shall apply to the public hearing. Any public hearing under this section shall be informal and legislative in nature.

(b) The Deputy Assistant Secretary shall concur in, concur in as modified, or issue a substitute for the recommended decision of the Support Office Director:

(1) With respect to a notice filed pursuant to paragraph (a) of § 455.150, on or before 60 days from receipt of documents under § 455.152 or the conclusion of a public hearing, whichever is later; or

(2) With respect to a notice filed pursuant to paragraph (b) of § 455.150, on or before 30 days from receipt of documents under § 455.152.

§ 455.154 Discretionary review by the Assistant Secretary.

On or before 15 days from the date of the determination under § 455.153(b), the applicant for a grant award may file an application, with a supporting statement of reasons, for discretionary review by the Assistant Secretary. If administrative review is sought pursuant to paragraph (a) of § 455.150, the Assistant Secretary shall send a notice granting or denying discretionary review within 15 days and upon granting such review, shall issue a decision no later than 60 days from the date discretionary review is granted. If administrative review is sought pursuant to paragraph (b) of § 455.150, the Assistant Secretary shall send a notice granting or denying discretionary review within 15 days and upon granting such review shall issue a decision no later than 30 days from the date discretionary review is granted. The Assistant Secretary may not issue a notice or decision under this paragraph without the concurrence of the DOE Office of General Counsel.

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§ 455.155 Finality of decision.

A decision under § 455.153 shall be final for DOE if there is no review sought under § 455.154. If there is review under § 455.154, the decision thereunder shall be final for DOE, and no appeal shall lie elsewhere in DOE.

PART 456 [RESERVED]

PART 460—ENERGY CONSERVATION STANDARDS FOR MANUFACTURED HOMES

Subpart A—General

Sec.

- 460.1 Scope.
- 460.2 Definitions.
- 460.3 Materials incorporated by reference.
- 460.4 Energy conservation standards.

Subpart B—Building Thermal Envelope

- 460.101 Climate zones.
- 460.102 Building thermal envelope requirements.
- 460.103 Installation of insulation.
- 460.104 Building thermal envelope air leakage.

Subpart C—HVAC, Service Hot Water, and Equipment Sizing

- 460.201 Duct systems.
- 460.202 Thermostats and controls.
- 460.203 Service hot water.
- 460.204 Mechanical ventilation fan efficacy.
- 460.205 Equipment sizing.

Subpart D [Reserved]

AUTHORITY: 42 U.S.C. 17071; 42 U.S.C. 7101 *et seq.*

SOURCE: 87 FR 32818, May 31, 2022, unless otherwise noted.

Subpart A—General

§ 460.1 Scope.

This subpart establishes energy conservation standards for manufactured homes as manufactured at the factory, prior to distribution in commerce for sale or installation in the field. Manufacturers must apply the requirements of this part to a manufactured home subject to § 460.4(b) that is manufactured on or after 60 days after publication of final enforcement procedures for this part. DOE will amend this sec-

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tion to include the specific compliance date, once known. Manufacturers must apply the requirements of this part to a manufactured home subject to § 460.4(c) that is manufactured on or after July 1, 2025.

[88 FR 34419, May 30, 2023]

§ 460.2 Definitions.

Adapted from section R202 of the 2021 IECC and as used in this part—

2021 IECC means the 2021 version of the International Energy Conservation Code, issued by the International Code Council.

Access (to) means that which enables a device, appliance or equipment to be reached by ready access or by a means that first requires the removal or movement of a panel or similar obstruction.

Air barrier means one or more materials joined together in a continuous manner to restrict or prevent the passage of air through the building thermal envelope and its assemblies.

Automatic means self-acting or operating by its own mechanism when actuated by some impersonal influence.

Building thermal envelope means exterior walls, exterior floors, exterior ceiling, or roofs, and any other building element assemblies that enclose conditioned space or provide a boundary between conditioned space and unconditioned space.

Ceiling means an assembly that supports and forms the overhead interior surface of a building or room that covers its upper limit and is horizontal or tilted at an angle less than 60 degrees (1.05 rad) from horizontal.

Climate zone means a geographical region identified in § 460.101.

Conditioned space means an area, room, or space that is enclosed within the building thermal envelope and that is directly or indirectly heated or cooled. Spaces are indirectly heated or cooled where they communicate through openings with conditioned space, where they are separated from conditioned spaces by uninsulated walls, floors or ceilings, or where they contain uninsulated ducts, piping, or other sources of heating or cooling.

Continuous air barrier means a combination of materials and assemblies that restrict or prevent the passage of

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air from conditioned space to unconditioned space.

Door means an operable barrier used to block or allow access to an entrance of a manufactured home.

Dropped ceiling means a secondary nonstructural ceiling, hung below the exterior ceiling.

Dropped soffit means a secondary nonstructural ceiling that is hung below the exterior ceiling and that covers only a portion of the ceiling.

Duct means a tube or conduit, except an air passage within a self-contained system, utilized for conveying air to or from heating, cooling, or ventilating equipment.

Duct system means a continuous passageway for the transmission of air that, in addition to ducts, includes duct fittings, dampers, plenums, fans, and accessory air-handling equipment and appliances.

Eave means the edge of the roof that overhangs the face of an exterior wall and normally projects beyond the side of the manufactured home.

Equipment includes material, devices, fixtures, fittings, or accessories both in the construction of, and in the plumbing, heating, cooling, and electrical systems of a manufactured home.

Exterior ceiling means a ceiling that separates conditioned space from unconditioned space.

Exterior floor means a floor that separates conditioned space from unconditioned space.

Exterior wall means a wall, including a skylight well, that separates conditioned space from unconditioned space.

Fenestration means vertical fenestration and skylights.

Floor means a horizontal assembly that supports and forms the lower interior surface of a building or room upon which occupants can walk.

Glazed or glazing means an infill material, including glass, plastic, or other transparent or translucent material used in fenestration.

Heated water circulation system means a water distribution system in which one or more pumps are operated in the service hot water piping to circulate heated water from the water heating equipment to fixtures and back to the water heating equipment.

Insulation means material deemed to be insulation under 16 CFR 460.2.

Manual means capable of being operated by personal intervention.

Manufactured home means a structure, transportable in one or more sections, which in the traveling mode is 8 body feet or more in width or 40 body feet or more in length or which when erected onsite is 320 or more square feet, and which is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air conditioning, and electrical systems contained in the structure. This term includes all structures that meet the above requirements except the size requirements and with respect to which the manufacturer voluntarily files a certification pursuant to 24 CFR 3282.13 and complies with the construction and safety standards set forth in 24 CFR part 3280. The term does not include any self-propelled recreational vehicle. Calculations used to determine the number of square feet in a structure will be based on the structure's exterior dimensions, measured at the largest horizontal projections when erected on site. These dimensions will include all expandable rooms, cabinets, and other projections containing interior space, but do not include bay windows. Nothing in this definition should be interpreted to mean that a manufactured home necessarily meets the requirements of the U.S. Department of Housing and Urban Development Minimum Property Standards (HUD Handbook 4900.1) or that it is automatically eligible for financing under 12 U.S.C. 1709(b).

Manufacturer means any person engaged in the factory construction or assembly of a manufactured home, including any person engaged in importing manufactured homes for resale.

Opaque door means a door that is not less than 50 percent opaque in surface area.

R-value (thermal resistance) means the inverse of the time rate of heat flow through a body from one of its bounding surfaces to the other surface for a unit temperature difference between the two surfaces, under steady state

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conditions, per unit area ($\text{h} \times \text{ft}^2 \times {}^\circ\text{F}$ /Btu).

Rough opening means an opening in the exterior wall or roof, sized for installation of fenestration.

Service hot water means supply of hot water for purposes other than comfort heating.

Skylight means glass or other transparent or translucent glazing material, including framing materials, installed at an angle less than 60 degrees (1.05 rad) from horizontal, including unit skylights, tubular daylighting devices, and glazing materials in solariums, sunrooms, roofs and sloped walls.

Skylight well means the exterior walls underneath a skylight that extend from the interior finished surface of the exterior ceiling to the exterior surface of the location to which the skylight is attached.

Solar heat gain coefficient (SHGC) means the ratio of the solar heat gain entering a space through a fenestration assembly to the incident solar radiation. Solar heat gain includes directly transmitted solar heat and absorbed solar radiation that is then reradiated, conducted, or convected into the space.

State means each of the 50 states, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the U.S. Virgin Islands, and American Samoa.

Thermostat means an automatic control device used to maintain temperature at a fixed or adjustable set point.

U-factor (thermal transmittance) means the coefficient of heat transmission (air to air) through a building component or assembly, equal to the time rate of heat flow per unit area and unit temperature difference between the warm side and cold side air films (Btu/ $\text{h} \times \text{ft}^2 \times {}^\circ\text{F}$).

U_o (overall thermal transmittance) means the coefficient of heat transmission (air to air) through the building thermal envelope, equal to the time rate of heat flow per unit area and unit temperature difference between the warm side and cold side air films (Btu/ $\text{h} \times \text{ft}^2 \times {}^\circ\text{F}$).

Ventilation means the natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from, any space.

Vertical fenestration means windows (fixed or moveable), opaque doors,

glazed doors, glazed block and combination opaque and glazed doors composed of glass or other transparent or translucent glazing materials and installed at a slope of greater than or equal to 60 degrees (1.05 rad) from horizontal.

Wall means an assembly that is vertical or tilted at an angle equal to greater than 60 degrees (1.05 rad) from horizontal that encloses or divides an area of a building or room.

Whole-house mechanical ventilation system means an exhaust system, supply system, or combination thereof that is designed to mechanically exchange indoor air with outdoor air when operating continuously or through a programmed intermittent schedule to satisfy the whole house ventilation rates.

Window means glass or other transparent or translucent glazing material, including framing materials, installed at an angle greater than 60 degrees (1.05 rad) from horizontal.

Zone means a space or group of spaces within a manufactured home with heating or cooling requirements that are sufficiently similar so that desired conditions can be maintained using a single controlling device.

§ 460.3 Materials incorporated by reference.

Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the U.S. Department of Energy (DOE) must publish a document in the FEDERAL REGISTER and the material must be available to the public. All approved material is available for inspection at DOE and at the National Archives and Records Administration (NARA). Contact DOE at: The U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, Sixth Floor, 950 L'Enfant Plaza SW, Washington, DC 20024, (202) 586-9127, *Buildings@ee.doe.gov*, <https://www.energy.gov/eere/buildings/building-technologies-office>. For information on the availability of this material at NARA, email: *fr.inspection@nara.gov*, or

go to: www.archives.gov/federal-register/cfr/ibr-locations.html. The material may be obtained from the following sources:

(a) *ACCA*. Air Conditioning Contractors of America, Inc., 2800 S. Shirlington Road, Suite 300, Arlington, VA 22206, 703-575-4477; www.acca.org/.

(1) ANSI/ACCA 2 Manual J-2016 (ver 2.50) ("ACCA Manual J"), Manual J—Residential Load Calculations, Eighth Edition, Version 2.50, Copyright 2016; IBR approved for § 460.205.

(2) ANSI/ACCA 3 Manual S-2014 ("ACCA Manual S"), Manual S—Residential Equipment Selection, Second Edition, Version 1.00, Copyright 2014; IBR approved for § 460.205.

(b) *HUD User*, 11491 Sunset Hills Road, Reston, VA 20190-5254; www.huduser.gov/portal/publications/pdrpubli.html.

(1) HUD User No. 0005945, Overall U-Values and Heating/Cooling Loads—Manufactured Homes, February 1, 1992 (available from www.huduser.org/portal/publications/manufhsg/uvalue.html); IBR approved for § 460.102(e).

(2) [Reserved].

§ 460.4 Energy conservation standards.

(a) *General*. A manufactured home must comply with the energy conservation standards specified for the applicable tier as presented in paragraphs (b) and (c) of this section.

(b) *Tier 1*. A single-section manufactured home (*i.e.*, a Tier 1 manufactured home) must comply with all applicable requirements in subparts B and C of this part.

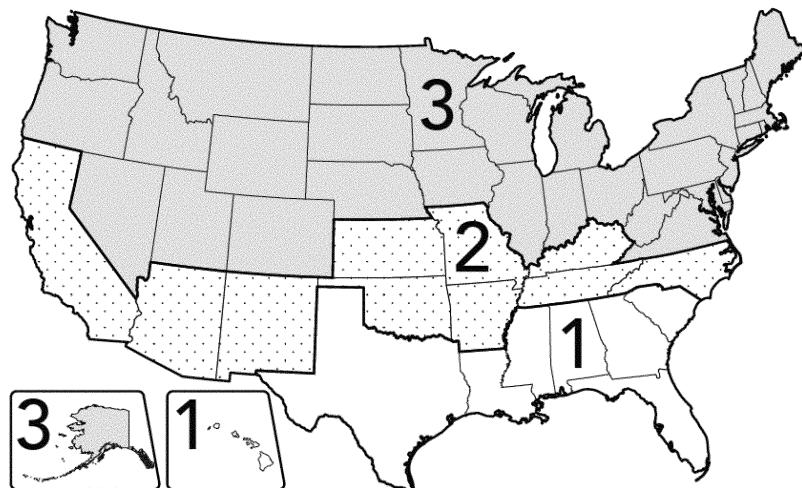
(c) *Tier 2*. A multi-section manufactured home (*i.e.*, a Tier 2 manufactured home) must comply with all applicable requirements in subparts B and C of this part.

Subpart B—Building Thermal Envelope

§ 460.101 Climate zones.

Manufactured homes subject to the requirements of this subpart must comply with the requirements applicable to one or more of the climate zones set forth in figure 1 to § 460.101 and table 1 to § 460.101.

Figure 1 to § 460.101 Climate Zones



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TABLE 1 TO § 460.101—U.S. STATES AND TERRITORIES PER CLIMATE ZONE

Zone 1	Zone 2	Zone 3
Alabama American Samoa Florida Georgia Guam Hawaii Louisiana Mississippi South Carolina Texas The Commonwealth of Puerto Rico U.S. Virgin Islands	Arkansas Arizona California Kansas Kentucky Missouri New Mexico North Carolina Oklahoma Tennessee	Alaska Colorado Connecticut Delaware District of Columbia Idaho Illinois Indiana Iowa Maine Maryland Massachusetts Michigan Minnesota Montana Nebraska Nevada New Hampshire New Jersey New York North Dakota Ohio Oregon Pennsylvania Rhode Island South Dakota Utah Vermont Virginia Washington West Virginia Wisconsin Wyoming

§ 460.102 Building thermal envelope requirements.

(a) *Compliance options.* The building thermal envelope must meet either the prescriptive requirements of paragraph (b) of this section or the performance requirements of paragraph (c) of this section.

(b) *Prescriptive requirements.* (1) The building thermal envelope must meet the applicable minimum *R*-value (nominal value of insulation), and the glazing maximum *U*-factor and SHGC, requirements set forth in table 1 to § 460.102(b)(1) and table 2 to § 460.102(b)(2) or component *U*-values set forth in table 3 to § 460.102(b)(5) and table 4 to § 460.102(b)(5).

TABLE 1 TO § 460.102(b)(1)—TIER 1 BUILDING THERMAL ENVELOPE PRESCRIPTIVE REQUIREMENTS

Climate zone	Exterior wall insulation <i>R</i> -value	Exterior ceiling insulation <i>R</i> -value	Exterior floor insulation <i>R</i> -value	Window <i>U</i> -factor	Skylight <i>U</i> -factor	Door <i>U</i> -factor	Glazed fenestration SHGC
1	13	22	22	1.08	0.75	0.40	0.7
2	13	22	19	0.5	0.55	0.40	0.6
3	19	22	22	0.35	0.55	0.40	Not applicable.

TABLE 2 TO § 460.102(b)(1)—TIER 2 BUILDING THERMAL ENVELOPE PRESCRIPTIVE REQUIREMENTS

Climate zone	Exterior wall insulation <i>R</i> -value	Exterior ceiling insulation <i>R</i> -value	Exterior floor insulation <i>R</i> -value	Window <i>U</i> -factor	Skylight <i>U</i> -factor	Door <i>U</i> -factor	Glazed fenestration SHGC
1	13	30	13	0.32	0.75	0.40	0.33
2	21	30	19	0.30	0.55	0.40	0.25
3	21	38	30	0.30	0.55	0.40	Not applicable.

(2) For the purpose of compliance with the exterior ceiling insulation R -value requirement of paragraph (b)(1) of this section, the truss heel height must be a minimum of 5.5 inches at the outside face of each exterior wall.

(3) A combination of R -21 batt insulation and R -14 blanket insulation may be used for the purpose of compliance with the floor insulation R -value requirement of table 2 to § 460.102(b)(1), Climate Zone 3.

(4) An individual skylight that has an SHGC that is less than or equal to 0.30 is not subject to the glazed fenestration SHGC requirements established in

paragraph (b)(1) of this section. Adapted from section R402 of the 2021 IECC.

(5) U -factor alternatives to R -value requirements. Compliance with the applicable requirements in paragraph (b)(1) of this section may be determined using the applicable maximum U -factor values set forth in table 3 to § 460.102(b)(5) and table 4 to § 460.102(b)(5), which reflect the thermal transmittance of the component, excluding fenestration, and not just the insulation of that component, as an alternative to the minimum nominal R -value requirements set forth in table 1 to § 460.102(b)(1) and table 2 to § 460.102(b)(1), respectively.

TABLE 3 TO § 460.102(b)(5)— U -FACTOR ALTERNATIVES TO TIER 1 R -VALUE REQUIREMENTS

Climate zone	Exterior ceiling U -factor	Exterior wall U -factor	Exterior floor U -factor
1	0.061	0.094	0.049
2	0.061	0.094	0.056
3	0.061	0.068	0.049

TABLE 4 TO § 460.102(b)(5)— U -FACTOR ALTERNATIVES TO TIER 2 R -VALUE REQUIREMENTS

Climate zone	Exterior ceiling U -factor	Exterior wall U -factor	Exterior floor U -factor
1	0.043	0.094	0.078
2	0.043	0.063	0.056
3	0.037	0.063	0.032

(c) *Performance requirements.* (1) The building thermal envelope must have a U_o that is less than or equal to the ap-

plicable value specified in table 5 to § 460.102(c)(1) and table 6 to § 460.102(c)(1).

TABLE 5 TO § 460.102(c)(1)—TIER 1 BUILDING THERMAL ENVELOPE PERFORMANCE REQUIREMENTS

Climate zone	Single-section U_o
1	0.110
2	0.091
3	0.074

TABLE 6 TO § 460.102(c)(1)—TIER 2 BUILDING THERMAL ENVELOPE PERFORMANCE REQUIREMENTS

Climate zone	Multi-section U_o
1	0.082
2	0.066
3	0.055

(2) Area-weighted average vertical fenestration U -factor must not exceed 0.48 in Climate Zone 2 or 0.40 in Climate Zone 3. Adapted from section R402 of the 2021 IECC.

(3) Area-weighted average skylight U -factor must not exceed 0.75 in Climate Zone 2 and Climate Zone 3. Adapted from section R402 of the 2021 IECC.

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(4) Windows, skylights and doors containing more than 50 percent glazing by area must satisfy the SHGC requirements established in paragraph (b)(1) of this section on the basis of an area-weighted average. Adapted from section R402 of the 2021 IECC.

(d) [Reserved].

(e) *Determination of compliance with paragraph (c) of this section.* (1) U_o must be determined in accordance with Overall U -Values and Heating/Cooling

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Loads—Manufactured Homes (incorporated by reference; see § 460.3)

(2) [Reserved]

§ 460.103 Installation of insulation.

Insulating materials must be installed according to the insulation manufacturer's installation instructions and the requirements set forth in table 1 to 460.103, which is adapted from section R402 of the 2021 IECC.

TABLE 1 TO § 460.103—INSTALLATION OF INSULATION

Component	Installation requirements
General	Air-permeable insulation must not be used as a material to establish the air barrier. Access hatches, panels, and doors between conditioned space and unconditioned space, such as attics and crawlspaces, must be insulated to a level equivalent to the insulation of the surrounding surface, must provide access to all equipment that prevents damaging or compressing the insulation, and must provide a wood-framed or equivalent baffle or retainer when loose fill insulation is installed within an exterior ceiling assembly to retain the insulation both on the access hatch, panel, or door and within the building thermal envelope.
Baffles	For air-permeable insulations in vented attics, a baffle must be installed adjacent to soffit and eave vents. Baffles, when used in conjunction with eave venting, must be constructed using a solid material, maintain an opening equal or greater than the size of the vents, and extend over the top of the attic insulation.
Ceiling or attic	The insulation in any dropped ceiling or dropped soffit must be aligned with the air barrier.
Narrow cavities	Batts to be installed in narrow cavities must be cut to fit or narrow cavities must be filled with insulation that upon installation readily conforms to the available cavity space.
Rim joists	Rim joists must be insulated such that the insulation maintain permanent contact with the exterior rim board.
Shower or tub adjacent to exterior wall	Exterior walls adjacent to showers and tubs must be insulated.
Walls	Air permeable exterior building thermal envelope insulation for framed exterior walls must completely fill the cavity, including within stud bays caused by blocking, lay flats or headers.

§ 460.104 Building thermal envelope air leakage.

Manufactured homes must be sealed against air leakage at all joints, seams, and penetrations associated with the building thermal envelope in accordance with the component manufacturer's installation instructions and the requirements set forth in table 1 to 460.104. Sealing methods between dissimilar materials must allow for differential expansion, contraction and mechanical vibration, and must establish a continuous air barrier upon in-

stallation of all opaque components of the building thermal envelope. All gaps and penetrations in the exterior ceiling, exterior floor, and exterior walls, including ducts, flue shafts, plumbing, piping, electrical wiring, utility penetrations, bathroom and kitchen exhaust fans, recessed lighting fixtures adjacent to unconditioned space, and light tubes adjacent to unconditioned space, must be sealed with caulk, foam, gasket or other suitable material. The air barrier installation criteria are adapted from section R402 of the 2021 IECC.

TABLE 1 TO § 460.104—AIR BARRIER INSTALLATION CRITERIA

Component	Air barrier criteria
Ceiling or attic	The air barrier in any dropped ceiling or dropped soffit must be aligned with the insulation and any gaps in the air barrier must be sealed with caulk, foam, gasket, or other suitable material. Access hatches, panels, and doors, drop-down stairs, or knee wall doors to unconditioned attic spaces must be weather-stripped or equipped with a gasket to produce a continuous air barrier.