

§ 460.103

10 CFR Ch. II (1–1–25 Edition)

(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

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	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.

TABLE 1 TO § 460.104—AIR BARRIER INSTALLATION CRITERIA—Continued

Component	Air barrier criteria
Duct system register boots	Duct system register boots that penetrate the building thermal envelope or the air barrier must be sealed to the subfloor, wall covering or ceiling penetrated by the boot, air barrier, or the interior finish materials with caulk, foam, gasket, or other suitable material.
Electrical box or phone box on exterior walls.	The air barrier must be installed behind electrical and communication boxes or the air barrier must be sealed around the box penetration with caulk, foam, gasket, or other suitable material.
Floors	The air barrier must be installed at any exposed edge of insulation. The bottom board may serve as the air barrier.
Mating line surfaces	Mating line surfaces must be equipped with a continuous and durable gasket.
Recessed lighting	Recessed light fixtures installed in the building thermal envelope must be sealed to the drywall with caulk, foam, gasket, or other suitable material.
Rim joists	The air barrier must enclose the rim joists. The junctions of the rim board and the subfloor must be air sealed.
Shower or tub adjacent to exterior wall	The air barrier must separate showers and tubs from exterior walls.
Walls	The junction of the top plate and the exterior ceiling, and the junction of the bottom plate and the exterior floor, along exterior walls must be sealed with caulk, foam, gasket, or other suitable material.
Windows, skylights, and exterior doors	The rough openings around windows, exterior doors, and skylights must be sealed with caulk or foam.

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

§ 460.201 Duct system.

Each manufactured home equipped with a duct system, which may include air handlers and filter boxes, must be sealed to limit total air leakage to less than or equal to four (4) cubic feet per minute per 100 square feet of conditioned floor area at a pressure differential of 0.1 inch w.g. (25 Pascals) across the system. Building framing cavities must not be used as ducts or plenums when directly connected to mechanical systems. The duct total air leakage requirements are adapted from section R403 of the 2021 IECC.

§ 460.202 Thermostats and controls.

(a) At least one thermostat must be provided for each separate heating and cooling system installed by the manufacturer. The thermostat and controls requirements are adapted from section R403 of the 2021 IECC.

(b) Any programmable thermostat installed by the manufacturer that controls the heating or cooling system must—

(1) Be capable of controlling the heating and cooling system on a daily schedule to maintain different temperature set points at different times of the day and different days of the week;

(2) Include the capability to set back or temporarily operate the system to maintain zone temperatures down to 55 °F (13 °C) or up to 85 °F (29 °C); and

(3) Initially be programmed with a heating temperature set point no higher than 70 °F (21 °C) and a cooling temperature set point no lower than 78 °F (26 °C).

(c) Heat pumps with supplementary electric-resistance heat must be provided with controls that, except during defrost, prevent supplemental heat operation when the heat pump compressor can meet the heating load.

§ 460.203 Service hot water.

(a) Service hot water systems installed by the manufacturer must be installed according to the service hot water manufacturer's installation instructions. Where service hot water systems are installed by the manufacturer, the manufacturer must ensure that any maintenance instructions received from the service hot water system manufacturer are provided with the manufactured home. The service hot water requirements are adapted from section R403 of the 2021 IECC.

(b) Any automatic and manual controls, temperature sensors, pumps associated with service hot water systems must provide access.

(c) Heated water circulation systems must—

(1) Be provided with a circulation pump;