

**SECTION R329
DWELLING UNITS CONTAINING A LOFT**

Note: Code provisions allowing sleeping lofts with ladder access are required to implement Chapter 394, Oregon Laws 2017 (HB 2737). The national model codes have historically prohibited lofts for sleeping purposes due to smoke inhalation risk. These provisions attempt to mitigate life safety issues presented by sleeping lofts and ladders or alternating tread devices. Unlike with other items in the state building code, the Building Codes Division found no national testing on, or analysis of, safety issues presented by use of a sleeping loft with ladder or alternating tread device access. The Building Codes Division also found no national testing or analysis to mitigate fire risk for sleeping in "small" dwellings. Builders, owners, and users of residential dwellings with lofts, as well as "small" dwelling occupants, can find additional information on the Building Code Division's website and testimony related to HB 2737 (2017) through the Oregon Legislature.

R329.1 Scope. The provisions of this section apply to all *dwelling units* that contain a *loft*. Where this section does not provide a specific requirement or allowance, the provisions in the remainder of the code shall govern.

R329.1.1 Limitations. *Dwelling units* shall not contain more than one *loft*, or *loft space*. *Dwelling units* that contain a *loft* may not be used for any purpose other than as a detached one-family dwelling.

R329.2 Definitions. The following words and terms shall, for the purposes of this section, have the meanings shown herein. Refer to Chapter 2 of this code for general definitions.

EGRESS ROOF ACCESS WINDOW. A skylight or roof window designed and installed to satisfy the *emergency escape and rescue opening* requirements of Section R310.

LANDING PLATFORM. A landing provided as the top step of a stairway accessing a *loft*.

LOFT. Any floor level located above the main floor and open to

the main floor on at least one side, with a *ceiling height* less than 6 feet 8 inches (2032 mm), complying with the area, access, and guard requirements of R329, and used as a living or sleeping space.

R329.3 Exterior walls of dwelling units with a loft. Construction, projections, openings and penetrations of *exterior walls* of *dwelling units* containing a *loft* shall comply with Table R329.3.

Exceptions:

1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the *fire separation distance*.
2. Foundation vents installed in compliance with this code are permitted.

R329.4 Minimum loft areas. *Lofts* used as a sleeping or living space shall meet the minimum area and dimension requirements of Sections R329.4.1 through R329.4.5.

R329.4.1 Minimum area. *Lofts* shall have a floor area of not less than 35 square feet (3.25 m²).

R329.4.2 Minimum dimensions. *Lofts* shall be not less than 5 feet (1524 mm) in any horizontal dimension.

R329.4.3 Height effect on loft area. Portions of a *loft* with a sloping ceiling measuring less than 3 feet (914 mm) from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required area for the *loft*.

Exception: Under gable roofs with a minimum slope of 6 units vertical in 12 units horizontal, portions of a *loft* with a sloping ceiling measuring less than 16 inches (406 mm) from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required area for the *loft*.

**TABLE R329.3
DWELLING UNITS CONTAINING A LOFT - EXTERIOR WALLS AND PROJECTIONS**

EXTERIOR WALL ELEMENT		FIRE-RESISTANCE RATING AND SAFEGUARDS REQUIRED	FIRE SEPARATION DISTANCE
Walls	(Fire-resistance rated)	2 hour-tested in accordance with ASTM E 119 or UL 263 with exposure from both sides, and ; Exterior wall covering with a flame spread index of 25 or less as determined in accordance with ASTM E 84 or UL 723, or <i>approved equivalent</i>	< 3 feet
	(Fire-resistance rated)	1 hour-tested in accordance with ASTM E 119 or UL 263 with exposure from both sides	≥ 3 < 5 feet
	(Not fire-resistance rated)	0 hours	≥ 5 feet
Projections	Not allowed	N/A	< 2 feet
	(Fire-resistance rated)	1 hour on the underside	≥ 2 feet < 5 feet
	(Not fire-resistance rated)	0 hours	≥ 5 feet
Openings in walls	Not allowed	N/A	< 3 feet
	15% maximum of wall area	0 hours	≥ 3 feet < 5 feet
	Unlimited	0 hours	≥ 5 feet
Penetrations	All	Comply with Section R302.4	< 5 feet
		None required	≥ 5 Feet

BUILDING PLANNING

R329.4.4 Minimum ceiling height. *Lofts* shall have a *ceiling height* of not less than 3 feet (914.4 mm).

R329.4.4.1 Undersized lofts. *Lofts* having a *ceiling height* of less than 6 feet (1828.8 mm) for more than 50 percent of the required minimum area shall comply with both of the following:

1. All interior wall and ceiling of the *dwelling unit* shall be a minimum ½" gypsum board or other *approved* Class A finish, throughout the entire *dwelling unit*.
2. In addition to the *loft* smoke alarm required by R329.8, all other required smoke alarms within the *dwelling unit* shall be a *photoelectric*-type complying with Section R314.

R329.4.5 Maximum loft size. The aggregate floor area of a *loft* shall not be greater than one-third of the floor area of the room or space in which they are located.

R329.5 Automatic fire sprinkler systems. *Dwelling units* containing a *loft* shall be equipped throughout with an automatic sprinkler system in accordance with Appendix T or NFPA 13D.

R329.5.1 Interior finishes. All interior wall and ceiling finishes of *dwelling units* containing a *loft* shall be Class B finishes or other *approved* materials with a flame spread index of less than 75 and a smoke development index of less than 450, throughout the entire *dwelling unit*.

Exception: *Lofts* required to meet Section R329.4.4.1.

R329.6 Loft access. The access to and primary egress from a *loft* within *dwelling units* of a maximum 600 square feet (55.7 m²) in floor area shall be of any type described in Sections R329.6.1 through R329.6.4. The access to and primary egress from a *loft* within *dwelling units* with a floor area greater than 600 square feet shall be in accordance with Section R311. All methods of *loft* access and egress shall be positively anchored to prevent displacement.

R329.6.1 Stairways. Stairways accessing *lofts* shall comply with this code or with Sections R329.6.1.1 through R329.6.1.6.

R329.6.1.1 Width. Stairways serving a *loft* shall not be less than 17 inches (432 mm) in clear width at all points at or above the permitted handrail height. The minimum width below the handrail shall not be less than 20 inches (508 mm).

R329.6.1.2 Headroom. The headroom in stairways serving a *loft* shall not be less than 6 feet 2 inches (1880 mm) measured vertically from the sloped line connecting the tread nosings in the middle of the tread width.

Exception: The headroom for *landing platforms* shall not be less than 4 feet 4 inches (1321 mm).

R329.6.1.3 Treads and Risers. Risers for stairs serving a *loft* shall be a minimum of 7 inches (178 mm) and a maximum of 12 inches (305 mm). Tread depth and riser height shall be calculated with the following formulas:

Tread depth = 20 inches (508 mm) minus $\frac{4}{3}$ riser height

OR

Riser height = 15 inches (381 mm) minus $\frac{3}{4}$ tread depth

R329.6.1.4 Landing platforms. The top tread and riser of *stairways* accessing *lofts* shall be constructed as a *landing platform* where the *loft ceiling height* is less than 6 feet 2 inches (1880 mm) where the *stairway* meets the *loft*. The *landing platform* shall be 18 inches to 22 inches (457 to 559 mm) in depth measured from the nosing of the *landing platform* to the edge of the *loft*, and 16 to 18 inches (406 to 457 mm) in height measured from the *landing platform* to the *loft* floor.

R329.6.1.5 Handrails. Handrails shall comply with Section R311.

R329.6.1.6 Stairway guards. Guards at open sides of *stairways* shall comply with Section R312.

R329.6.2 Ladders. Ladders serving *lofts* shall comply with Sections R329.6.2.1 and R329.6.2.2.

R329.6.2.1 Size and capacity. Ladders serving *lofts* shall have 12 inches (305 mm) minimum rung width and 10 inch (254 mm) to 14 inch (356 mm) spacing between rungs. Ladders shall be capable of supporting a 300 pound (136 kg) load on any rung. Rung spacing shall be uniform within 3/8-inch (9.5 mm). The maximum height of a ladder shall be 8 feet (2438 mm).

R329.6.2.2 Incline. Ladders shall be installed at a minimum 70 to a maximum 80 degrees from horizontal.

R329.6.3 Alternating tread devices. *Alternating tread devices* serving *lofts* shall comply with Section R311. The clear width at and below the handrails shall be not less than 20 inches (508 mm).

R329.6.4 Ships ladders. *Ships ladders* serving *lofts* shall comply with Section R311. The clear width at and below the handrails shall be not less than 20 inches (508 mm).

R329.7 Loft guards. *Loft guards* shall be located along the open side(s) of *lofts* located more than 30 inches (762 mm) above the main floor. *Loft guards* shall be not less than 36 inches (914 mm) in height, and are not required at the *loft* accessing means connection to the *loft*.

R329.8 Loft smoke alarms. *Lofts* shall be equipped with a minimum of one *photoelectric*-type smoke alarm complying with Section R314.

R329.9 Loft location. *Lofts* shall not be located directly above a permanently installed cooking *appliance*. Permanently installed cooking *appliances* shall not be located within 12 inches (304.8 mm) horizontally of a *loft* open edge, measured to the vertical plane of the *loft* edge.

R329.10 Emergency escape. *Dwelling units* containing a *loft* shall meet the requirements of Section R310 for *emergency escape and rescue openings*.

Exception: *Egress roof access windows* in a *loft* used as sleeping rooms shall be deemed to meet the requirements of Section R310 for the *loft* space where installed with the bottom of their clear opening no more than 44 inches (1118 mm) above the *loft* floor, provided the *egress roof access window* complies with the minimum opening area requirements of Section R310.2.1.