



No. 14-03
State Building Code – Scope
Retaining Walls

This is current
code for
2018

Statutory Reference: Oregon Revised Statute (ORS) 455.020

Statute Edition: 2013 Compilation

Date: November 20, 2014

Subject: Regulation of Retaining Walls

Question:

Does the scope of the State Building Code include the regulation of all retaining walls?

Answer:

No. The scope of the *State Building Code* is limited to those retaining walls providing safeguards for the users of buildings.

Analysis:

Per ORS 455.010, the “State Building Code” consists of the various specialty codes adopted by the Department of Consumer and Business Services. The stated purpose of the state building code as provided in ORS 455.020 is to; “...*establish uniform performance standards providing reasonable safeguards for health, safety, welfare, comfort and security of the residents of this state who are occupants and users of buildings.*” (emphasis added) (et al)

The regulation of retaining walls in both the *Oregon Structural Specialty Code* and the *Oregon Residential Specialty Code* is limited to applications where the installation of the retaining wall has a direct impact on the structural integrity of regulated buildings or the usability of the means of egress and/or a required exterior accessible route.

Examples of retaining walls within the scope of the State Building Code:

- Retaining material which in turn supports a regulated building, accessory parking, a required accessible route or the means of egress
- Retaining materials which, if not restrained, could impact buildings, accessory parking, a required accessible route or the means of egress

Examples of retaining walls outside the scope of the State Building Code:

- Retaining material solely for landscaping purposes

The information contained in this statewide statutory interpretation is legally binding on any party involved in activities regulated by applicable Oregon law, applicable Oregon regulations or State Building Code. If the information contained in this statewide statutory interpretation is cited as a basis for a civil infraction, a representative of the jurisdiction must cite the interpretation number found in this document.



- Retaining material at a property line where the impact on a regulated building is not a concern
- Retaining material protecting a private road or non-required exterior pedestrian walkways

Contact:

Richard S. Rogers
Chief Building Official
Richard.Rogers@oregon.gov
(503) 378-4472

Rex Turner
Structural Program Chief
Rex.L.Turner@oregon.gov
(503) 373-7755

SECTION R105 PERMITS

R105.1 Required. Any owner or owner's authorized agent who intends to construct, enlarge, alter, repair, move, demolish or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be performed, shall first make application to the *building official* and obtain the required *permit*.

R105.2 Work exempt from permit. Exemption from *permit* requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this *municipality*. *Permits* shall not be required for the following:

Building:

1. Nonhabitable one-story detached *accessory structures*, provided that the floor area does not exceed 200 square feet (18.58 m²) and a wall height of 10 feet (3048 mm) measured from the finished floor level to the top of the top plate.

Exception: Where the structure is located on a parcel of 2.0 acres or greater in area, and the structure is located a minimum of 20 feet (6096 mm) from all property lines, floor area may be increased to 400 square feet (37.16 m²).

2. Except for barriers around swimming pools as required in Appendix G, fences not over 7 feet (2134 mm) high and typical field fencing not over 8 feet (2438 mm) high where constructed of woven wire or chain link.
3. Retaining walls that do not support a regulated building, do not retain material which, if not restrained, could impact a regulated building.
4. Water tanks supported directly upon *grade* if the capacity does not exceed 5,000 gallons (18 927 L) and the ratio of height to diameter or width does not exceed 2 to 1.
5. Concrete sidewalks, slabs, platforms and driveways.
6. Painting, papering, tiling, carpeting, cabinets, counter tops, interior wall, floor or ceiling covering and similar finish work.
7. Prefabricated swimming pools accessory to a Group R-3 Occupancy where the pool walls are entirely above the adjacent grade. Barrier requirements found in Appendix G are not exempt.
8. Swings and other playground equipment.
9. Patio covers, as defined in AH102, and porch covers not over 200 square feet (11 m²) and supported by an exterior building wall.
10. Window awnings supported by an exterior wall that do not project more than 54 inches (1372 mm) from the exterior wall and do not require additional support.
11. Nonbearing partitions, except when such partitions create habitable rooms.
12. Replacement or repair of siding not required to be fire resistive.
13. Retrofitted insulation.
14. Masonry repair.

15. Porches and decks, where the floor or deck is not more than 30 inches (762 mm) above adjacent grade measured at any point within 3 feet (914 mm) horizontally of the floor or deck, and where in the case of a covered porch, the covered portion of the porch does not come closer than 3 feet (914 mm) to property lines.
16. Gutters and downspouts
17. Door and window replacements (where no structural member is changed).
18. Re-roofing, where replacement or repair of roofing does not exceed 30 percent of the required live load design capacity and the roof is not required to be fire resistive

Exceptions:

1. Permits for re-roofing are required for structures in wildfire hazard zones as provided in Section R327; and
 2. Structures falling within the scope of Section R302.2.
 3. Permits for re-roofing are required where more than 15 percent of the existing space sheathing is removed to facilitate the installation of new sheathing.
19. Plastic glazed storm windows.
 20. Framed-covered nonhabitable accessory buildings not more than 500 square feet (46.45 m²) in area, one story in height and not closer than 3 feet (914 mm) to a property line, where the structure is composed of a rigid framework that supports a fabric membrane.
 21. Ground mounted flagpoles, antennae, and similar items that do not exceed 25 feet in height.

Unless otherwise exempted, separate plumbing, electrical and mechanical permits may be required for the above exempted items. In addition, all new construction and substantial improvements (including the placement of prefabricated buildings and certain building work exempt from permit under Section R105.2) shall be designed and constructed with methods, practices and materials that minimize flood damage in accordance with this code, FEMA regulations and ASCE 24.

TABLE R404.2.3
PLYWOOD GRADE AND THICKNESS FOR WOOD FOUNDATION CONSTRUCTION (30 pcf equivalent-fluid weight soil pressure)

HEIGHT OF FILL (inches)	STUD SPACING (inches)	FACE GRAIN ACROSS STUDS			FACE GRAIN PARALLEL TO STUDS		
		Grade ^a	Minimum thickness (inches)	Span rating	Grade ^a	Minimum thickness (inches) ^{b, c}	Span rating
24	12	B	15/32	32/16	A	15/32	32/16
					B	15/32 ^c	32/16
	16	B	15/32	32/16	A	15/32 ^c	32/16
					B	19/32 ^c (4, 5 ply)	40/20
36	12	B	15/32	32/16	A	15/32	32/16
					B	15/32 ^c (4, 5 ply)	32/16
					B	19/32 (4, 5 ply)	40/20
	16	B	15/32 ^c	32/16	A	19/32	40/20
					B	23/32	48/24
					A	15/32 ^c	32/16
48	12	B	15/32	32/16	B	19/32 ^c (4, 5 ply)	40/20
					A	19/32 ^c	40/20
	16	B	19/32	40/20	A	19/32 ^c	40/20
					A	23/32	48/24

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per cubic foot = 0.1572 kN/m³.

a. Plywood shall be of the following minimum grades in accordance with DOC PS 1 or DOC PS 2:

1. DOC PS 1 Plywood grades marked:
 - 1.1. Structural I C-D (Exposure 1).
 - 1.2. C-D (Exposure 1).
2. DOC PS 2 Plywood grades marked:
 - 2.1. Structural I Sheathing (Exposure 1).
 - 2.2. Sheathing (Exposure 1).
3. Where a major portion of the wall is exposed above ground and a better appearance is desired, the following plywood grades marked exterior are suitable:
 - 3.1. Structural I A-C, Structural I B-C or Structural I C-C (Plugged) in accordance with DOC PS 1.
 - 3.2. A-C Group 1, B-C Group 1, C-C (Plugged) Group 1 or MDO Group 1 in accordance with DOC PS 1.
 - 3.3. Single Floor in accordance with DOC PS 1 or DOC PS 2.

b. Minimum thickness 15/32 inch, except crawl space sheathing shall have not less than 3/8 inch for face grain across studs 16 inches on center and maximum 2-foot depth of unequal fill.

c. For this fill height, thickness and grade combination, panels that are continuous over less than three spans (across less than three stud spacings) require blocking 16 inches above the bottom plate. Offset adjacent blocks and fasten through studs with two 16d corrosion-resistant nails at each end.

R404.2.4 Backfilling. Wood foundation walls shall not be backfilled until the *basement* floor and first floor have been constructed or the walls have been braced. For crawl space construction, backfill or bracing shall be installed on the interior of the walls prior to placing backfill on the exterior.

R404.2.5 Drainage and dampproofing. Wood foundation basements shall be drained and dampproofed in accordance with Sections R405 and R406, respectively.

R404.2.6 Fastening. Wood structural panel foundation wall sheathing shall be attached to framing in accordance with Table R602.3(1) and Section R402.1.1.

R404.3 Wood sill plates. Wood sill plates shall be a minimum of 2-inch by 4-inch (51 mm by 102 mm) nominal lumber. Sill plate anchorage shall be in accordance with Sections R403.1.6 and R602.11.

R404.4 Retaining walls. Retaining walls that are not laterally supported at the top and that retain in excess of 48 inches (1219 mm) of unbalanced fill, or retaining walls exceeding 24

inches (610 mm) in height that resist lateral loads in addition to soil, shall be designed in accordance with accepted engineering practice to ensure stability against overturning, sliding, excessive foundation pressure and water uplift. Retaining walls shall be designed for a safety factor of 1.5 against lateral sliding and overturning. This section shall not apply to foundation walls supporting buildings.

R404.5 Precast concrete foundation walls.

R404.5.1 Design. Precast concrete foundation walls shall be designed in accordance with accepted engineering practice. The design and manufacture of precast concrete foundation wall panels shall comply with the materials requirements of Section R402.3 or ACI 318. The panel design drawings shall be prepared by a registered design professional where required by the statutes of the *jurisdiction* in which the project is to be constructed in accordance with Section R106.1.

R404.5.2 Precast-concrete foundation design drawings. Precast concrete foundation wall design drawings shall be