

Residential Insulation

This tip sheet reflects code requirements of the 2018 International Residential Code (IRC) with Washington State Amendments.

Please verify the following before calling for insulation inspection.

Permits and Plans

- Permit and approved plans are on the site. (R106.3.1, R105.7, local ordinance)
- Previous required inspections are signed off. (R109.4, local ordinance)
- Note corrections left which need to be addressed at this time.
- Plans have been reviewed for insulation requirements. (WSEC R103)

General

- The newly constructed area is dried in (roofing is complete and exterior moisture barriers are installed). (R701.2)
- Insulation is installed at roof, walls, and floors at the thickness indicated per prescriptive requirements unless superseded by the approved plans. (WSEC R402)
- Prescriptive insulation requirements for residential occupancies are per WSEC Table R402.1.1

WSEC Table R402.1.1: Prescriptive Insulation Requirements for Residential Occupancies

Ceilings (1)	Vaulted Ceilings	Walls Above Grade	Wall Interior Below Grade (2)	Wall Exterior Below Grade (2)	Floor	Slab-on-Grade (2)
R-49	R-38	R-21	R-21	R-10	R-30	R-10

1. For single rafter or joist vaulted ceilings the insulation may be reduced to R-38
 2. Below grade walls shall be insulated either on the exterior to a minimum level of R-10, or on the interior to the same level as walls above grade. Exterior insulation installed on below grade walls shall be a water-resistant material, manufactured for its intended use, and installed according to the manufacturer's specifications.
- Any insulation with facings, vapor barriers, or breathable papers, installed within floor/ceiling or roof/ceiling assemblies, walls, crawl spaces, under-stair voids, or attics, is required to have a minimum flame spread rating of less than 25 and a smoke density not to exceed 450. (R302.10.1)
Exception: Limits don't apply when facing is installed in substantial contact with the unexposed surface of ceiling, floor, or wall. Unfaced insulation is okay when concealed in areas previously mentioned.

- Insulation is securely installed in floors, walls, and ceilings not being fully enclosed (fireplaces, crawl space walls, etc.). (WSEC R402.2.8, WSEC Table R402.4.1.1)
- Insulation materials must display the R-rating on a side visible for inspections. (WSEC R303.1.2)
- All recessed light fixtures are IC (insulation contact) rated or enclosed within a sealed assembly. (WSEC R402.4.5)

Access Hatches and Doors

- Access doors from conditioned spaces to unconditioned spaces are weather-stripped and insulated to a level equal to the insulation at surrounding surfaces. (WSECR402.2.4)
- Wood framing, or equivalent retainer, is installed around the perimeter of the attic access to the height of surrounding insulation to prevent insulation from spilling and to maintain the R-value at the access. (WSEC R402.2.4)

Attic Insulation

- For air permeable insulations baffles are installed adjacent to soffit and eave vents. (WSEC R402.2.3)
- For open blown or poured attic insulation, R-value depth markers are installed in the attic, showing the installed thickness and maximum settling thickness, and installed every 300 square feet and visible from the attic access. (WSECR303.1.1.1)
- Loose fill insulation may be used in attic spaces where the slope does not exceed 3 in 12 and where there is at least 30 inches of clear distance from the top of the bottom chord of the truss or ceiling joist to the underside of the sheathing at the roof ridge. (WSECR402.2.1.1)

Wall and Ceiling Insulation

- All faced insulation is stapled over the face of the framing member. Insulation may also be unfaced with a vapor barrier installed over the whole wall or unfaced with a PVA primer used to seal drywall. (WSEC table402.4.1.1)
- Air leakage barrier is installed to warm side of wall, floor, or ceiling. (WSEC R402.4)

Floor Insulation

- The floor insulation is installed securely in substantial contact with the surface being insulated. (WSEC R402.2.7)
- Insulation supports are installed at a maximum of 24 inches on center. Crawl space insulation typically checked at final inspection. (WSEC R402.2.8)
- Insulation is not blocking the foundation vents. (WSEC R402.2.8)
Note: The permanent baffle may be installed at 30 degrees from horizontal to divert airflow below the lower surface of insulation. Typically checked at final inspection.

Slab Insulation (On-Grade and Below-Grade)

- Slab insulation, if installed inside the foundation wall, extends down from the top of the slab for 24 inches or to the top of the footing, whichever is less, or extends down from the top of the slab and horizontally beneath the slab for total of 24 inches. No insulation is required for slabs installed 2 feet minimum below grade. (WSEC R402.2.9; Table WSEC R402.1.1)
- The entire area of a radiant slab is thermally isolated from the soil with a minimum of R-10 insulation and the insulation must be approved for the use. A mechanical rough-in inspection must be approved before the slab/foundation pour when a radiant heat system is being used. (WSEC R402.2.2.9.1)
- Exposed above-grade insulation is protected from physical and ultraviolet damage. (WSEC R303.2.1)
- Insulation installed on the cold side of a wall extends from the top of the below-grade wall to the top of the footing. (WSEC R402.2.8)
- Insulation installed on the warm side of a wall extends from the top of the below-grade wall to the below-grade floor level. (WSEC R402.2.8)

Moisture Control

Vapor Retarder

- Vapor retarder is installed. See [Wall and Ceiling Insulation](#) section. (IRC R702.7)
- Vapor retarder has a one perm dry cup rating or less (typically 4-mil polyethylene, kraft-faced material, or PVA). (WSEC R702.7.2)

Ground Cover

- 6-mil black plastic is installed at the crawlspace, overlapped a minimum 12 inches and running wall to wall.
Exception: Ground cover may be omitted if the crawlspace has a concrete slab floor with a minimum thickness of 3-1/2 inches.

Seals and Weather-Stripping

- Exterior joints around windows, door frames, openings between walls and foundations, openings at utility services through walls, floors, and roofs are sealed, caulked, gasketed, or weather-stripped to limit air leakage. (WSEC R402.4, WSEC Table R402.4.1.1)
- Bottom plates and corners at insides of exterior walls have been caulked. (WSEC Table R402.4.1.1)
- All exterior doors, and doors serving as access to enclosed unheated areas, are weather-stripped. (WSEC R402.4, WSEC Table R402.4.1.1)