

Garage Conversions

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

General Requirements

Converting your existing garage (or a portion of it) into living space requires that the project meet the same requirements for new construction. Here is a summary of the general requirements for this kind of project:

- Permits and plans are required
- Check with your local land use/planning department to see if you need to provide parking for the spots you are displacing
- New conditioned (heated) area must be fully insulated (ceiling, walls, foundation walls and floor) to the same R-values required for new construction
- Additional energy credits must be selected (based on square footage) and plans must show required information
- Bedrooms require egress windows or doors (see tip sheet #10) and cannot have openings (like windows) directly into the garage
- If your driveway slopes towards the garage, water may leak into the new living space (see curb detail on next page), so discuss your options with your local jurisdiction

Floor plans must show all proposed work, such as: existing and proposed walls; windows and doors; room uses labeled; smoke, carbon monoxide and heat detectors; exhaust fans; stairs and proposed plumbing fixtures.

Detailed cross section(s) indicating floor, wall and roof construction, materials, insulation, and ceiling height are also required.

The following pages contain details that illustrate construction requirements including how to insulate an existing slab-on-grade floor.

Creating a Curb in the Garage Door Opening

When infilling the garage door with a wall, a curb is required for anchoring the bottom of the wall (see Figure 1).

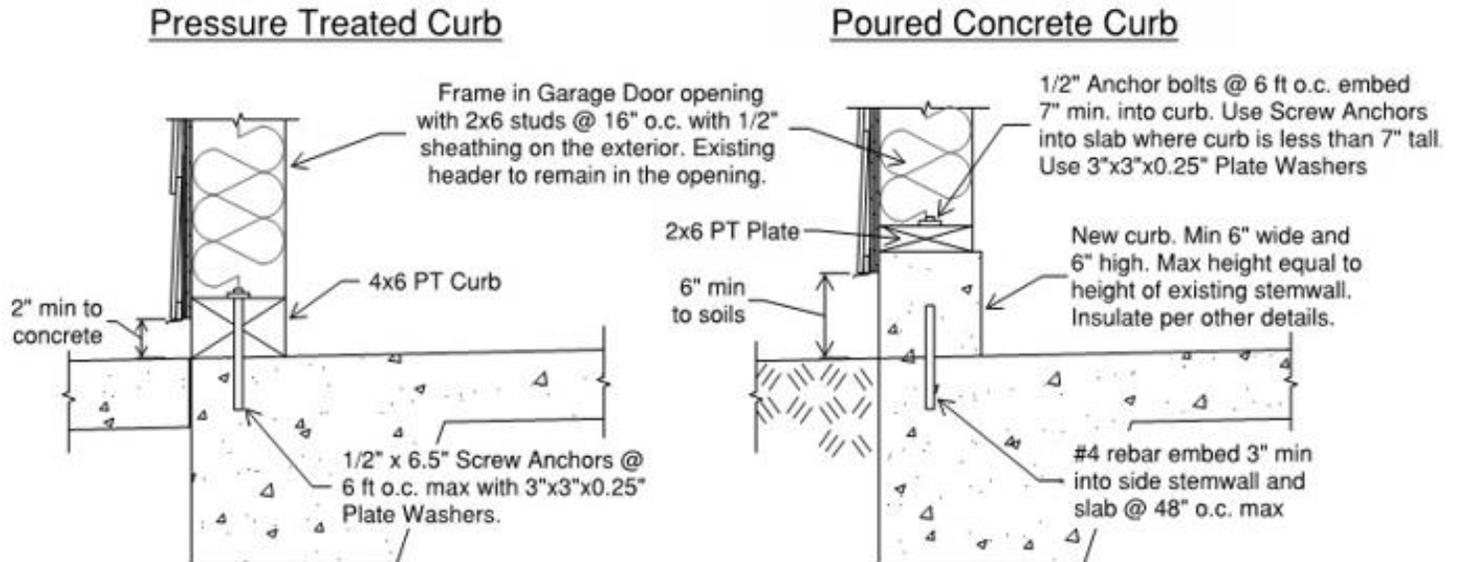


Figure 1: Options for Creating a Curb in the Garage Door Opening

Creating a New Footing under the Slab

Some existing garage slabs will not have a thickened footing that runs beneath the slab in the garage door opening. In these cases, it is often required to dig under the slab and add a footing to support the new wall above. Figure 2 shows one way in which this can be done. For other options speak to your jurisdiction. Excavation may be required to verify the existing slab thickness.

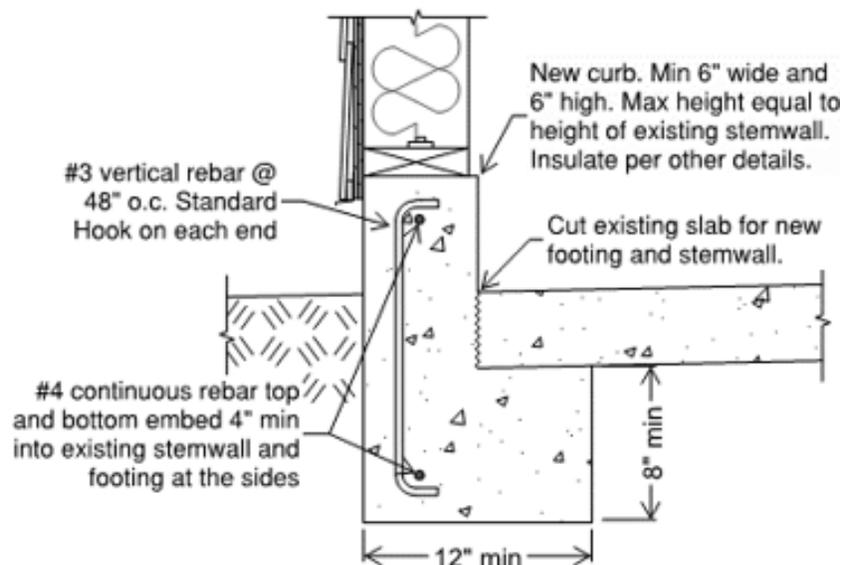


Figure 2: New Footing Under the Slab

Energy Code Requirements

Window and Exterior Doors

Windows and exterior doors located in the newly conditioned space must have a maximum U-factor of 0.30. Replacement of existing windows and doors may be required.

Roof Insulation and Ventilation

The attic space above the newly conditioned area is required to have R-49 insulation and be ventilated with a minimum vent area of 1 square foot for every 150 square feet of attic area (or 1 square foot for every 300 square feet if 40%-50% of the vents are within 3 feet vertically of the ridge). Attics with a height of 30 inches (or more) and an area of 30 square feet (or more) must have an access opening (22 inches by 30 inches minimum). Single-joint rafter/vaulted ceilings require R-38 insulation.

Foundation and Framed Walls

The foundation walls enclosing the new conditioned space are required to be insulated above and below grade, and framed walls require R-21 insulation as per Figure 3.

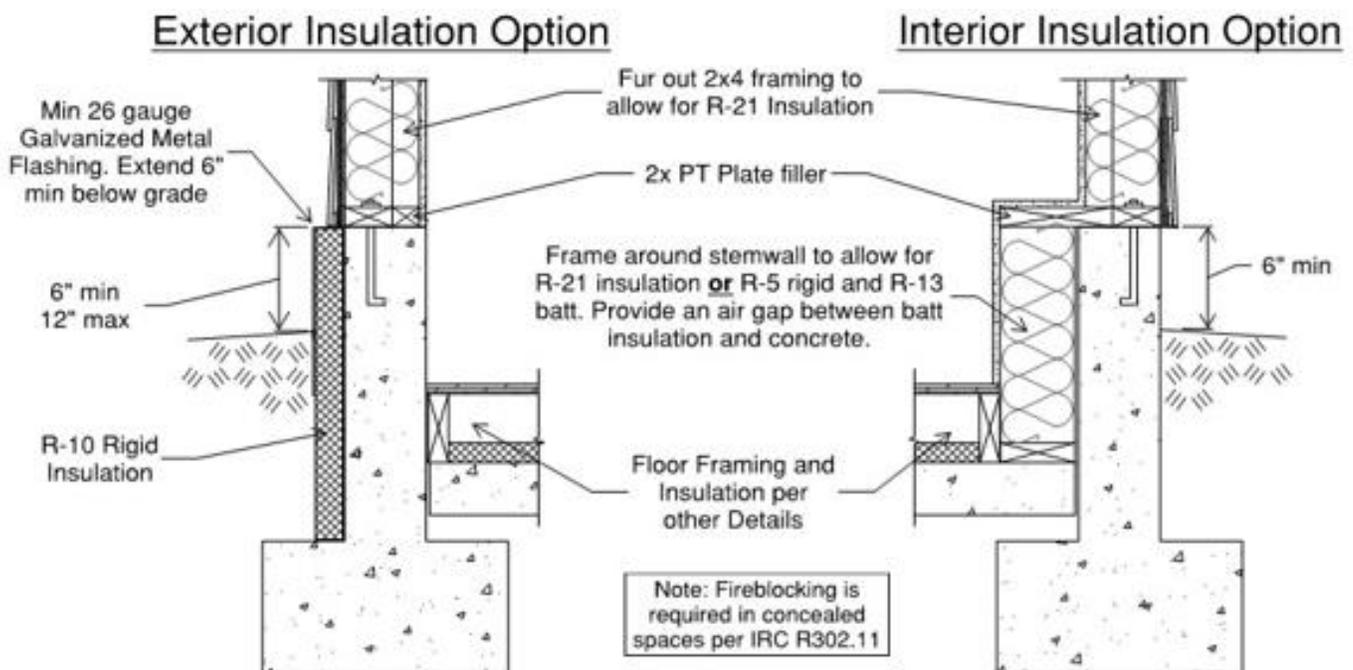


Figure 3: Foundation and Framed Wall Insulation Options

Floor Insulation

The floor of the newly conditioned area is required to be insulated. While the energy code requires R-10 insulation under the slab at the perimeter, we realize that removing and replacing portions of the slab is difficult. Figure 4 depicts two approved insulation options above the slab that are equivalent to under-slab perimeter insulation.

Note: If batt insulation is to be used in raised framing without the R-7.5 rigid insulation indicated below, the minimum value is R-30, and the space below the floor joists will either need to be ventilated or filled to capacity with rigid insulation.

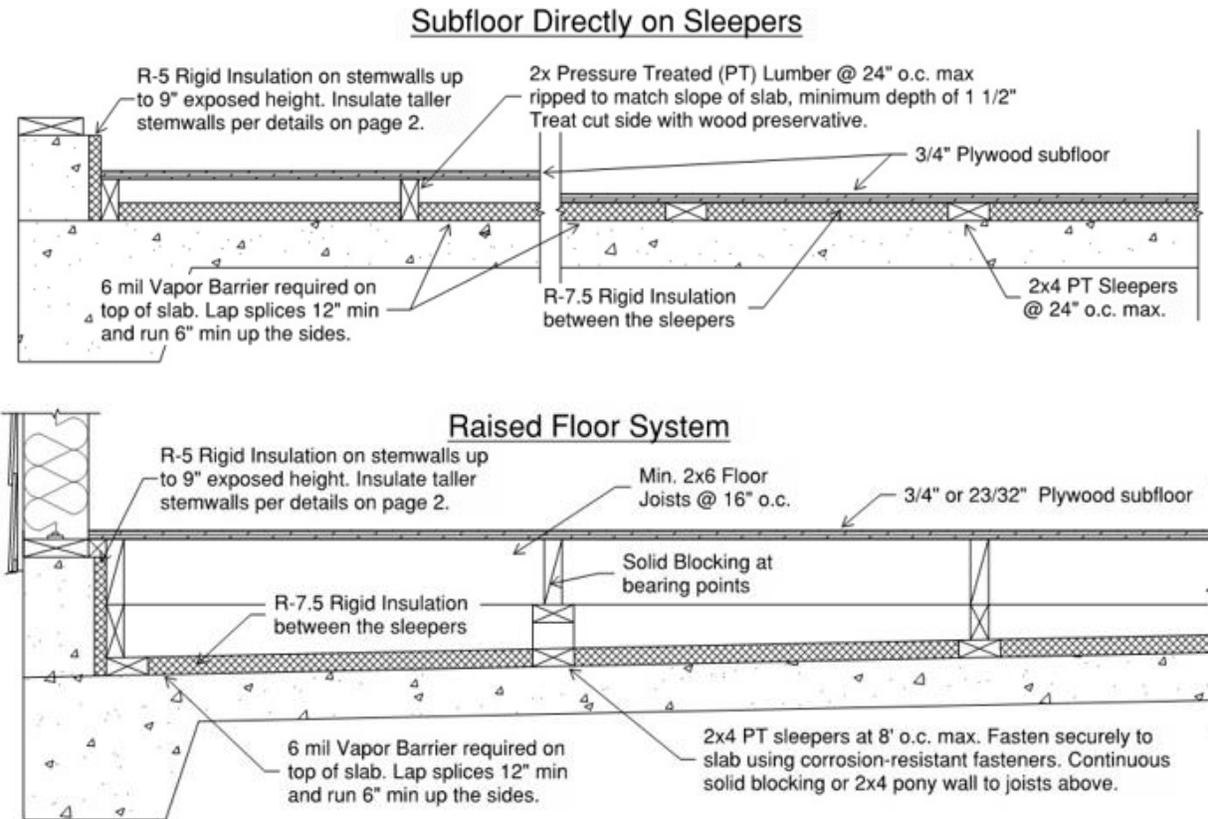


Figure 4: Approved Insulation Options Above the Slab

Additional Energy Credits

The WSEC requires additional energy credits when adding new conditioned space to a dwelling. These credits are based on the size of the added space (1.5 credits for adding less than 500 square feet and 3.0 credits for adding less than 1,500 square feet). See WSEC Section R406 for a complete list of options and their detailed requirements. Common options chosen are:

- Option 1.3 (0.5 credits) – Window U-factor 0.28, floor insulation R-38, slab-on-grade insulation R-10 under the entire slab (R-10 above an existing slab is also acceptable)
- Option 3.1 (1.0 credits) – Energy Star gas or propane furnace with a minimum AFUE of 95%
- Option 3.1 (1.5 credits) – Ductless mini-split heat pump system with a minimum HSPF of 10.0 providing heat to the largest zone of the housing unit.
- Option 5.3 (1.0 credits) – Energy Star rated gas or propane water heater with a minimum UEF of 0.91.