

2021 Energy Code Residential Additions/ Remodels

Type: All Construction

Subtype: RESIDENTIAL/ NON-RESIDENTIAL

Revised: 01.2025

City of Tukwila - Permit Center
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www.tukwilawa.gov/departments/permit-center/



2021 Energy Code Residential Additions/ Remodels

Here is a simplified Remodel/ Alteration Worksheet to be included with residential additions and alterations.

Code Requirements

R503.2 Change in space conditioning. Any non-conditioned or low-energy space that is altered to become conditioned space shall be required to be brought into full compliance with this (WSEC-R) code.

R503.1.1 Building envelope. Building envelope assemblies that are part of the alteration shall comply with Section R402.1.3 or R402.1.5, Sections R402.2.1 through R402.2.11, R402.3.1, R402.3.2, R402.3.5 and R402.4.2. **Exception:** The following alterations need not comply with the requirements for new construction provided the energy use of the building is not increased:

1. Storm windows installed over existing fenestration.
2. Existing ceiling, wall or floor cavities exposed during construction provided that these cavities are filled with insulation. 2x4 framed walls shall be insulated to a minimum of R-15 and 2x6 framed walls shall be insulated to a minimum of R-21.
3. Construction where the existing roof, wall or floor cavity is not exposed.
4. Roof recover.
5. Roofs without insulation in the cavity and where the sheathing or insulation is exposed during reroofing shall be insulated either above or below the sheathing.
6. Surface-applied window film installed on existing single pane fenestration assemblies to reduce solar heat gain provided the code does not require the glazing fenestration to be replaced.

R503.1.1.1 Replacement fenestration. (Glazing)

Where some or all of an existing fenestration unit is replaced with a new fenestration product, including sash and glazing, the replacement fenestration unit shall meet the applicable requirements for U-factor and SHGC in Table R402.1.3. Where more than one replacement fenestration unit is being installed, an area-weighted average of the U-factor and SHGC of all replacement fenestration shall be permitted to be used to demonstrate compliance.

R503.1.2 Heating and cooling systems.

New heating, cooling and duct systems that are part of the alteration shall comply with Section R403.

Exceptions: 1. Where ducts from an existing heating and cooling system are extended, duct systems with less than 40 linear feet in unconditioned spaces shall not be required to be tested in accordance with Section R403.2.2.

2. Existing duct systems constructed, insulated or sealed with asbestos.

R502.1.1.2 Heating and cooling systems.

New heating, cooling and duct systems that are part of the addition shall comply with Section R403.

Exception: The following need not comply with the testing requirements of Section R403.3.3:

1. Additions of less than 750 square feet.
2. Duct systems that are documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in WSU RS-33.
3. Ducts with less than 40 linear feet in unconditioned spaces.
4. Existing duct systems constructed, insulated or sealed with asbestos.

R503.1.4 Lighting.

New lighting systems that are part of the alteration shall comply with Section R404.1.

Exception: Alterations that replace less than 10 percent of the luminaires in a space, provided that such alterations do not increase the installed interior lighting power.

R503.1.3 Service hot water systems.

New service hot water systems that are part of the alteration shall comply with Section R403.5.

Applicable Regulations:

- [TMC Title 16 Buildings and Construction](#)

Resources:

- [Construction Portal & Fees](#)
- [Residential Energy Code Compliance 2021](#)
- [Washington State Energy Code Compliance Forms](#)

2021 Energy Code Residential Additions/ Remodels

2021 WSEC-R 2nd Edition Remodel / Alteration Worksheet

Will you be exposing the walls?

☐ Yes ☐ No

If yes,

☐ 2 X 4 wall studs require R-15 insulation

☐ 2 X 6 wall studs require R-21 insulation

☐ If siding is replaced C.I. equal to R-5 may need installed under the siding.

Will the roof/ceiling framing cavities or attic be exposed?

☐ Yes ☐ No

If yes,

Exposed roof or ceiling assemblies must be insulated -

☐ Vaulted ceilings, Insulate to the full depth of the framing member

☐ Flat ceilings, install R-60 insulation or what the attic space can accommodate based on the roof pitch

Will the will the floor framing cavities be exposed?

☐ Yes ☐ No

If yes,

☐ Exposed floor cavities must be insulated to R-30

Are the windows and/or doors being replaced?

☐ Yes ☐ No

If yes,

☐ New windows and doors (+frames) must have an area weighted average U-factor of ≤ 0.30

Will the heating or cooling system be replaced?

☐ Yes ☐ No

If yes,

☐ New equipment must meet current requirements and the ducts need to be tested

Will the hot water system be altered?

☐ Yes ☐ No

If yes,

☐ New water heating equipment must meet current code requirements

Are more than 10% of the light fixtures being changed?

☐ Yes ☐ No

If yes,

☐ 100% of all lamps must be high efficacy