

Alterations Worksheet - 2018 Washington State Energy Code

Project Information

Owners: Paramita Mukherjee & Sharat Shroff

Project Address: 8116 SE 73RD ST

Mercer Island, WA 98040

Contact Information

Suzanne Zahr, Inc.

(206) 354-1567

The WSEC requirements for alterations are located in Chapter 5 of the code text.

Alterations (remodels) do not need to obtain energy credits from Table R406.3

Additions must meet the requirements for new construction. This includes nonconditioned space being altered to become conditioned space.

Will the wall cavities be exposed?

Yes No

If yes: Exposed wall cavities must be insulated -
2 X 4 wall studs require **R-15** insulation
2 X 6 wall studs require **R-21** insulation

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

Yes No

If yes: Exposed roof/ceiling assemblies must be insulated -
Vaulted ceilings: Insulate to the full depth of the framing member while allowing for the minimum 1" ventilated space
Flat ceilings: Install R-49 insulation or what the attic space can accommodate based on the roof pitch

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

(includes both window or door and frames)

If yes: New windows and doors 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 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 50% of the light fixtures being changed?

Yes No

If yes: 90% of all lamps must be high efficacy (LED or CFL)

R503.1.1 Building envelope. Building envelope assemblies that are part of the alteration shall comply with Section R402.1.1 or R402.1.4, Sections R402.2.1 through R402.2.11, R402.3.1, R402.3.2, R402.4.3 and R402.4.4.

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. 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 R402.1.1. 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.

R503.1.3 Service hot water systems. New service hot water systems that are part of the alteration shall comply with Section R403.5.

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 50 percent of the luminaires in a space, provided that such alterations do not increase the installed interior lighting power.

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