

Commercial Roof Replacement FAQ's

Pitched Shingled Roof

On a shingled roof on a commercial building, a roofing affidavit will be required along with pictures of- the mid roof, drip edge, valley materials, nailing pattern on the shingles, roof jacks, flashing details (including side wall and head wall), any cricket flashing and venting of the roof.

Flat Roof

On a flat membrane roof, pictures will be required throughout the process of application. A roof warranty letter will be required from the manufacturer of membrane with the installer's signature.

- 1) **QUESTION** - If I remove the roof covering down to decking, do I have to bring up the insulation to current IECC requirements?

Answer - If the insulation is entirely above the roof deck and it has been removed, the new insulation would **not** be brought up to current IECC, But the R-value shall not be reduced.

NOTE- Each roofing case is different, the building official reserves the right to interpret the code.

According to IEBC

[BS] 705.2 Roof replacement.

Roof replacement shall include the removal of all existing layers of roof coverings down to the roof deck.

[BF] 1508.1 General. IBC

The use of above-deck thermal insulation shall be permitted provided that such insulation is covered with an approved roof covering and passes the tests of NFPA 276 or UL 1256 when tested as an assembly.

Exceptions:

1. Foam plastic roof insulation shall conform to the material and installation requirements of Chapter 26.
2. Where a concrete or composite metal and concrete roof deck is used and the above-deck thermal insulation is covered with an approved roof covering.

SECTION 708 IEBC ENERGY CONSERVATION

708.1 Minimum requirements.

Level 1 alterations to existing buildings or structures do not require the entire building or structure to comply with the energy requirements of the International Energy Conservation Code or International Residential Code. The alterations shall conform to the energy requirements of the International Energy Conservation Code or International Residential Code as they relate to new construction only.

2) QUESTION - If I remove the roof covering, roof decking and the liner insulation system, will I have to bring the insulation up to the current energy code?

Answer - If the roof deck and insulation is removed to be replaced and if the insulation is part of the thermal envelope, then the insulation would have to be brought up to current energy code.

According to IEBC and IECC

[BS] 705.1 General.

Materials and methods of application used for recovering or replacing an existing roof covering shall comply with the requirements of Chapter 15 of the International Building Code.

1512.2 Roof replacement. IBC

Roof replacement shall include the removal of all existing layers of roof assembly materials down to the roof deck.

Exception: Where the existing roof assembly includes an ice barrier membrane that is adhered to the roof deck, the existing ice barrier membrane shall be permitted to remain in place and covered with an additional layer of ice barrier membrane in accordance with Section 1507.

C501.4 New and replacement materials. IECC

Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs, provided that hazards to life, health or property are not created. Hazardous materials shall not be used where the code for new construction would not allow the use of these materials in buildings of similar occupancy, purpose and location.

C503.1 General. IECC

Alterations to any building or structure shall comply with the requirements of Section C503. Alterations shall be such that the existing building or structure is not less conforming to the provisions of this code than the existing building or structure was prior to the alteration. Alterations to an existing building, building system or portion thereof shall conform to the provisions of this code as those provisions relate to new construction without requiring the unaltered portions of the existing building or building system to comply with this code. Alterations shall not create an unsafe or hazardous condition or overload existing building systems.

Exception: The following alterations need not comply with the requirements for new construction, provided that the energy use of the building is not increased:

1. Storm windows installed over existing fenestration.
2. Surface-applied window film installed on existing single-pane fenestration assemblies reducing solar heat gain, provided that the code does not require the glazing or fenestration to be replaced.
3. Existing ceiling, wall or floor cavities exposed during construction, provided that these cavities are filled with insulation.
4. Construction where the existing roof, wall or floor cavity is not exposed.

5. Roof recover.

6. Air barriers shall not be required for roof recover and roof replacement where the alterations or renovations to the building do not include alterations, renovations or repairs to the remainder of the building envelope.

C503.2.1 Roof replacement. IECC

Roof replacements shall comply with Section C402.1.3, C402.1.4, C402.1.5 or C407 where the existing roof assembly is part of the building thermal envelope and contains insulation entirely above the roof deck. In no case shall the R-value of the roof insulation be reduced or the U-factor of the roof assembly be increased as part of the roof replacement.

C402.2.1 Roof assembly.

The minimum thermal resistance (R-value) of the insulating material installed either between the roof framing or continuously on the roof assembly shall be as specified in Table C402.1.3, based on construction materials used in the roof assembly.

C402.2.1.1 Tapered, above-deck insulation based on thickness.

Where used as a component of a roof/ceiling assembly R-value calculation, the sloped roof insulation R-value contribution to that calculation shall use the average thickness in inches (mm) along with the material R-value-per-inch (per-mm) solely for R-value compliance as prescribed in Section 402.1.3.

1. For one- and two-way, sloped roof insulation systems, the arithmetic average thickness shall be calculated in accordance with the following equation and as indicated in Commentary Figure C402.1.4.1.1(1). For more complex sloped configurations, the tapered layout shall be broken down into one- and two-way sloped regions.

$$\text{Arithmetic average thickness} = LP + [1/2 \times (HP - LP)]$$

2. For symmetrical square, four-way sloped roof insulation systems, the volumetric average thickness shall be calculated in accordance with one of the following equations and as indicated in Commentary Figure C402.2.1.1(1) or C402.2.1.1(2).

$$\text{Volumetric average thickness} = LP + [2/3 \times (HP - LP)]$$

$$\text{Volumetric average thickness} = \text{Volume of insulation} / \text{Roof surface area}$$

3. For all other sloped roof insulation systems, the volumetric average thickness shall be calculated in accordance with the following equation and as indicated in Commentary Figure 402.2.1.1(3)

C303.2.2 Multiple layers of continuous insulation board.

Where two or more layers of continuous insulation board are used in a construction assembly, the continuous insulation boards shall be installed in accordance with Section C303.2. Where the continuous insulation board manufacturer's instructions do not address installation of two or more layers, the edge joints between each layer of continuous insulation boards shall be staggered.