

Example 9-23**Question**

I am building a 450 ft² addition on my house. Do I have to meet cool roof requirements in the prescriptive package?

Answer

Yes. If using prescriptive compliance the roof must meet the cool roof requirements of Package A for the type of roof slope and density. To avoid the cool roof requirements, you may use the performance approach and tradeoff against other energy efficiency features of the addition alone or the existing building by using the Existing + Addition + Alterations approach.

9.6.7 Prescriptive HVAC System and Water Heating Alterations

The Standards apply to alterations of the heating and cooling system whether or not the alterations correspond to an addition to the building. This section describes the conditions where compliance is necessary and describes the corresponding prescriptive requirements.

If the heating and cooling system is left unchanged as part of an addition or alteration, then compliance with the requirements for altered HVAC systems is not necessary. Extension of an existing heating and cooling system, such as extension of a duct is not considered a change to the existing heating and cooling equipment therefore the existing heating and cooling system components are unchanged (except the ducts) and do not need to meet the Standards requirements. However, the extensions of the duct systems must meet mandatory requirements described in Section 9.4.2; and prescriptive requirements described below.

To meet the prescriptive alteration requirement for water heating, the water heating system shall be one of the following:

1. A natural gas storage or propane, non-recirculating water heater with an Energy Factor (EF) equal to or greater than the federal minimum..
2. If no natural gas is connected to the building, electric storage tank water heater less than 60 gallons, or electric instantaneous with an EF equal to or greater than the federal minimum standards..
3. A water-heating system determined by the executive director to use no more TDV energy than item 1 above, or item 2 above if no natural gas is connected to the building..

NOTE: The performance compliance approach can be used to demonstrate that the proposed water heating system uses no more TDV energy than the system defined in item 1 above.

Table 9-7.1 lists replacement heat pump water heating systems by climate zones that have equal or lower TDV energy than a standard design system with natural gas, LPG, or electric fuel source. These systems have been pre-calculated to comply with the prescriptive water heating alteration requirements when serving a single dwelling unit, with or without natural gas connection. These are only a few of many possible combinations that will comply using the performance compliance approach.

Table 9-7.1 – Precalculated Replacement Heat Pump Water Heating Systems for Single Dwelling Units

CZ	Energy Factor greater than or equal to
1	2.75
2	2.75
3	2.75
4	2.8
5	2.75
6	2.33
7	2.5
8	2.33
9	2.33
10	2.33
11	2.5
12	2.8
13	2.5
14	2.5
15	2.33
16	EF ≥ 3, plus a solar water heating system with solar saving fraction ≥ 0.4