

GG162-14

408.3

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Revise as follows:

408.3 Roof surfaces. Not less than 75 percent of the roof surfaces of buildings and covered parking located in climate zones 1 through 3, as established in the *International Energy Conservation Code*, shall be a roof complying with Section 408.3.1; shall be covered with a vegetative roof complying with Section 408.3.2; or a combination of these requirements. The provisions of this section shall apply to roofs of structures providing shade to parking in accordance with Section 408.2.2 where located in climate zones 1 through 6.

Exception: Portions of roof surfaces occupied by the following shall be permitted to be deducted from the roof surface area required to comply with this section:

1. Solar thermal collectors.
2. Solar photovoltaic systems.
3. Roof penetrations and associated equipment.
4. Portions of the roof used to capture heat for building energy technologies.
5. Rooftop decks and rooftop walkways.
6. Ballasted roofs with a minimum stone ballast of 17 lb/ft² or 23 lb/ft² for pavers.

Reason: The added exception is based on an identical exception in ASHRAE 90.1. This exception is based on comparative study of the performance of reflective and ballasted roofs conducted by DOE/ORNL (see bibliography). While ballasted roofs can provide equivalent energy performance, they also carry durability benefits, provide modest solar reflectance and high emittance, tend to shift peak load demand, are often used in combination with vegetative roofs, are used to create roof-top outdoor space, and can provide a non-negligible contribution to storm water retention and peak flow reduction for frequent small rain events (see bibliography).

Bibliography:

Desjarlais, A.O., Petrie, T.W., and Atchley, J.A. (2007). Modeling the Thermal Performance of Ballasted Roof Systems, Buildings X, ASHRAE, Atlanta, GA

Hoff, J.L. (2008). New Heat Mitigation and Water Retention Concepts to Expand Green Roofing Demand. Seventh Annual Green Rooftops for Sustainable Communities Conference, Atlanta, GA

Cost Impact: Will not increase the cost of construction.

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