

GG165-14

408.3

Proponent: Thomas Slabe, U.S. Environmental Protection Agency, representing USEPA, and Jennifer Boussetot, Colorado State University

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 5, 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.

Reason:

1. Heat-related morbidity and mortality is more prevalent during summer in the higher latitudes.
2. Mortality during heat waves is higher in the Northeast and Midwest than in the south. (Anderson and Bell 2011)
3. There are many cities that are leading the green roof industry that are in CZs 4 and 5.
4. The sun during summer months goes directly over CZs 4 and 5.
5. Cities in CZs 4 and 5 produce a lot of waste heat, perhaps as much waste heat from burning carbon as the amount of energy in sunlight per unit area.
6. The only way to mitigate heat waves is with urban forestry and green roofs.
7. The only way to expand vegetative coverage in dense urban areas in large northern cities is to utilize green roofs.
8. Because of urban heat island effects, there is a corresponding increase in ground-level ozone. Green roofs and urban forestry are the most readily available mitigation practices for reducing ground-level ozone, aside from eliminating the combustion of carbon fuels and refinement of oil products.
9. CZs 4 and five include cities that are at the leading edge in living architecture in N. America. Such cities include: Seattle, Sacramento, Salt Lake City, Denver, Cincinnati, Chicago, Washington, New York City, and Toronto. These are major urban centers that are subjected to severe heat waves at times. Heat waves are forecasted to become worse as climate change and global warming advances.

Cost Impact: Will increase the cost of construction.

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