

## REFRIGERATION SYSTEMS

New in the 2015 IECC is the regulation of refrigeration equipment energy use. Tables C403.2.14(1) and (2) are organized by equipment type, operating mode and rating temperature and specify the maximum power use in kWh/day for the equipment. ASHRAE/IES Standard 90.1, which is adopted by reference as an alternative to the IECC Commercial Provisions, also addresses the energy efficiency opportunities available from commercial refrigeration and freezing equipment. [Ref. C403.2.14] Walk-in coolers (Figure 8-11), walk-in freezers, refrigerated warehouse coolers and refrigerated warehouse freezers are regulated by new sections. Requirements include those related to doors; minimum floor, wall and ceiling insulation; anti-sweat heaters and controls; and lighting efficiency. [Ref. C403.2.15]

Doors that do not exceed 45 inches wide or 7 feet high require automatic door closers that fully close doors to within 1 inch of full closure. Furthermore, all doorways are required to have strip doors, curtains, spring-hinged doors or another method of minimizing infiltration when doors are open. An example of a thermal consideration is the requirement for freezer floor insulation of R-28. Site-assembled walk-in coolers and freezers have similar requirements in the following subsection. [Ref. C403.2.16]

Site-assembled or site-constructed refrigerated display cases (Figure 8-12) require time switch or motion sensor controls for lighting. Time switch controls must turn off lights during nonbusiness hours, whereas motion sensor controls on each display case section must reduce lighting power by at least 50 percent within 3 minutes after the area within the sensor range is vacated. Low-temperature display cases must also incorporate temperature-based defrost termination controls with a time-limit default, and anti-sweat heater controls must be programmed to operate as a function of relative humidity. [Ref. C403.2.17]



**FIGURE 8-11** Walk-in cooler (Photo courtesy of A S Klein Engineering, PLLC)



**FIGURE 8-12** Refrigerated display case

continued

## Code Essentials

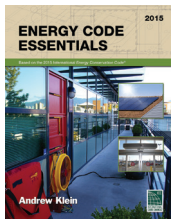
### Definitions added to the 2015 IECC for Coolers and Freezers

**REFRIGERATED WAREHOUSE COOLER:** An enclosed storage space capable of being refrigerated to temperatures above 32°F that can be walked into and has a total chilled storage area of not less than 3,000 square feet.

**REFRIGERATED WAREHOUSE FREEZER:** An enclosed storage space capable of being refrigerated to temperatures at or below 32°F that can be walked into and has a total chilled storage area of not less than 3,000 square feet.

**WALK-IN COOLER:** An enclosed storage space capable of being refrigerated to temperatures above 32°F that can be walked into and has a total chilled storage area of less than 3,000 square feet.

**WALK-IN FREEZER:** An enclosed storage space capable of being refrigerated to temperatures at or below 32°F that can be walked into and has a total chilled storage area of less than 3,000 square feet. ●



This excerpt is taken from ICC's *Energy Code Essentials: Based on the 2015 International Energy Conservation Code*®

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