Walk-in Refrigerators and Freezers: An Overview

By Lisa White, Contributing Editor -- Foodservice Equipment & Supplies, 12/10/2009 6:32:00 AM

When purchasing a walk-in refrigerator and freezer, foodservice operators can have these items pre-engineered in standard or custom sizes, or built into their kitchens. Custom designed walk-ins can be configured in almost any size or shape. Quick ship walk-ins are pre-configured sizes in single and combination models. Quick ship models come with either a remote refrigeration system or a packaged system containing the condensing unit and evaporator coil in one housing. Pre-assembled walk-ins ship from the factory and are ready to install.

Walk-in coolers and freezers vary in size from small step-in units to large multi-compartment cooler/freezer combination units. Sizes range from 8'x 10'x 8' up to 150'x 100' x 18'. Cooler units are typically larger than freezers. When determining capacity, it is important to note that 1-cu.-ft. of open storage area accommodates approximately 28 lbs. of solid food.

Average walk-in temperatures range from between 34°F 38°F degrees F for coolers, and -10°F for freezers.
Foamed in place insulation is most common for these units, although some use slab urethane. One of the newer developments in this segment is the next generation of non-ozone depleting blowing agents used in Polyurethane foam. Walls are typically 3½" thick for coolers and 4" to 5" thick for freezers.

A recent change in the walk-in industry is the passage of the Energy Independence and Security Act (EISA) of 2007. Effective January 1, 2009, the code requires that freezers have a minimum R value of 32 when tested per ASTM-C518 standards at an operating temperature of 20 degrees F. Coolers must have a minimum R value of 25 when tested at 55 degrees F. This limits the use of less expensive, less efficient insulating materials like polystyrene.

Walk-in panels are typically 1', 2' or 4' wide, and 7½', 8½' or 9½' high. Interior and exterior panels are available in a wide variety of finishes. One of the most popular finishes is stucco Galvalume because its embossed pattern helps hide scratches, dents and blemishes that are inevitable over time. Other options include stainless steel, galvanized steel and aluminum. Non-traditional architectural finishes, such as aggregate or brick veneer, also are available. Finishes can be either painted or unpainted and smooth or embossed. Some operators prefer a white interior finish, which makes the walk-in brighter and its contents more visible.

Sliding, bi-parting and single doors are available in a wide variety of configurations.

Electric and manual versions range in size from 26" to 60". Door windows are a popular option for operators who need visibility into the walk-in. Rigid, reinforced doorframes and heavy-duty hinges provide extra durability.

Stainless steel, aluminum or diamond tread floors can be reinforced with steel for use with heavy equipment or pallets.

When condensing units are installed on top of walk-ins, floor drains are not needed. For operations with lower ceilings, remote condensing units are located outside. Walk-in coolers use a ½-hp compressor, while freezers include a 1-hp compressor. Voltage varies from 115 for smaller units up to 230 for large walk-ins.

A majority of walk-ins utilize air-cooled compressors, which are less durable and more economically priced than water-cooled systems.