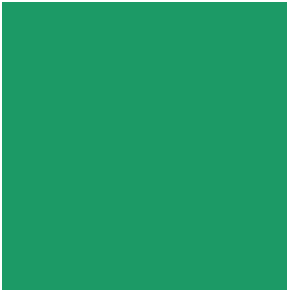




## Walk-In Refrigeration Buying Guide



 **INNOVATIVE  
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*Thank you for downloading the Walk-in Refrigeration Buying Guide. At **Innovative Foodservice Group**, we're committed to informing and educating our customers so that they will feel confident about their purchases*

*Successful restaurants rely on fresh ingredients and fresh ingredients rely on quality refrigeration. In this guide, you'll find information that details the differences between the types of commercial walk-in coolers and freezers available today and what you should look for when determining which product is best suited for your business.*

### Is A Walk-in Right For You?

Walk-in refrigeration units differentiate themselves from the reach-in models common to most homes and offices by their unique ability to store ingredients in bulk. Walk-in coolers and walk-in freezers are, above all else, large. Installing one of these units is like assembling a new closet inside your kitchen. Not everyone needs that amount of storage. Ask yourself: **Will you be serving more than 250 meals per day? Do your refrigerated storage needs exceed 75 cubic feet?** If you answered yes to either question, a walk-in cooler is both logistically and financially the best solution for your business.

Before purchasing a walk-in cooler or freezer, there are several considerations to mull over. The size of the unit, its intended location, its makeup, any additional features, and the style of its insulation affect the overall cost and performance of your refrigerator. Below are several guidelines to follow when determining what features your unit needs and what features it can do without.



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### Size

All walk-ins are spacious, but some walk-ins are more spacious than others. The floorspace of these units can vary from 20 ft<sup>2</sup> all the way up to 140 ft<sup>2</sup>, a seven-fold difference. Before purchasing, you must first determine what size unit is most appropriate for your business. While it is better to have an excess of space than not enough, keep in mind that refrigeration accounts for 20% of total energy consumption in the average commercial kitchen. Don't overdo it. Professional restaurant designers have provided this general formula: for every meal you serve, your restaurant will require 1.5 cubic feet of refrigerated storage. This formula has already been adjusted for the space taken up by shelves, aisles, and ingredient spill-over.

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### Location

The second decision to make concerns where you plan on planting your walk-in. Two types of units exist — **indoor units** and **outdoor units** — each available in your select size. When choosing one type of unit over the other, seamless integration into your kitchen should be your top priority. Other considerations include electric costs, weatherproofing, bearing capacity, and of course, where it will fit.

#### INDOOR UNITS

The more convenient of the two styles, an indoor walk-in unit is installed directly inside your kitchen under its roof. Since these units can be accessed from within the cooking space itself, they're a much more practical option, and as long as you place them in the coolest part of your kitchen, they're more energy efficient as well. There's no need to lay foundation for these units. Weatherproofing will never be an issue.

**But:** the refrigerator must fit. The compressor, the condenser and the casing of walk-in refrigeration systems are frequently mounted to the ceiling or to the

exterior wall. When measuring the unit's prospective area, keep this fact in mind. The condenser of the refrigeration system will be one to two feet long and will require an additional six inches of free air between it and your building's ceiling or wall. If you have a cramped kitchen, consider a ceiling mounted unit. If you have low ceilings, consider a wall-mounted unit. If you have a cramped kitchen with low ceilings, consider an outdoor unit.

### OUTDOOR UNITS

If your kitchen absolutely cannot contain an indoor model or if your kitchen layout facilitates easy access to the outdoors, this is the unit for you. The biggest problem facing an outdoor refrigeration unit revolves around its foundation. Refrigerators are heavy. If the surface outside your kitchen doesn't have a sufficient bearing capacity, you must reinforce the foundation before installing the unit. Usually, if the surface is concrete, its bearing capacity won't be a problem. It will always be necessary to contact a local licensed engineer or architect to survey the foundation of your property and determine whether reinforcement is required.

In addition to a reinforced foundation, several accessories are required to maintain a functioning outdoor unit. A **drip cap**, one such accessory, functions like an awning and hangs above the door of the refrigerator to divert rain, snow and leaves from blowing inside. A **rain roof** protects the rest of the unit exterior from harsh weather. A **winter kit** ensures that during colder months, your walk-in cooler is merely cooling your food and not freezing it. You should also weigh the benefits of **security fencing**.

### Skin

Every walk-in refrigerator currently on the market houses their insulation inside a metal frame. While not directly related to performance, the **skin type** does affect the overall longevity and appearance of your refrigerator. A high-quality skin will resist dents and damage whereas a low-quality skin will corrode over time. Below are the major types of walk-in skins.

### STAINLESS STEEL

The counterpoint to Galvanized Steel and Galvalume is Stainless Steel. If absolute quality is more valued than price, spring for a stainless-steel unit. Not only do these units look good, but they are also structurally the strongest and least likely to corrode.

### ALUMINUM

Aluminum, as a commodity, has always been sensitive to fluctuations in price. Due to these fluctuations, aluminum is quick to go in or out of style in the refrigeration manufacturing industry. As a skin, however, aluminum

is resilient. Unlike steel, aluminum doesn't oxidize freely. Units made from this skin will not corrode. They will, unfortunately, dent. Imagine the fragility of a soda can. After a few years of use, these units are liable to show damage.

### GALVALUME

Galvalume is a trademarked metal patented by Bethlehem Steel in 1972. Made from almost equal parts zinc and aluminum, this metal exhibits the most useful properties of each. Galvalume is both strong and corrosion resistant. It's also cheap. If price is your primary concern, you wouldn't be wrong to select a Galvalume-skinned unit.

### GALVANIZED STEEL

You also wouldn't be wrong to select a galvanized steel unit. This inexpensive type of skin is just as strong as Galvalume and, though more prone to rust, its shell is usually coated in a stucco embossing agent which prevents corrosion.

### Insulation

A refrigerator's insulation determines its longevity. Insulation protects the contents of your refrigerator from the ambient heat that floats through your kitchen. When evaluating the specifications of prospective units, be on the look-out for a unit's **R-value**. R-value is a unique quantity that expresses a material's resistance to heat-flow. **A higher R-value denotes better insulation.** R-value is affected by the age of a material, its dryness, its temperature and its chemical composition. In the refrigeration industry today, there are two primary types of insulating material, **Polyurethane** and **Extruded Polystyrene**, a pair of substances that share similar initial R-values but exhibit very different properties.

### POLYURETHANE

Polyurethane, while an excellent initial insulator, is quick to degrade and loses its resistance to heat. Within 15 years, the polyurethane in your refrigerator will retain only a fifth of its initial R-value. Its susceptibility to moisture damage will also reduce the lifespan of your product.

### EXTRUDED POLYSTYRENE

This type of insulation, on the other hand, lasts a very long time. During the same time span, 15 years, extruded Polystyrene will have lost only a half of its initial R-value. This insulation features a dynamic moisture-resistance and has four times the structural strength of polyurethane. It is recommended that, given a choice, you go with extruded polystyrene.

### Refrigeration Systems

The heart of the walk-in cooler, the mechanical guts that bring the cold, your refrigeration system will either provide your restaurant with years of uninterrupted output or will be a constantly malfunctioning pain in your side. If you remember to periodically clean around the system and vacuum dust from its coils, if you're lucky, it won't break down. Let's hope so. Refrigeration systems are complicated. When ordering your walk-in unit, be aware that there are many types of refrigeration systems available—Remote, Roll Up, Ceiling-mount, Wall-mount, Saddle-mount, Penthouse, Pre-assembled—that are all functionally identical. The only difference is where they're kept. A remote system is installed outside and everything else is installed inside. A remote system pumps its heat into the atmosphere and everything else pumps its air into your kitchen. No matter which system you choose, a licensed refrigeration technician will come by to install it for you.

### Other Things to Consider

This guide spotlights size, location, skin, insulation, and refrigeration system for a reason—these are the major things to consider before purchasing a walk-in unit. To paint a more complete picture, we have included some other, smaller details that you should understand before wading into the world of commercial refrigeration.

#### FLOOR

Not all walk-in coolers and freezers include a floor. If you choose a floorless cooler, you can only install it on top of a concrete floor that is in direct contact with the ground. With a floorless freezer you must insulate the concrete floor and include a thermal break beneath the wall panels of the refrigerator. Without this additional insulation, the cool air inside your unit will seep into the ground and

you'll never be able to achieve the correct temperature inside the unit. This negligence will cost you hundreds of dollars in electricity.

#### CERTIFICATIONS

“NSF” and “UL” are two initialisms that pop up frequently when comparing refrigeration models. To you, the customer, these letters should carry a lot of weight. NSF stands for the National Sanitation Foundation, the ultimate listing agency in foodservice equipment and design. In many states and counties, if it doesn't have the NSF seal, it isn't sanctioned for public use. NSF denotes quality. UL stands for Underwriter Laboratories. This seal certifies specific parts of the refrigeration unit as safe to use. When selecting a unit, the compressor, the condenser, and the insulation panels should all be UL listed.

#### SHELVES

Something sometimes bundled with your refrigeration unit — shelves. If you are storing mostly smaller items, you're going to need shelves. There are two types. **Wire rack** style shelves allow cold air to waft around the food, offering a more even temperature but with the small possibility of freezer-burn. With **solid shelving**, you get a less even cool, but their solid frame prevents spills from contaminating the food on lower shelves.

#### DOORS

The door of your unit is standardized across different units. The door will always open outward. Usually, the door will be attached to a device that closes it automatically. These conserve power. If the unit doesn't include one, consider purchasing a strip curtain to prevent further temperature loss.

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**Still need help?** - Innovative Foodservice Group has expert staff, fully trained in walk-in refrigeration, that can find the right product to fit your needs.

*Anything from commercial restaurants to home use -give us a call any time  
Monday through Friday, 8 am to 5 pm.*



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