

Foodservice Guide to

Frost Tops

As we all know, certain foods and beverages like fish, meat and dairy stand no chance at room temperature for too long. These potentially hazardous foods (as they're so lovingly called) must be stored or held at temperatures well below the "danger zone" to slow bacterial growth and ensure they're safe for consumption.

But even with products that don't necessarily require refrigeration, many consumers prefer them cold. In fact, there's actually some science to it. Oral cooling satiates thirst, and in turn, stimulates the brain's pleasure centers. Perception also comes into play. In one study, participants reported that "cold," "cool," or "icy" temperatures are the most important characteristics required for a food or beverage to be considered "refreshing."[1] And we get it; there's nothing better than a cold, crisp food or beverage on a hot summer day.

So, how do foodservice operators keep both *temperature-sensitive* and *pleasure-sensitive* menu items safe, cold and delicious? Furthermore, how do they achieve this when their products are on display and directly exposed to ambient conditions? There's no single answer or equipment type, but today we'll dive deep into one cold holding and serving solution that has foodservice pros everywhere talking — Frost Tops.



Table of contents

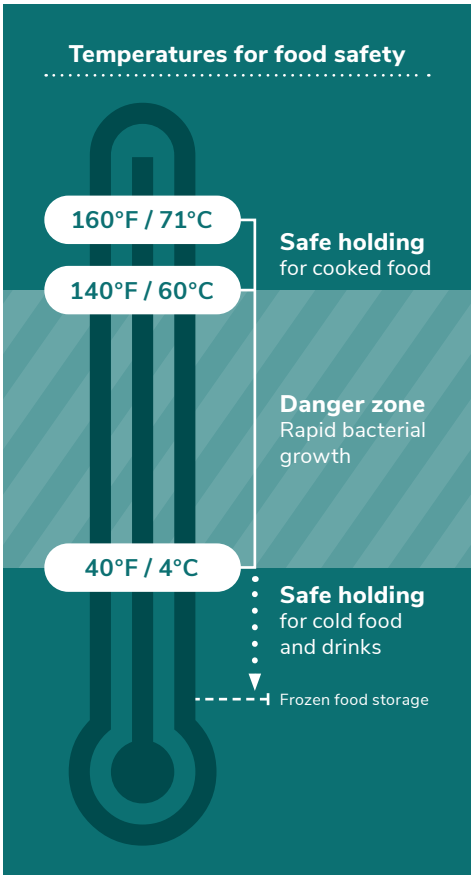
What are frost tops?	2
How frost tops work	3
Is a frost top the right choice?	4
How to select a frost top	5

1. Appetite, "Cold pleasure. Why we like ice drinks, ice-lollies and ice cream," 2013, https://doi.org/10.1016/j.appet.2013.09.011

What are frost tops?

Frost tops are a foodservice equipment type designed for short-term holding and serving of pre-chilled, contained foods and beverages. Unlike a refrigerator, they do not bring the temperature of menu items down to a certain level. Rather, they slow the warming process to allow operators to keep products cold for longer. Because of this, it's important that operators pre-chill all food and beverages (especially potentially hazardous foods) well below the danger zone before placing them on a frost top. All menu items should be contained in either a to-go package or serving container, which must also be pre-chilled.

Frost tops serve many purposes. They hold food and beverages cold for longer, but they also provide operators with an effective, access-friendly way to put their menu items on display. Under the required ambient conditions, frost tops (as their name implies) get frosty. The frost that forms on their surfaces keeps food cold for longer. Plus, the icy look of the frost helps with merchandising by elevating the cold, refreshing qualities of whatever menu item is on display.



Frost top holding 101
Frost tops are ideal for holding non-potentially hazardous products. Operators should only use frost tops to hold highly perishable menu items if the product and its container are pre-chilled to a temperature well below the danger zone. Even then, operators must constantly monitor products to ensure temperatures remain safe throughout the duration of service.

What aren't frost tops?

Cold shelves


Hatco model CSSBFP-48-S

While both frost tops and cold shelves are used for short-term holding and serving of pre-chilled, contained foods — they are not one and the same. Cold shelves (if metal) can technically frost under the right ambient conditions. However, they are not designed to frost as easily as frost tops. Also, cold shelves typically have flat (not raised or recessed) tops and tend to offer more customization in the form of non-metal tops or undermount options.

For more on their similarities and differences, visit **hatcocorp.com/frost-top-vs-cold-shelf** today.

Ice cream plates

Frost tops do not get cold enough to make ice cream. An ice cream plate typically has a surface temperature of around -22° F (-30° C), while frost tops are usually set around 25° F (-4° C). Keep this in mind, as some websites confuse buyers by grouping these two products together.

Refrigerated storage

Enclosed refrigerators cool and hold products at a stable temperature. Frost tops, on the other hand, have an open-air design that exposes the product being held to ambient conditions. As a result, frost tops slow (rather than prevent) the warming process.

How frost tops work

A well-made frost top contains very tightly wound refrigerant lines below its surface. This, paired with a stainless steel metal top, allows the surface of a frost top to reach very cold temperatures. Assuming required ambient conditions are met, a frost top will get colder than the air in contact with it. When this happens, air cools to its dew point, moisture forms in the air, and moisture condenses on the frost top's surface. The result is frost!

A frost-promoting design + environment

Stainless steel surface

Metal is a strong thermal conductor that naturally slows warming.

Coil configuration

Refrigeration coils are tightly wound to create a colder, frost-promoting environment than attainable with cold shelves or other cold holding equipment.

Ambient temperatures

Ambient conditions play an important role in frost formation and must be between 65-86° F (18-30° C).

Frost point

Unit temperatures are set below frost point, which is the minimum temperature required for frost to form. Typical factory preset temperatures are 25° F (-4° C), but can be adjusted to accommodate ambient conditions.

Proper installation

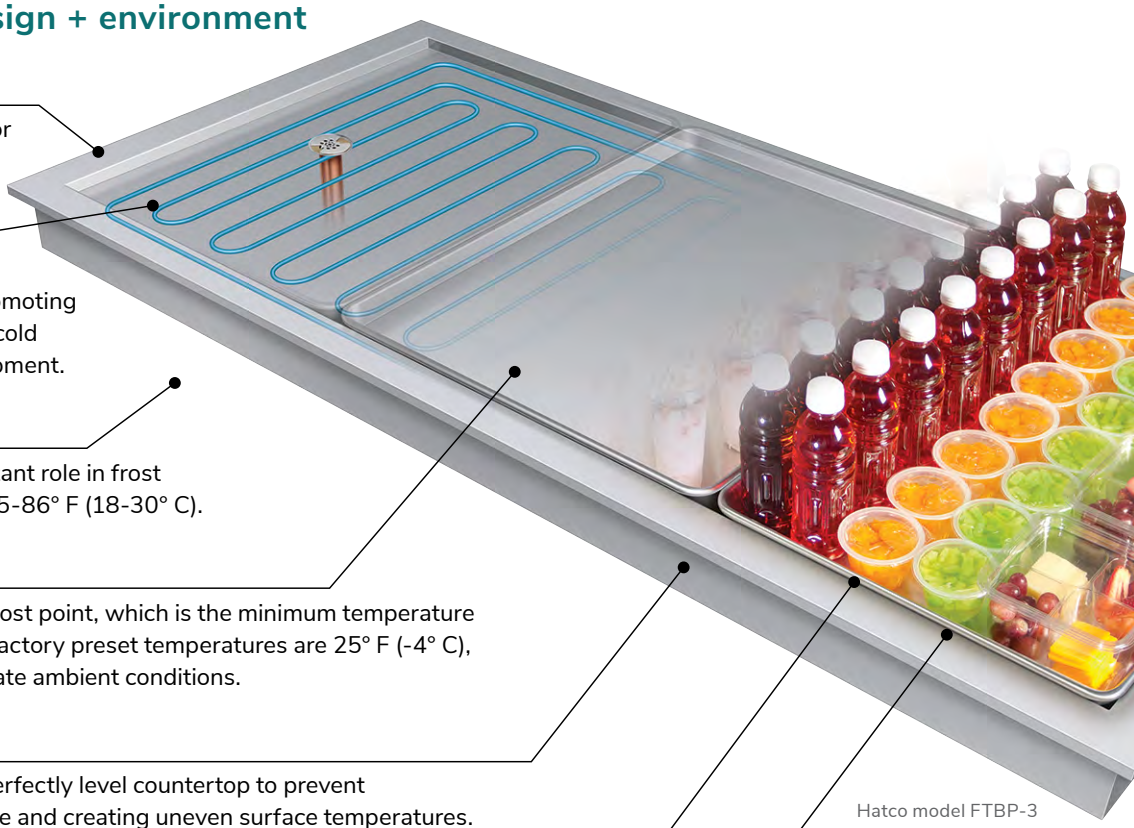
Frost tops must be installed in a perfectly level countertop to prevent cool air from "sliding" off its surface and creating uneven surface temperatures. Proper ventilation is also required for the condenser to function well. (Always consult the manufacturer's manual for installation requirements.)

Proper containers

Small, flat, shallow containers maximize the surface area of the products in contact with the unit's surface. This slows the cooling process by reducing product exposure to the warm air above.

Recessed top

A recessed top captures more cold to keep product chilled longer and prevent spills from spreading onto counters and customers. This is a Hatco advantage, as most options on the market have raised tops.



Hatco model FTBP-3

Is frost guaranteed with a frost top? Frost tops are designed to create frost. However, if ambient temperatures are too cold or too hot, frost cannot form. It's just science!



The windshield effect

If you've ever woken up on a cold morning to find frost on your car's windshield, you're witnessing the same phenomenon at play with frost tops. A windshield is made of materials that release heat more quickly than the air around them. Just like with a frost top, this causes the temperature of the windshield to drop below the frost point (32° F / 0° C) faster than the air around it and creates frost.

Is a frost top the right choice?

Frost tops work well for all types of establishments — whether a cafeteria, restaurant, c-store, supermarket, deli, hotel, or beyond. They're incredibly versatile, making them a popular choice for buffets, drink stations, breakfast bars, grab-n-go areas, salad bars, and even counters. With that said, there's a lot of equipment types on the market. Operators must evaluate their goals, preferences and realities to ensure that a frost top is the best equipment choice for them.

Factors to evaluate

Access

Frost tops don't have doors, walls or tall sides, so customers and operators can quickly and easily grab food and beverages without interference. This design makes frost tops ideal for operations that need to move customers through buffets or grab-n-go stations as quickly as possible. Some frost tops even come in "slim" designs to allow for narrower groupings of products and more convenient, reachable access.

Merchandising

While there's technically no rule saying frost tops can't be used for back-of-the-house holding, out front is really where they shine. With a refreshing layer of frost and complete visibility of products, frost tops are an effective and attractive way to put menu items on display and encourage impulse sales. Revenue is (of course) a priority for all operations, but establishments must evaluate if a merchandising format is part of their sales-driving strategy.

Menu

While frost tops accommodate short-term holding of both potentially hazardous and non-potentially hazardous items, food or beverages that perish easily (like meat or milk) must be monitored at least every 10-20 minutes to ensure temperatures remain below the danger zone. In turn, operators with a temperature-sensitive menu need the bandwidth and staff to support this level of oversight — or demand must be high enough for product to turn over quickly enough.

Location

Operators need a suitable countertop location to accommodate a frost top. Countertops should be conveniently located, level, at an appropriate serving height, and allow at least 6 inches (152 millimeters) between the unit's sides and combustibles. Frost tops also weigh around 150-160 pounds (68-73 kilograms), so countertops must be strong enough (or reinforced) to support them. Lastly, frost tops must be installed away from hot equipment to avoid unnecessary temperature battles.

Aesthetic

When it comes to frost tops, buyers don't have a choice of fancy tops, materials, finishes or colors. This isn't because frost top manufacturers aren't keen on customization; it's simply because metal surfaces create a better frost-promoting environment than non-metal. Frost tops are sleek and modern looking (and who doesn't love the frost?), but operators must evaluate if the look and feel of a frost top fits with the decor and ambiance of their establishment.

Well — there are other options too.

If operators want to hold and serve potentially hazardous menu items, but are worried about the oversight required with a frost top — a cold or ice well might be the answer.
Great for self- or operator-serve applications, these frost top alternatives have high sides that facilitate greater cold retention and allow for less monitoring of perishable menu items. Visit **hatcocorp.com/cold-wells** for more information.


Hatco model CWBP-S4

How to select a frost top

As discussed, the look of a frost top is pretty straightforward. As a result, selecting a frost top typically comes down to three main factors: capacity, quality and (to a slightly lesser degree) condenser location.

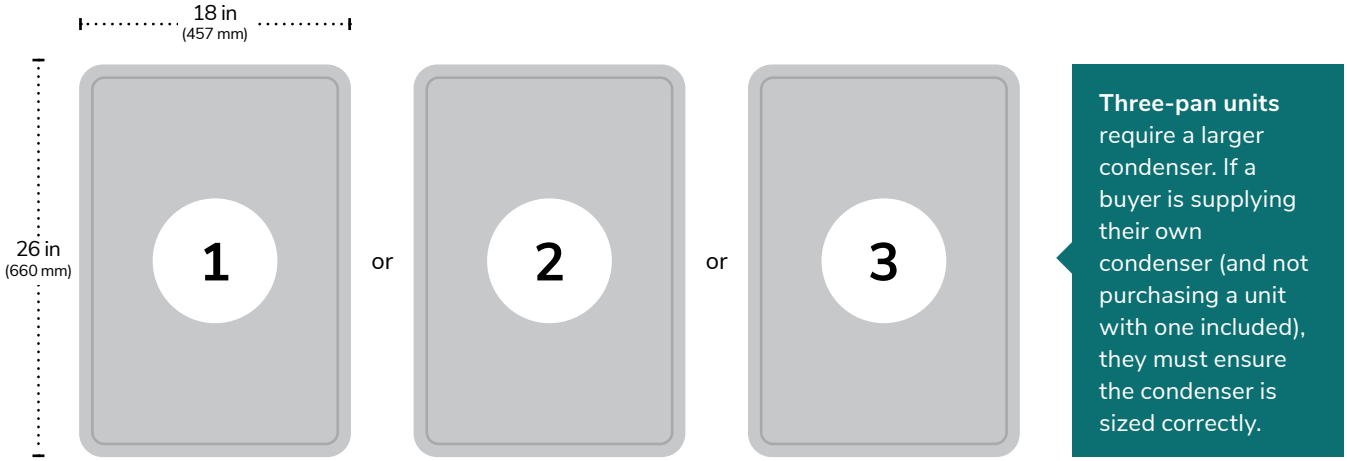
Capacity

Factoring in holding container size, operators must determine how much product they need to keep cold at one time. If holding potentially hazardous menu items, a smaller frost top might be prefered. This ensures that operators don't have to turnover product as quickly or risk leaving large empty spaces on the frost top's surface (a hot spot for finger art). With that said, operators also don't want to select a model that's too small. Without enough space on the frost top, there won't be enough product to meet demand or operators may end up having to purchase another frost top shortly down the road. Lastly, when evaluating capacity, operators must remember to factor in how much countertop space they actually have available.

Estimating tip: Use the "sheet pan test"

Most frost tops on the market can accommodate one, two or three standard, full-size sheet pans worth of product (or the equivalent of two, four or six half-size sheet pans). When estimating capacity needs, operators should think in terms of sheet pans. In other words, how many sheets worth of product are needed to support demand during a busy service? If more than three full-size pans, how many frost tops — and what size models — are needed?

How many sheet pans worth of product are needed?



Three-pan units require a larger condenser. If a buyer is supplying their own condenser (and not purchasing a unit with one included), they must ensure the condenser is sized correctly.

Slim frost tops from Hatco accommodate the same size pans but with a horizontal pan configuration.



Quality

All frost tops are not created equal. When evaluating options from different manufacturers, it's important to look for a high-quality unit. There are many factors to consider, but there are few major indicators that'll let operators know they are on the right track.

Frost top characteristics to look for:

Tight refrigerant line configuration: Tightly wound refrigeration lines result in even holding of product (read: no warm spots) and a colder surface temperature that's needed for frost to form.

High-end, name-brand condenser: A frost top is only as good as its condenser. If the condenser fails or is difficult to service because it's an unfamiliar brand, operators can experience equipment performance issues and extensive downtime.

Long, braided, flexible refrigerant lines: The refrigerant lines used in lower-quality frost tops are short and made of rigid copper. This combination makes it difficult for technicians to rotate or access the unit's condenser for servicing. Copper also damages easily, so look for units with lines that are braided and flexible.

EPA approved: Frost top refrigeration should meet current Environmental Protection Agency (EPA) guidelines. This not only protects Mother Earth, but ensures operators don't run into servicing issues due to discontinued parts. If an equipment dealer pulls out a dusty frost top from the backroom, always confirm it's still EPA compliant!



Hatco model FTBP-2

Condenser location

Capacity and quality are typically the most considered decision factors that come into play when selecting a frost top. With that said, buyers must also decide if they want a frost top with a remote or a self-contained condenser.

Remote vs. self-contained: What's the difference?

A frost top with a remote-mounted condensing unit allows operators to install the condensing unit in a separate location from the frost top itself. On the flip side, a unit with a self-contained condenser means that operators can install the entire frost top (and all its components) in the same countertop location. Both options are attractive — but generally the decision comes down to preference and ventilation capabilities.

Both remote and self-contained condensers require proper ventilation. If opting for a frost top with a self-contained condenser, operators need to add louvered or grill-style vents to the cabinetry that'll house the frost top components. Operators must consult the manufacturer's product manual for exact requirements, but typically these vents must go in front of and behind the condensing unit, and cover a minimum area of 144 square feet (961 square centimeters). It's also worth noting that some self-contained models include condensers that are mounted to the center of the unit, but rotate 90 or 180 degrees for greater flexibility with vent location.

Operators that don't like the look of cabinet vents or don't want their condenser out front in higher traffic areas may want to consider the remote option. This provides design flexibility for vent-free cabinetry and allows operators to stash their unit's condenser in a more discrete location. However, operators interested in a remote setup must also ensure that the location they have in mind for their condenser is well-ventilated (ideally without the help of a loud air compressor).

Remote



Hatco model FTBR-S2

Self-contained



Hatco model FTBP-2



Hatco model FTBP-2

One of the many Hatco advantages

In addition to remote and self-contained condenser options, Hatco gives buyers the added flexibility of positioning their temperature controls up to four feet (122 centimeters) from the frost top itself.

Interested in a frost top?

Alrighty, temperature check! Do you think a frost top is the right cold holding and serving solution for your operation? If so, Hatco has a large variety of high-quality frost tops to check out. To start shopping, visit **hatcocorp.com/frost-tops** or click the button below.

Shop Frost Tops



Need more?

If you feel you need a little one-to-one guidance, a Hatco representative is just the ticket. They are the ultimate educational resource. They have in-depth knowledge of Hatco equipment, its different applications, the foodservice industry as a whole, and are the perfect problem solvers. Where do you find these magical creatures? Locate a rep near you using our handy Find-a-Rep tool at **hatcocorp.com/find-a-rep**.

Hatco Corporation
P.O. Box 340500
Milwaukee, WI 53234-0500 USA
414-671-6350
support@hatcocorp.com