April, 2008
Volume 1 Issue 2

Tech Tips brought to you by BSI BRASS SMITH INNOVATIONS LLC

The Clear Choice

How the Glass in Sneeze Guards Can Make (Or Break) Your Food-Service Area

When creating a food service area, designers take several parameters into account – the curves, the square footage, electrical pathways, merchandising options, and many more. But one of the lower things on that list is probably what type of glass to install in your sneeze guards.

It's understandable. After all, they really are just sneeze guards (or food shields, food guards, or breath shields). Glass is just one of those important things that nobody cares about, like shoelaces on a shoe. Or the frame on a Picasso painting. Most look on them as simply functional – they want them made safe, quickly, precisely, and to the standards of the National Sanitation Foundation (NSF).

However, there are many reasons to take the glass in a sneeze guard into consideration while designing a food service area. Since they are required parts of food service, doing them right makes perfect sense. For another, your customers will almost always have to look through them in order to see your food presentation. And since you have already spent so much time and creativity in designing your food service area, it pays to make sure that your sneeze guards are up to snuff.

Glass has been manufactured by humans for at least 10,000 years, though it has often been found naturally occurring where the ground has been subjected to intense heat. Its most basic formulation is as a mixture of silica, soda, and lime. The silica, which is found in many rocks, but most notably in sand, forms the bulk of the

Laminated glass is a stronger option. It is formed by sandwiching lites of ordinary plate glass with layers of an adhesive material, usually of polyvinyl butyral (PVB), and then adding heat and pressure to bond the layers. Laminated glass is a very tough material to break, and even if cracked, its PVB layers will usually hold the glass together. You will often see laminated glass used in car windshields, and if you have ever seen a windshield crack, you will recognize the distinctive spiderweb-type cracking pattern that results. However, laminated glass does have its drawbacks. Though just as clear as ordinary glass, its layers are visible when viewed on edge. It is also harder to work with – harder to polish and manipulate – and it can't be drilled. Laminated glass is also not recyclable due to its inner PVB layer.

Tempered glass, the next option, is formed by taking plate glass and heat-treating it to remove undesirable stresses from the glass, and then rapidly cooling it to compress its edges and surface. Though Brass Smith is able to work with either acrylic, laminated glass, or tempered glass, they recommend using tempered glass for a variety of reasons. Aesthetically, the edges of tempered glass look better, with a greenish hue due to its slight lead content. Plus, they may be easily polished. Tempered and heat-strengthened glasses are also up to four times stronger than ordinary plate glass and are better able to withstand impacts. It also handles temperature changes of up to 300 degrees Fahrenheit without cracking, unlike typical plate glass. Tempered glass is also recyclable, unlike laminated glass.

One feature of tempered glass that is often viewed as a drawback is actually something that makes it perfectly suited to food service applications – when it cracks, it shatters completely into small fragments. These fragments are square and fairly dull, and much less likely to injure than plate glass that breaks into sharp shards.

glass. Soda is added to the mixture to lower the melting point of the silica. Lastly, lime from limestone is added to make the melted silica more viscous and workable, as well as more durable.

There are variations of this formula, but the basic recipe has remained similar for thousands of years. This mix is first heated to around 1800 Degrees Fahrenheit to melt the silica, then poured into molds to shape it, and then cooled rapidly to retain the shape of the mold and the clarity of the liquid.

Of course, plain, raw glass is not very strong – generally because it is constructed out of nothing more than fragile crystals strung together. It seems solid enough, but in some cases, very old glass has even been found to slump, leading some to classify glass as a liquid. This begs the question of whether glass is a liquid or a solid, a question that is very difficult to answer since it has some of the qualities of both liquids and solids. As a result, it is usually classified as an “amorphous solid” or “rigid liquid”.

One of its “liquid” characteristics is its clarity. Many factors can influence glass’s clarity. Certainly, imperfections in the basic elements of the glass recipe can affect clarity, but elements can also be added to or removed from the recipe to deliberately affect the clarity. Some types of glass, like Starphire® glass from PPG, use a low-iron blend to get nearly perfect clarity.

Raw glass is typically not used in sneeze guards, however, because it is neither safe nor strong enough. So what are your glass options for sneeze guards? NSF standards require the use of either high-quality acrylic, a laminated glass, or a tempered glass.

Though acrylic guards will not shatter, they can crack. They also scratch very easily, and may lose clarity if cleaned with the wrong products. Acrylic also typically lacks the strength and spanning capabilities of glass. As a result, Brass Smith does not recommend using acrylic in sneeze guards.

Deflection – the amount a piece of glass can bow before breaking – should also be taken into consideration when deciding on sneeze guards. Acrylics are not able to span as much as glass materials. And while the strength of the glass does not change how much it deflects, added strength means that it can deflect more before breaking, so it can span greater lengths.

Generally, the thicker the panel, the greater the span it can reach before its deflection makes it impractical. While the NSF doesn’t put forth any standards for glass length, Brass Smith’s standard is to use 1/4" and 3/8" thick panels attached by posts, with a maximum length of 66" on-center between posts for flat glass. A reach of up to 72" can be achieved by using curved glass since curving increases the surface tension of the glass, making it slightly stronger.

So whether strength, aesthetics, or just plain safety is your main concern, tempered glass is the best solution for food service applications in sneeze guards.

Here are the key points to consider:

- Glass is generally made from a mix of silica, soda, and lime, which is superheated, shaped, and then supercooled to reach desired shape and clarity.
- The National Sanitation Foundation standards call for using either acrylic or safety glass in sneeze guards.
- Acrylic is an economical option, but scratches easily and lacks the strength of glass.
- Laminated glass, made of layers of plate glass and PVB, is tough and well suited to food-service applications; however, it is not as strong as tempered glass, doesn’t withstand heat as well, is not recyclable, and is not as easy to manipulate.
- Tempered glass is plate glass that is heated to remove imperfections. This process makes it up to four times as strong as plate glass and increases its heat-resistance.
- Tempered glass also cracks into dull fragments for safety, unlike plate glass which breaks into sharp shards.
- Deflection is the amount a piece of glass will bow before breaking. Tempered glass will deflect more before breaking.
- Brass Smith uses 1/4" and 3/8" thick glass with a maximum length of 66" on center between

posts.

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