

Introduction

In order for Tempered Glass to survive the heat treating process, the edges of the glass must be machined/sanded to remove microscopic fissures created during the cutting process. The standard edge treatment for tempered glass is referred to as “seamed” or as a #4 edge. The term “#4 Edge” dates to ~1960 when safety glazing became standard in American automobiles. Glass can be tempered in the raw cut form however a significant amount of quench breakage will occur resulting in poor material yields. Contrary to popular belief, the basic seaming of glass edges is a non value added process and does not provide the end user any material safety, security or benefit.

Due to the violence of the seaming process, it is common for the glass to slightly chip along the edge. The more coarse the seaming belt (#80 grit for example), the more violent the material removable and the less aesthetic the edge. A finer grade (#200 grit for example) will produce an attractive edge but will result in more quench breakage. The most typical and medium grade seaming belt used is #120 and chipping may occur.

Seamed Edge Examples



A typical lite of glass with a #4 “seamed” edge. It is not uncommon for the seam to be unequal from side to side. The manual seaming process consists of a cross belt seamer and operator pressure, belt wear and belt tension all affect the end result



A stack of 6mm #4 edge (seamed) glass. The center of the glass edge is still in it’s raw float form and the sharp edges containing fissures mitered off.

Seamed Edge Best Practices

A #4 or seamed edge must be encapsulated in a sash or framing extrusion. Customers choosing to install glass with a #4 edge exposed are doing so at their own risk and Lippert does not guarantee or warranty any glass installed with exposed edges where a #4 edge is ordered/called for. The minimum edgework for exposed glass edges are referred to as #2 edges. #2 edges are ground in a rounded C shape but may still have small skips and imperfections.

The presence of chipping in fully tempered glass does not affect the future integrity, strength or performance of the product in the field. A chip that survives the rapid heating and cooling of the tempering process maintains the same integrity of the same part with no chipping.

Seamed Edge Standards

ASTM C1036 Table 1 allows for glass edges to have shell chips equal in depth to 50% the thickness of the glass (3mm in depth on 6mm glass, for example) and depending on the quality level desired varying widths and lengths.

	Q-2 Quality Level	Q-3 Quality Level	Q-3 Quality Level
Chip Depth	50% of Glass Thickness	50% of Glass Thickness	50% of Glass Thickness
Chip Width	1/16" inch (1.5mm)	1/4" inch (6mm)	unlimited
Chip Length	1/8" inch (3mm)	1/2" (12mm)	unlimited

Seamed Edge Measuring

Using Calipers, measure the depth of the chip, width of the chip and length of the chip to determine compliance.

Minor edge flares and “peaks” are also permitted on #4 edges. The reverse criteria of shell shipping applies.





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