

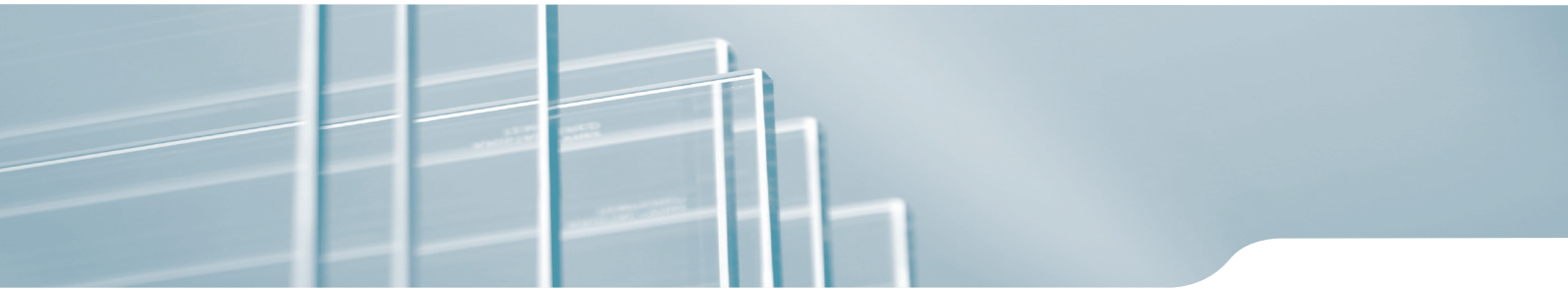
FGS Glass
Manual

Innovation





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Toughened Glass

Toughened Glass, also known as tempered glass, is 4-5 times stronger than ordinary annealed or standard float glass. Through a process of heating the glass surface to around 700° Celsius, then cooling rapidly, the resulting surface compression formed on the panel increases the mechanical strength of the piece.

Benefits

- Increased wind or human impact loading.
- Classified as Grade A Safety Glass
 - Should the glass be broken the process ensures the panel disintegrates into small relatively harmless pieces.
- The clarity or visual properties of the glass are unaffected by the process.

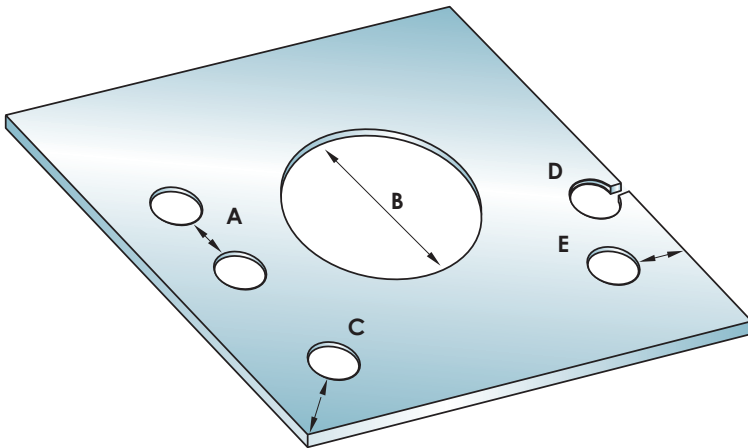
All work on the panel - cutting, edging etc, needs to be completed before the toughening process.

Application

The toughening process increases strength and the ability to handle temperature extremes, creating the solution for frameless products such as shower screens, pool fences, balustrades and splashbacks.

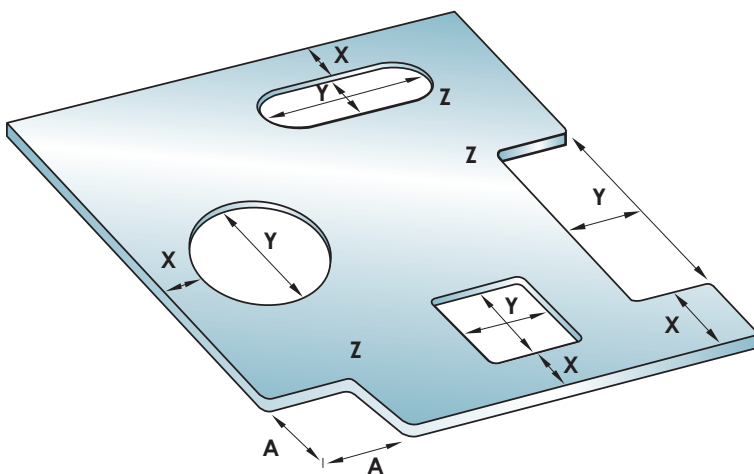


Hole Guidelines for **Toughened Glass**



- A: Distance between the holes must be at least 4 x the glass thickness
- B: Diameter of the hole must not be greater than 33% of the panel measurement at the narrowest point
- C: Distance from the edge of the hole to the corner must be 4 x glass thickness
- D: For a hole that is positioned closer than the recommended distance, a saw cut is made to minimise stresses and chance of breakage
- E: Distance from the edge of the glass must be at least 1.5 x thickness 4-6mm glass or 2 x thickness 8-15mm glass

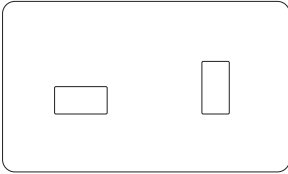
Cut-Out Guidelines for **Toughened Glass**



- X: Distance between the holes/cut-outs and/or glass edge must be at least 4 x the glass thickness.
- Y: Height/width of the hole/centre cut-out must not be more than 33% of the glass height/width. Dimensions of hole/centre cut-out should not be less than the thickness of the glass
- Z: All non-circular centre cut-outs must have a minimum radius of not less than the glass thickness

Edges & Finish Specifications for Toughened Glass

At FGS, we pride ourselves on exceptional finishing and edging to all frameless glass panels. The following provides an overview of the types of finish and edge specifications which incur processing charges and should be specified at the time of order.



Power Point Cut Out -

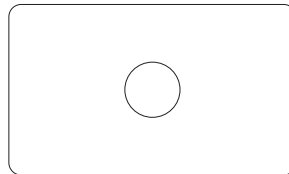
applies to std size - 100mm x 60mm

Central Cut out -

applies to any cut out > 120mm

Oversized Central Cut out -

applies to any cut out > 220mm



Polished Hole

Internal polishing is performed by the CNC machine to create perfectly smooth finishes for exposed holes or slots
Minimum size hole - 40mm



Back Mitre - 22.5° - 45° edge

Back Mitre > 45° edge

Back Mitres are polished



Tipped Corners

Tipped corners are standard for 6 - 10mm glass thickness.



Polished Tipped Corners

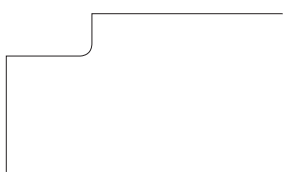
Polished Tipped Corners are standard for 12 - 15mm glass.
Maximum 3mm radius



Polished Radius Corners

Polished radius corners > 3mm will incur an additional fee

All FGS glass panels are produced with Tipped Corners which removes sharp corners as per AS: 2208. No additional processing fees are applied unless specifications to the above differ.

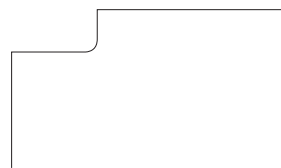


Corner Cut Out

Internal radius must have a minimum radius of 7mm

Oversized Corner Cut Out -

applies to a corner where one of the dimensions > 400mm



Polished Cut Out

Internal radius must have a minimum radius of 15mm



Slotting

Saw Cut as specified in 'Hole Guidelines for Toughened Glass'. Refer Page 2, Item D.



Holes

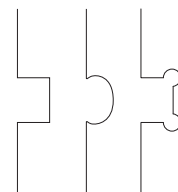
Minimum diameter not less than glass thickness.

Holes > 85mm will incur an additional fee



Counter Sunk Holes

< 85 mm diameter



Edge Cut Out

Hinge Edge Cut Outs

Oversized Edge Cut Out

applies to a Hinge Cut Out where one of the dimension > 120mm

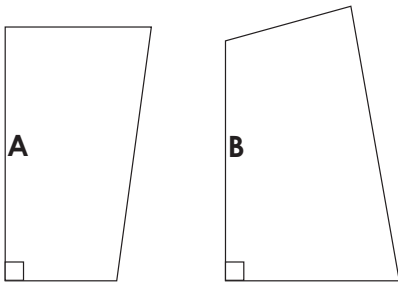
Edges & Finish Guidelines for **Toughened Glass**

All Toughened Glass requires finished edges to meet furnacing requirements.
The following finishes are available on FGS panels. Please specify at time of order.

Flat Polish
Flat Grind
Rough Arris

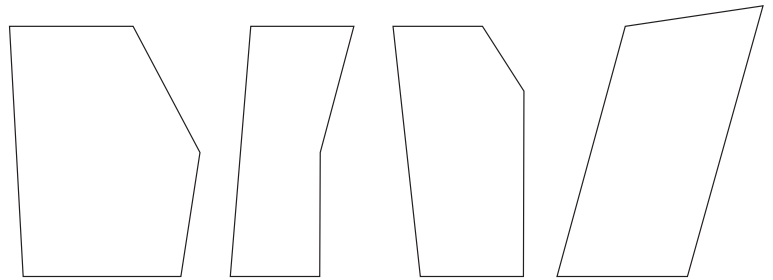
Simple Shape

Shape contains at least one right angle
A: 1 rake, B: 2 rakes



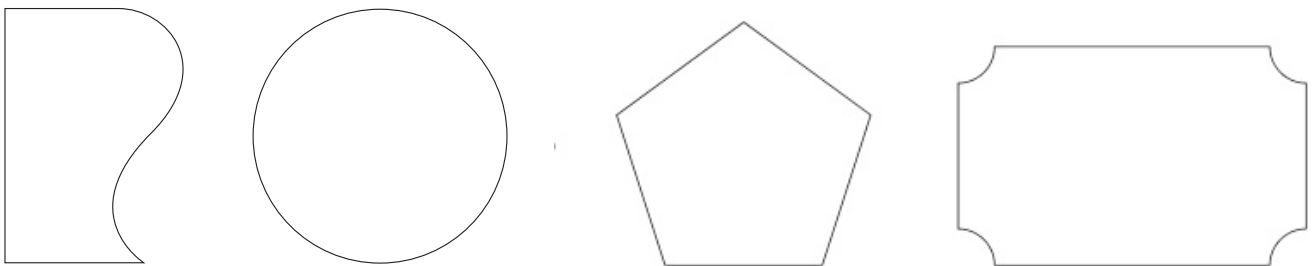
Complex Shape

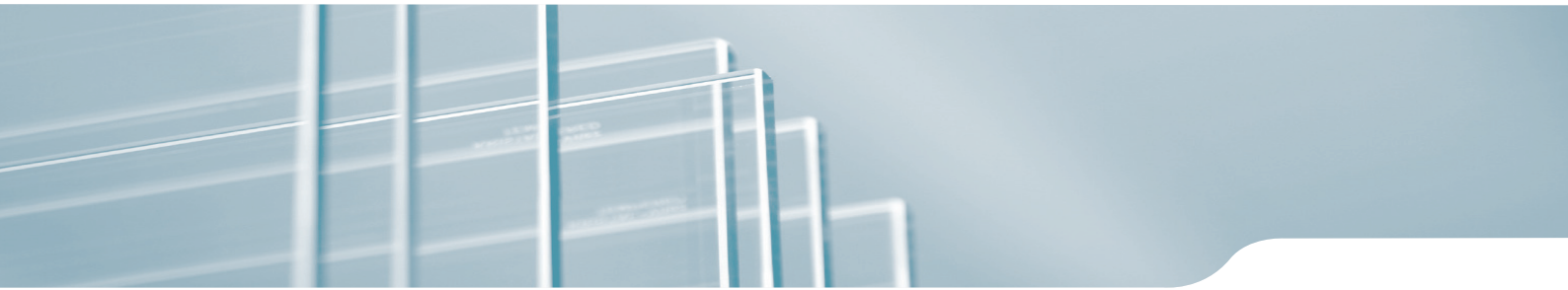
Shape contains no right angles



Multi Complex Shape

An irregular shape that contains curved edges or more than 5 edges





Guidelines for **Toughened Glass Template**

Drawing can be supplied as an Autocad DWG or DXF file.

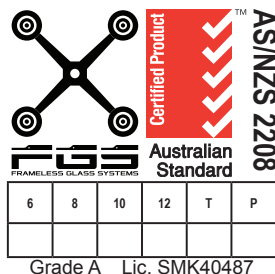
If you would prefer to supply a solid template, please be aware a template handling charge will be applied.

- Templates must be complete and full size
- Templates must be made from a solid and manageable material; do not use glass, we recommend 3mm MDF as a minimum, ensure no screws or sharp objects protrude through the surface.
- Templates must be labelled with the customer's name, order number, glass type and thickness. All templates require a written order
- Hole positions must be marked with a cross to indicate centre point, also include the diameter of the hole on the template.
- If you make a mistake please ensure all irrelevant markings are removed and any drill holes are covered
- If the glass is mirrored, painted or has a pattern on one side please indicate clearly by writing 'FACE' on the outside (non-painted)/smooth side.
- Do not hesitate to contact FGS should you have any queries relating to Glass Templates.

Identification **Stamp**

As directed by the Australian Standards - AS/NZS 2208, FGS is required by law to apply safety marks to all glass toughened by our plant.

As specified by the client, the glass can be permanently printed with the approved logo or an non-reusable sticker applied. The logo or sticker will appear in the lower left hand corner of the glass panel unless otherwise specified on ordering.



FGS Production Capabilities

FGS is a Full CNC Glass processing facility utilising the best quality tooling to ensure consistently repetitive high quality results. A Water Jet machine and Single Edge machine are also used for specialised requirements.

Machine Capabilities

CNC

Glass Thicknesses: 6mm, 8mm, 10mm, 12mm, 15mm

Maximum Panel Size: 3875mm x 2210mm (Glass widths greater than 3650mm will incur a 30% surcharge)

Maximum Panel Weight = 260kg



All Glass Panel Charges are based on a minimum 0.2 sq metre. Panels where one of the dimensions is less than 70mm are unable to be toughened, however can be supplied as 'float' and will incur additional processing fees due to additional manual handling and high risk of breakage.

Toughening:

Glass Thicknesses: 6mm, 8mm, 10mm, 12mm, 15mm

Maximum Panel Size: 3875mm x 2210mm

Types of Glass

Toughened Glass

We offer a full range of toughened glass products:

6mm Clear, Starphire, Crystal Clear (low iron), Matelux, Satin Frost (low iron acid etch) and Tints

8mm Clear, Crystal Clear (low iron), Matelux, Satin Frost (acid etch - low iron option available) and Tints

10mm Clear, Crystal Clear (low iron), Matelux, Satin Frost (acid etch - low iron option available) and Tints

12mm Clear, Starphire, Crystal Clear (low iron), Matelux, Satin Frost (acid etch - low iron option available) and Tints

15mm Clear

Mirror

Mirror can be cut to size with a full range of CNC processing available.

Standard edgework is available (excluding bevelled edge).

We currently stock the following mirror products:

4mm Clear

6mm Clear, Grey, Bronze

For all other glass or mirror products, please contact FGS.

Delivery

Excellent turn around times in production with daily confirmation reports send by email,

Delivery options include pick-up or delivery FIS.

Additional fees apply for job site delivery. Specify address at time of order and ensure personnel are available on site to assist with unloading of glass.

Hardware

FGS offers an extensive range of frameless glass hardware which can be delivered with your glass as a complete package. Please ensure you specify this at the time of order.

Information supplied is as a general guide only. Technical specifications are a recommendation and should be verified with an engineer for your individual projects. Further information relating to Australian Standards for Glass can be found at www.standards.org.au

75 - 77 Ricketts Rd, Mt Waverley VIC 3149 T. 03 8562 0888 F. 03 8562 0899 Toll Free. 1800 099 918 Email. glass@fgs.com.au

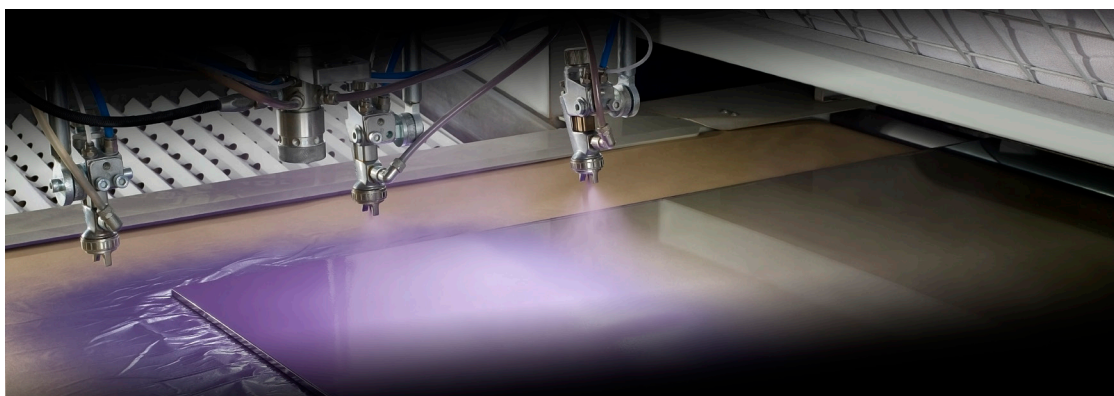
www.fgs.com.au

FGS Painted **Splashbacks**

Painted Glass Splashbacks are a popular choice for both kitchen and bathroom walls today as they are available in almost any colour and/or design that you can imagine and are an easy surface to clean. This allows home owners to create their own individual stamp on their kitchen or bathroom space and with clever selection can often make a smaller area appear more spacious.



FGS is a leader in Painted Splashbacks with a fully automated state of the art paint line which ensures consistency of paint application with a scratchproof hardened finish and speedy drying time with an oven attached to the paint line. FGS offers a cost efficient, reliable solution with attractive leadtimes and no need for double handling which eliminates the risk of scratched glass and saves customer transport time. Our one stop shop approach also ensures a fast turnaround on reworks.



FGS Painted Splashbacks - Your First Choice for Splashbacks

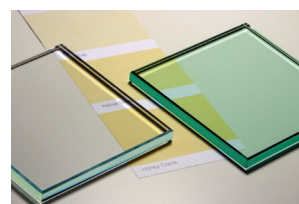
FGS Paint Colours



FGS can cater for all individual tastes and can create a splashback using any paint colour (solid or metallic) from the published ranges of major paint suppliers.*

* Non-Standard Rates apply

Low Iron glass is the ideal choice of glass type for splashbacks as its ultra clear qualities ensure colour accuracy, especially when using whites or other light colours. FGS offers both Starphire® and the cost effective option of Crystal Clear glass which avoids the greening inherent in standard clear glass. For true white and light colours, ask for Starphire® or Crystal Clear glass.

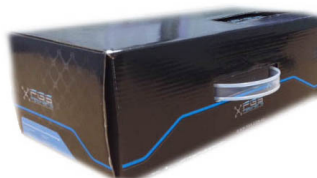


FGS Colour Range

FGS offers a Standard Colour Range comprising the most popular colours in splashbacks. The colours in this range are priced competitively and are supported by a Paint Sample Box which contains 100mm x 150mm size samples which facilitates the selling process for customers.

The FGS Standard Colour Range comprises:

- 22 Solid Colours
- 6 Metallic Colours
- 2 TuffMirror Colours
- 6 ColourMatt Colours



FGS TuffMirror™ is the ideal product when choosing a mirrored option for a kitchen splashback. The FGS TuffMirror™ is toughened to Australian Standards AS/NZS 2208 allowing it to withstand extreme temperatures and making it suitable to install adjacent to a gas cooktop. The FGS TuffMirror™ product is an extremely reflective glass which contains a pyrolytic coating providing high durability and an exceptionally smooth mirror finish when painted. Available in a selection of 'smoked' colours, FGS TuffMirror™ is a great choice for kitchen splashbacks or feature walls in small living areas.

Colours Available:

- Classic (Amber tint suitable to be used with warm colours)
- Pewter (Blue/Grey tint suitable to be used with cool colours)

The latest addition to the FGS Painted Splashback Range is ColourMatt™ - for those looking for a unique matte surface for painted glass. Colour Matt™ is suitable to be used for Splashbacks, Feature Walls, Table tops, benchtops or bathroom vanities.



Colours Available:

- Alpine Frost
- Iced Latte
- Baileys on Ice
- Grey Haze
- Raspberry Frost
- Le Blanc (Low Iron Glass)

FGS Glass Label

FGS Job Number (as appears on invoice)	89773		
	Company Name		29 NOV — Order Due Date
Panel Dimensions	H120	W1143	6mm Crystal Clear Tgh — Glass Type & thickness
Glass Mark Customer specific reference eg. ensuite, level 1	<div style="display: flex; justify-content: space-around;"> <div style="background-color: black; width: 60px; height: 40px;"></div> <div style="background-color: black; width: 60px; height: 40px;"></div> <div style="background-color: black; width: 60px; height: 40px;"></div> <div style="background-color: black; width: 60px; height: 40px;"></div> </div>		
Your Ref & Order Number Customer supplied references	BATH Your Ref:	Johns Street Your Order No.:	23015-2
P - Total number of panels in the order eg 1 of 6 panels	P 1 - 6	S/N - 1	B/N - 50460
	Flat Polish All Edges		
In the case of 'No Stamp' a removable destructable sticker will be applied.	NO STAMP	DELIVERY	DXF — Drawing Format
		351679	2.1kg — Panel Weight
Special instructions	S/E SQ		
Individual Panel ID	P/ID 1175172		

