

# Glass Manual

**Hole Guidelines for Toughened Glass**

**Pg. 2**

**Cut-Out Guidelines for Toughened Glass**

**Pg. 3**

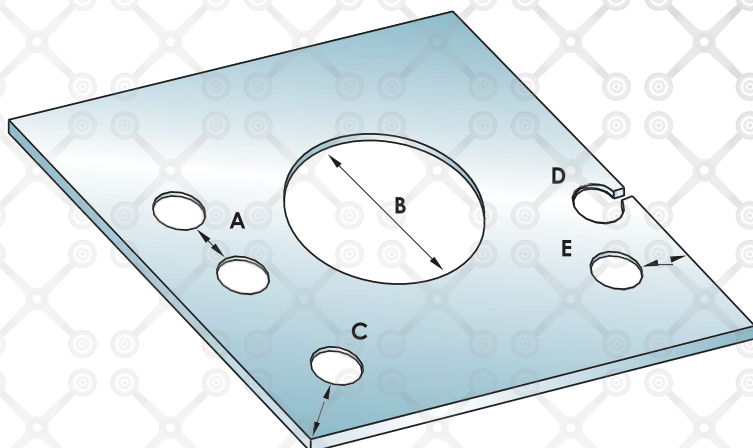
**Edges & Finish Specifications for Toughened Glass**

**Pg. 4**

**Template Guidelines for Toughened Glass**

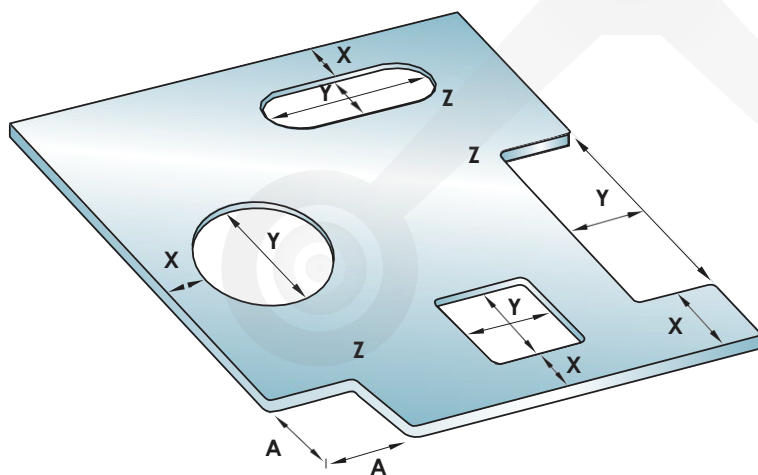
**Pg. 5**

Oct 2020



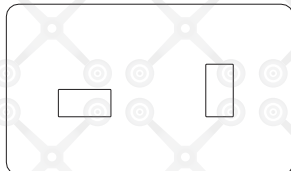
- A: Distance between the holes must be at least 4 x the glass thickness
- B: Diameter of the hole must not be greater than 33% of the panel measurement at the narrowest point
- C: Distance from the edge of the hole to the corner must be 4 x glass thickness
- D: For a hole that is positioned closer than the recommended distance, a saw cut is made to minimize 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

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 -

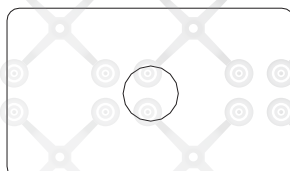
applies to std size - 100mm x 60mm

### Central Cut out -

applies to any cut out > 120mm

### Oversized Central Cut out -

applies to any cut out > 220mm



### Polished Hole

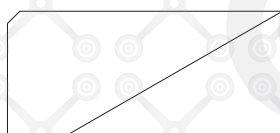
Internal polishing is performed by the CNC machine to create perfectly smooth finishes for exposed holes or slots  
Minimum size hole - 40mm



### Back Mitre - 22.5° - 45° edge

### Back Mitre > 45° edge

Back Mitres are polished



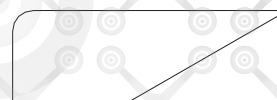
### Tipped Corners

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



### Polished Tipped Corners

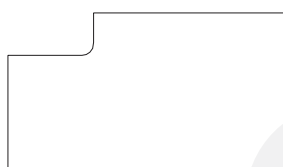
Polished Tipped Corners are standard for 12 - 15mm glass.  
Maximum 3mm radius



### Polished Radius Corners

Polished radius corners Greater than 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.**

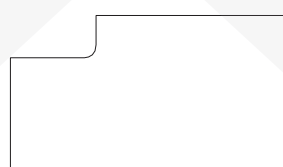


### Corner Cut Out

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.



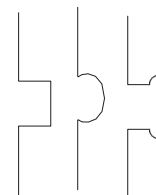
### Holes

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 dimensions > 120mm

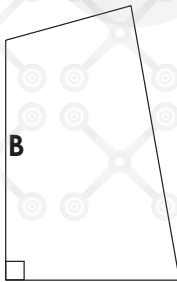
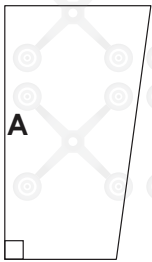


All Toughened Glass requires finished edges to meet furnacing requirements. The following finishes are available on FGS panels. Please specify at time of order.

Flat Polish  
Flat Grind  
Rough  
Arris

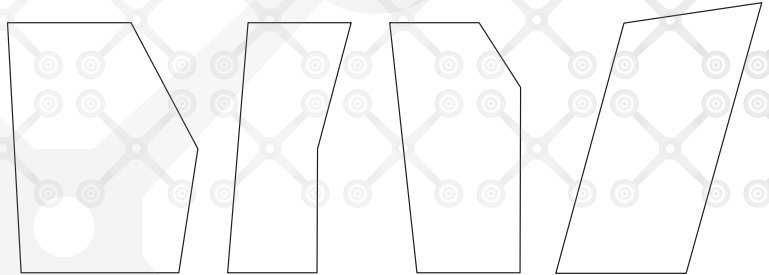
### Simple Shape

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



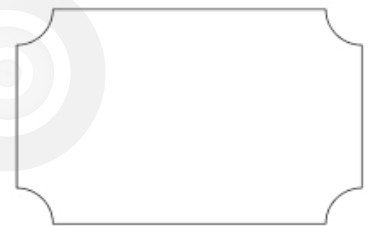
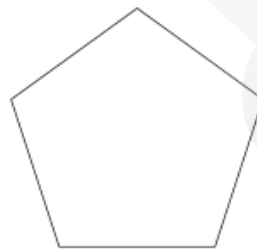
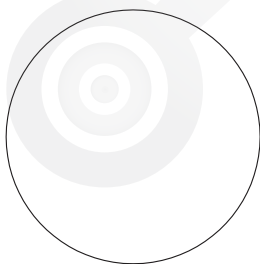
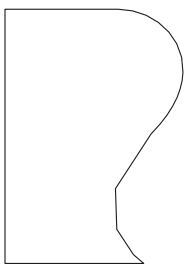
### Complex Shape

Shape contains no right angles



### Multi Complex Shape

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



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 hole or pilot hole on the template. If you use a cross to indicate the centre point use a fine tip pen & make it clear. We can only be as accurate as your template, 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 with tape
- If the glass is mirrored, painted, or has a pattern on one side please indicate clearly by writing [FACE] [NON-PAINTED SIDE] [SMOOTH SIDE] [ACID SIDE] [NON ACID SIDE] etc.
- Do not hesitate to contact FGS should you have any queries relating to Glass Templates.
- If you need to keep the template after processing is complete, please indicate this on your order & plan to pick it up from our office. FGS Glass does not store templates once the job is completed.

### Identification Stamp

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

Per Australian standards, a destructible, non-reusable sticker is applied to the glass in lieu of a permanent non-removable stamp.

