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RECOMMENDATIONS CONCERNING TEMPERED HOLES ACCORDING TO ASTM C-1048

1) Hole position

- a) For all glass thicknesses, the minimum distance from the edge of the hole to the nearest edge of the glass should be the greater distance between:
 - i. 6 mm (1/4")

or

ii. 2 times the thickness of the glass

(see table 1)

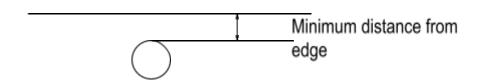


TABLE 1

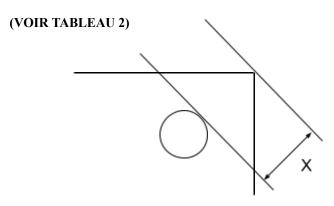
| Thickness | Minimum distance |
|-----------|------------------|
| 3.3 mm | 6 mm or 1/4" |
| 4 mm | 8 mm or 5/16" |
| 5 mm | 10 mm or 3/8" |
| 6 mm | 12 mm or ½" |
| 8 mm | 16 mm or 5/8" |

| Thickness | Minimum distance |
|-----------|------------------|
| 10 mm | 20 mm or 13/16" |
| 12 mm | 24 mm or 15/16" |
| 15 mm | 30 mm or 1 3/16" |
| 19 mm | 38 mm or 1 1/2" |

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b) The minimum distance from the edge of the hole to a corner of the glass should be 6.5 times the thickness of the glass when the corner is 90 ° and more.



X = minimum corner

distance

TABLE 2

| Thickness | Minimum distance |
|-----------|-------------------|
| 3.3 mm | 21.5 mm or 7/8" |
| 4 mm | 26 mm or 1" |
| 5 mm | 32.5 mm or 1 1/4" |
| 6 mm | 39 mm or 1 1/2" |
| 8 mm | 52 mm or 2" |

| Thickness | Minimum distance |
|-----------|--------------------|
| 10 mm | 65 mm or 2 9/16" |
| 12 mm | 78 mm or 3" |
| 15 mm | 97.5 mm or 3 7/8" |
| 19 mm | 123.5 mm or 4 7/8" |

- 2) Minimum distance between holes
 - a) For all glass thicknesses, the minimum distance between the holes is the greatest distance between:

i.
$$Y = 10 \text{ mm}$$

ii.



Y = minimum distance

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3) Round hole dimension⁽¹⁾

For all glass thicknesses, the minimum dimension of the hole must be the largest diameter between:

i. 6 mm

or

ii. the thickness of the glass

(VOIR TABLEAU 4)

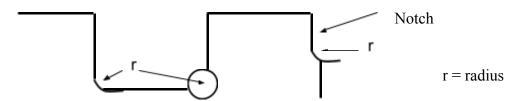
TABLEAU 4

| Thickness | Minimum diameter |
|-----------|------------------|
| 3.3 mm | 6 mm |
| 4 mm | 6 mm |
| 5 mm | 6 mm |
| 6 mm | 6 mm |
| | |
| 8 mm | 8 mm |

| Thickness | Minimum diameter |
|-----------|------------------|
| 10 mm | 10 mm |
| 12 mm | 12 mm |
| 15 mm | 15 mm |
| 19 mm | 19 mm |

4) Notches, Letter Passes, and Holes that are not Round

All corners should be rounded with a radius equal to or greater than the thickness of the glass.



5) Dimensional tolerances for holes

a) Hole diameter: ± 1.6 mm

b) Center of the circle in relation to its edge: \pm 1.6 mm

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- c) Distance between the centers of 2 holes: \pm 1.6 mm
- d) Maximum chip size on the edge of the hole: ± 1.6 mm
- 6) Dimensional tolerances for notches
 - a) For glass less than $12mm : \pm 1.6 mm$
 - b) For glass less than $12mm : \pm 3 mm$
 - c) For all thicknesses, the inner surface of the notches should be polished or with a soft chamfer

Hole size available

Hole drill bit size available (in mm):

5-6-7-8-9-10-11-12-13-14-15-16-17-19-20-21-22-24-26 28-30-32-35-38-40-44-48-51-54-57-64-66

Polishing and tempering min. requirement

To perform a flat polish on all 4 sides, each side must be at least 4" minimum, if one side is smaller than 4", only 2 short sides and one long side can be polished.

For Glass tempering:

5 mm thick glass and over = min 12" diagonal

Round Glass = min 16" diagonal