BS 952-2:1980

# Glass for glazing —

## Part 2: Terminology for work on glass

UDC 666.15:698.3:001.4

# Cooperating organizations

The Elements and Components (of Diverse Materials) for Buildings Standards Committee, under whose direction this British Standard was prepared, consists of representatives from the following Government departments and professional and industrial organizations:

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Institution of Municipal Engineers
Metal Window Federation of Great Britain
National Association of Shopfitters
National House-building Council
Patent Glazing Conference
Sealant Manufacturers' Conference
Union of Construction, Allied Trades and Technicians

This British Standard, having been prepared under the direction of the Elements and Components (of Diverse Materials) for Buildings Standards Committee, was published under the authority of the Executive Board and comes into effect on 30 April 1980



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# Contents

# Foreword

The first edition of BS 952 was published in 1941, revised in 1953, and again in 1964 under the authority of the Glass Industry Standards Committee.

The present revision, now under the direction of the Elements and Components (of Diverse Materials) for Buildings Standards Committee, has been published in two separate Parts of which this is Part 2. Part 1 "Classification" was published in 1978.

Part 1 classifies soda-lime-silica glasses for building purposes and gives details of nominal thickness, maximum sizes, approximate weights and tolerances.

These glasses are intended for use in accordance with the recommendations of CP 152 "*Glazing and fixing of glass for buildings*".

This Part 2 includes illustrated definitions of terms in general use relating to the cutting, working and decorating of glass for building purposes.

It is intended to publish, in due course, a Part 3, which will include a more detailed technical specification for glass in building in line with an EEC Directive currently being prepared.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

**Compliance with a British Standard does not of itself confer immunity from legal obligations.**

**Summary of pages**

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 12 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

## 1 Scope

This Part of this British Standard provides descriptions and illustrations of types of work on glass. The main processes, comprising cutting, obscuring and the various decorating processes, are described.

## 2 Cutting processes

**2.1 Edge work and bevelling.** Details of edge work and bevelling are given in Table 1.

**2.2 Brilliant cutting.** A decorative process employed for cutting designs on glass whereby various types of cut (V cuts, edge cuts, panel cuts, round cuts, and decorative motifs such as punts and hollows) are made. The cuts may be subsequently smoothed and polished. The different types of cut are illustrated in Figure 1.

**2.3 Finger slotting.** A feature obtained on the surface of the glass by allowing the edge of a smooth stone wheel to penetrate the surface. The typical detail of a finger slot is shown in Figure 2.

A finger slot (also known as a "cut sunk finger grip") is a purely functional surface treatment in glass of virtually all types to facilitate easy sliding of glass doors. Since finger slots are made by the controlled grinding of a wheel into one side of the glass, they vary dimensionally according to the diameter and width of the wheel. However, a typical size is 65 mm × 20 mm × 3 mm. Finger slots are usually smooth ground, but can be polished.

**2.4 Engraving.** A decorative process, usually applied to hollow glassware, but sometimes also to flat glass, whereby the surface of the glass is cut by a small revolving wheel with or without an abrasive. The cut may or may not be polished.

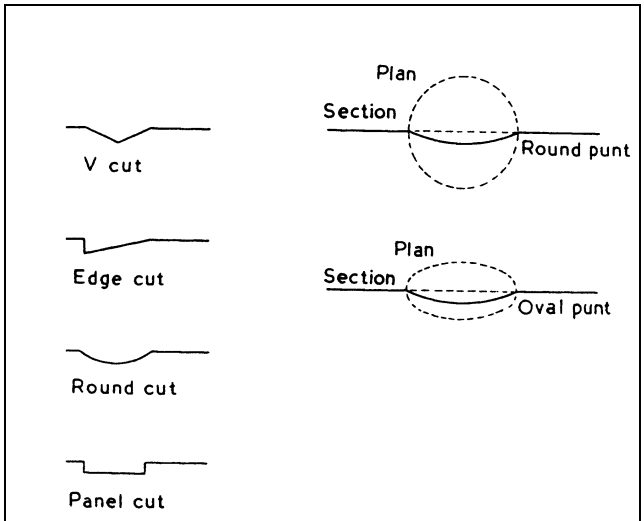



**Figure 1 — Types of brilliant cut (not to scale)**

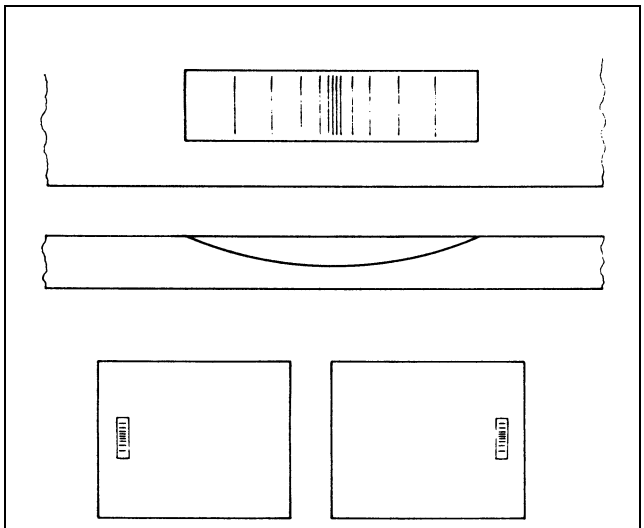


**Figure 2 — Finger slot (or cut sunk finger grip) (not to scale)**

**Table 1 — Edge work and bevelling**

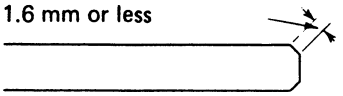
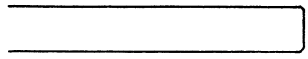
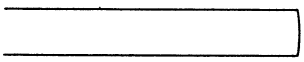
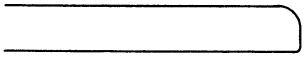
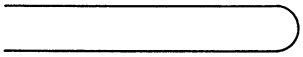
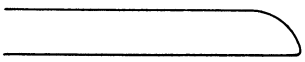
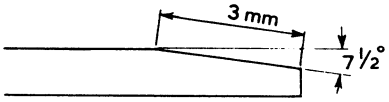
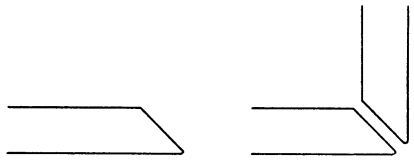
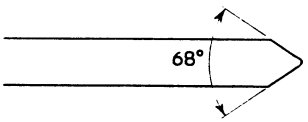
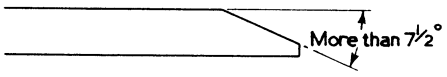
| Term | Form | Finish | Illustration |
|---|---|---|---|
| 1. Arris edge | A small bevel of width not exceeding 1.6 mm at an angle of approximately 45° to the surface of the glass | Ground, smoothed or polished |   |
| 2. Flat edge | The cut edge of the glass is flat and the surface edges are slightly arrised | Ground, smoothed or polished |  |
| 3. Round edge | The cut edge of the glass is slightly curved to form an arc of a circle | Ground, smoothed or polished |  |
| 4. Half round | Half of the cut edge of the glass is rounded approximately in the form of a quarter circle. The remaining surface edge is slightly rounded | Ground, smoothed or polished |  |
| 5. Full round | The cut edge of the glass is rounded approximately in the form of a semi-circle | Ground, smoothed or polished |  |
| 6. Thumb or bullnose | The surface edge of the glass is curved in a shape resembling the profile of a thumb | Ground, smoothed or polished |  |
| 7. Bevel | The surface edge of the glass is bevelled to 3 mm or more in width as required. The angle formed by the intersection of the plane of the bevel with the face of the glass is about 7½° | The bevel is polished unless otherwise specified. The nose of the bevel is left as cut |   |
| 8. Mitre bevel | The cut edge of the glass is bevelled to an angle of approximately 45° (unless otherwise specified); the extreme point is slightly arrised. If required the knife edge can be slightly radiused to form an arc of a circle when in contact with the corresponding edge of another plate | Ground, smoothed or polished |  |
| 9. Mitre bevel, both sides | Both surface edges of the glass are bevelled and, unless otherwise specified, the complete angle will be approximately 68°. The extreme point is slightly rounded | Ground, smoothed or polished |   |
| 10. Steep bevel | Any bevel where the angle of bevel is more than 7½° and less than 45° | Ground, smoothed or polished |   |

**Table 1 — Edge work and bevelling**

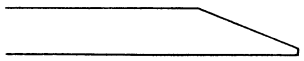
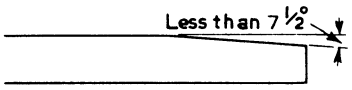
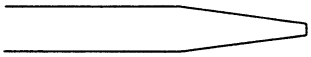
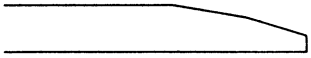
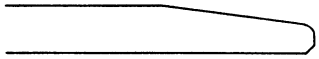
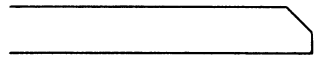
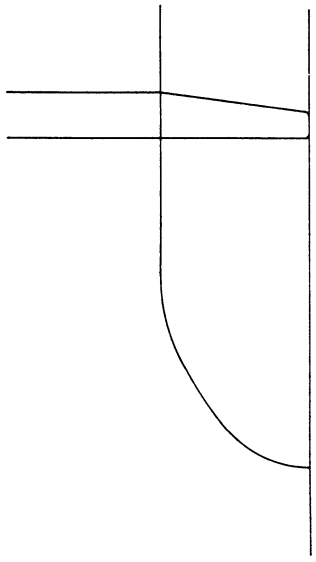
| Term | Form | Finish | Illustration |
|---|---|---|---|
| 11. Feather edge | Any bevelled edge where the bevel is brought as close as practicable to the back edge of the glass | The bevel is polished unless otherwise specified |  |
| 12. Vauxhall or antique bevel | The surface edge is bevelled at an angle less than 7½° so as to give a very shallow and wide bevel that has no clearly defined back edge | The bevel is polished unless otherwise specified. The nose of the bevel is left as cut |   |
| 13. Bevel both surfaces | Both surface edges are bevelled to the usual standard bevel | The bevel is polished unless otherwise specified. The nose of the bevel is left as cut |  |
| 14. Double bevel | The surface edge of the glass on one face is bevelled, the bevel consisting of two intersecting planes | The bevel is polished unless otherwise specified. The nose of the bevel is left as cut |  |
| 15. Bevel with edge nose polished | The cut edge of the standard bevel is slightly rounded | Polished |  |
| 16. Flat edge and bevel | The surface edge is bevelled at an angle of approximately 45° | Polished unless otherwise specified |  |
| 17. Diminishing stop bevel (also known as “stop scallop” or “fade bevel”) | A bevel in which only a portion of the surface edge is bevelled, the bevel running out on a small radius | Polished unless otherwise specified |  |

**Table 1 — Edge work and bevelling**

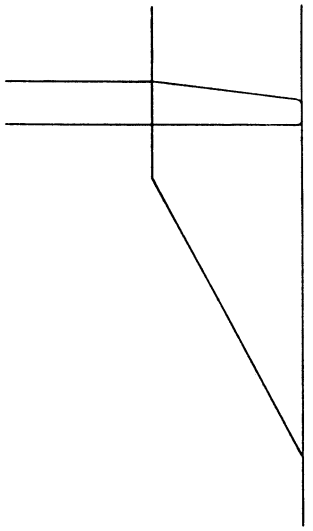
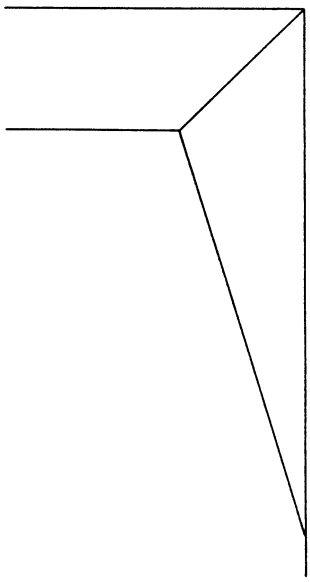
| Term | Form | Finish | Illustration |
|---|---|---|---|
| 18. Tapered stop bevel (also known as "stop mitre") | A bevel in which a portion of the surface edge is bevelled, the bevel running out on a straight line at an angle in the cut edge | Polished unless otherwise specified |  |
| 19. Taper bevel | A bevel tapering over its full length | Polished unless otherwise specified |  |

**Table 1 — Edge work and bevelling**

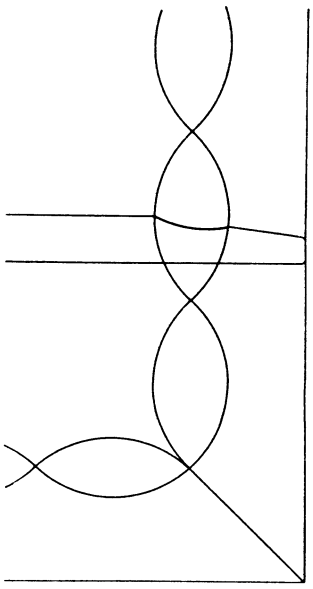
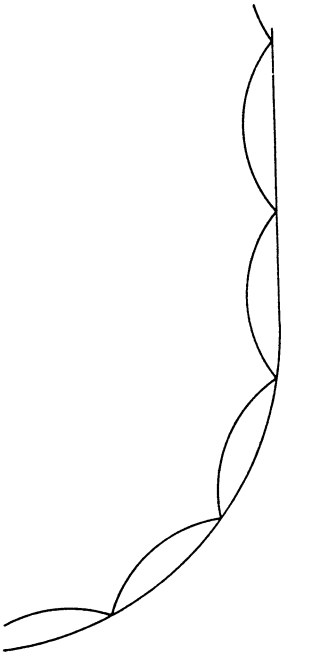
| Term | Form | Finish | Illustration |
|---|---|---|---|
| 20. Beaded bevel (also known as "rope bevel") | A standard bevel having super-imposed on the line of intersection of the bevel with the surface of the glass a series of brilliant cut shallow grooves | Polished unless otherwise specified |  |
| 21. Scalloped bevel (also known as "spoon bevel") | A series of scallops meeting at the surface edge of the glass | Polished unless otherwise specified |  |

**Table 1 — Edge work and bevelling**

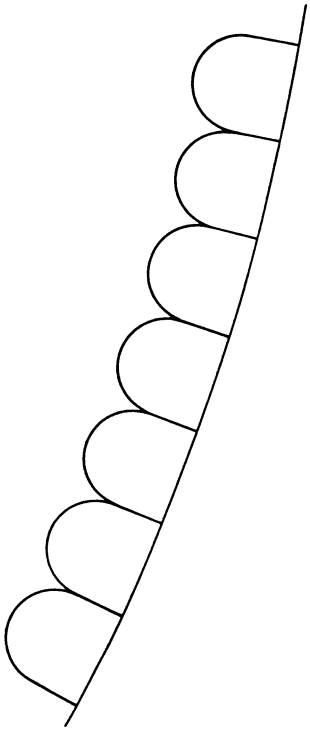
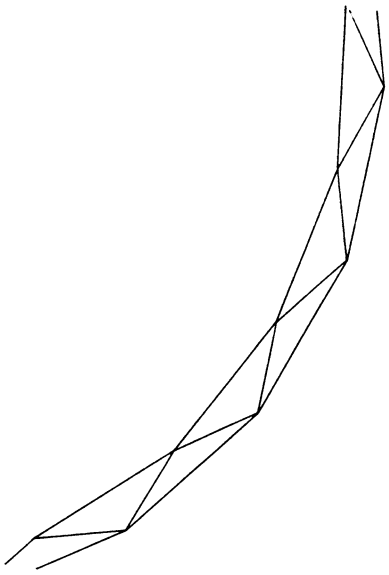
| Term | Form | Finish | Illustration |
|---|---|---|---|
| 22. Fluted bevel (also known as "thumb bevel") | A series of flutes (round cuts) meeting each other and running in from the edge of the glass | Polished unless otherwise specified |  |
| 23. Crossed bevel | A series of intersecting bevels | Polished unless otherwise specified |  |

**Table 1 — Edge work and bevelling**

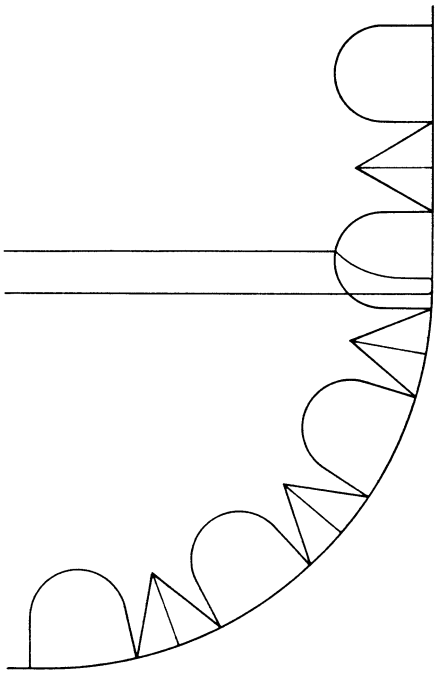
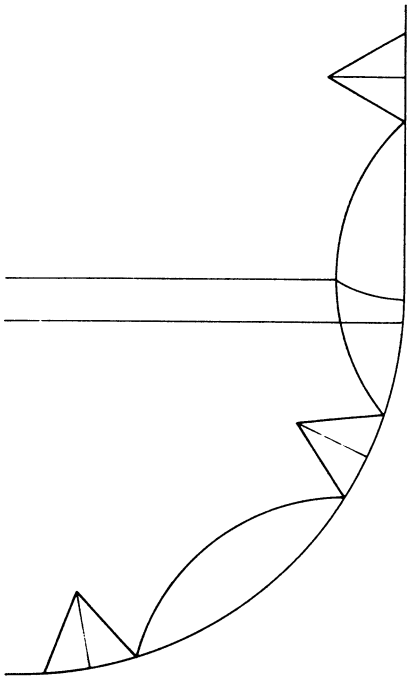
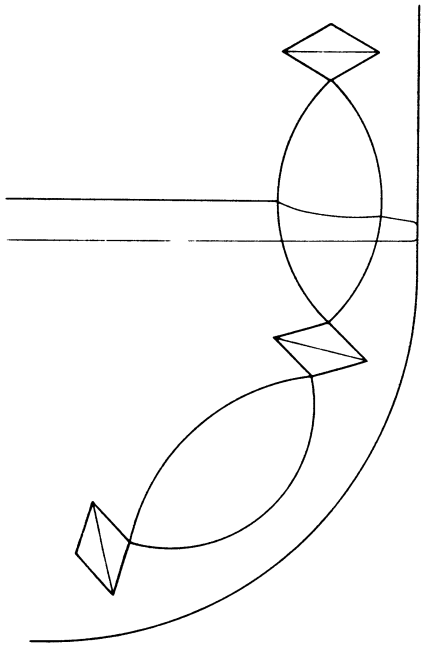
| Term | Form | Finish | Illustration |
|---|---|---|---|
| 24. Flute and mitre bevel (also known as "thumb and mitre bevel") | A bevel formed to the outline of a thumb with intermediate faceted mitres brilliantly polished | Polished unless otherwise specified |  |
| 25. Scallop and mitre bevel (also known as "spoon and mitre bevel") | A spooned bevel with intermediate faceted mitres brilliantly polished | Polished unless otherwise specified |  |

**Table 1 — Edge work and bevelling**

| Term | Form | Finish | Illustration |
|---|---|---|---|
| 26. Festoon bevel | A plain bevel having super-imposed on the line of intersection of the bevel with the surface of the glass a series of brilliant cut shallow grooves interspaced with deep brilliant cut faceted diamond shaped mitres | Polished unless otherwise specified |  |

## 3 Obscuring processes

**3.1 General.** These processes involve treatment of the whole or part of the surface of glass after manufacture, whereby vision through the glass is obscured to a varying degree, and the light-diffusing properties of the glass are increased. Decorative effects are also obtained by these processes.

**3.2 Sandblasting.** A process whereby the surface of glass is obscured by means of a jet of sand or other abrasive propelled against it. The finish will be fine, medium or coarse, according to the pressure of the jet and the nature of the abrasive used. The following terminology is used:

| Process | Terminology | Description |
|---|---|---|
| Sandblast obscuring | Plain sandblast: fine, medium or coarse | A surface obscured by sandblasting: in general a coarser surface than emery obscured and white in appearance. |
| | Shaded sandblast | Sandblast obscuration graduated in texture from clear to full obscuration. |
| | Peppered sandblast | A finely textured sandblast obscuration with a mottled effect. |
| | Gravé or modelled sandblast | Sandblasted to a series of depths. |

**3.3 Grinding.** A process whereby the surface of glass is obscured by grinding with an abrasive grit. In general, grinding produces a finer surface than sandblasting, the fineness depending on the nature of the abrasive grit used. The following terminology is used.

| Process | Terminology | Description |
|---|---|---|
| Emery obscuring | Emery obscured: fine, medium or coarse | A surface obscured by hand grinding: in general a finer surface than sandblast, but not so white in appearance. |

**3.4 Acid embossing.** A process whereby the surface of glass is obscured by treatment with hydrofluoric acid or its compounds. The degree of obscuration and the character of the surface produced depend upon the number of treatments with acid and the form of acid used. The following terminology is used:

| Process | Terminology | Description |
|---|---|---|
| Acid embossing | Clear stipple embossed: fine, medium or coarse | A slight obscuration with a texture finish. |

| | |
|---|---|
| Obscure stipple embossed: fine, medium or coarse | A full obscuration with a texture finish. |
| White acid embossed | One acid treatment giving full obscuration without texture. |
| White acid and tone embossed (sometimes called "satin" or "velvet" finish) | Two acid treatments giving full obscuration without texture. |
| White acid and two-tone embossed | Three acid treatments giving full obscuration. |
| Acid embossed and ground | One acid treatment and hand grinding to give full obscuration. |

NOTE "Brights" are any portions of the glass that are not treated with acid and that form part of the design.

## 4 Silvering

A process whereby silver is deposited on the glass and covered or coated with a protective medium. The term "silvering" is also used to describe the deposition on glass of other metals, e.g. "gold silvering", "copper silvering", etc.

## 5 Gilding

A process employed largely for lettering and decorative work, whereby leaf metal such as gold leaf is applied to the surface of glass and coated with a protective medium.

## 6 Staining or painting, and firing

A process whereby glass is first coated with a fusible pigment, and subsequently fired so that the colour becomes permanent.

## 7 Bending

**7.1 General.** All forms of annealed flat glass can be bent. Subject to certain limitations, laminated bent glass and toughened bent glass can be produced.

NOTE Some types of annealed glass may exhibit changed characteristics in the process of bending (e.g. shade in some coloured glasses).

**7.2 Bending curves.** Bending curves in common use are as follows (see also Figure 3):

A. Curves that are bent to a given radius one way of the pane only, which applies to the whole length or width of the pane, and not to one part only, the depth of bend not exceeding one-eighth of the length of the bent side of the pane. Example: length of the bent side of the pane 2 400 mm, depth of bend 300 mm.

B. Curves that are bent more than one-eighth, but not exceeding one quarter of a circle, or about 1 in 5½. Example: pane 2 000 mm, depth of bend 350 mm.

C. Curves similar to B, but with one part flat, the flat part not exceeding one-third. Example: pane 1 800 mm, bend 1 200 mm, flat 600 mm.

D. Flat curves, with one part flat, the depth of the bent part not exceeding 1 in 12, and flat part one-half. Example: pane 1 800 mm, bend 900 mm, depth 75 mm, flat 900 mm.

E. Curves with the bent part not less than a 150 mm radius, and not exceeding one-quarter of a circle, and the flat part exceeding one-third, but not exceeding two-thirds. Example: pane 1 800 mm, bend 600 mm, flat 1 200 mm.

F. Curves that are bent beyond one-quarter of a circle, but not exceeding 1 in 4. Example: pane 2 000 mm, depth of bend 500 mm.

G. Curves similar to D, the depth of bent part not exceeding 1 in 12, and the flat part exceeding one-half, but not exceeding three-quarters. Example: pane 1 800 mm, bend 450 mm, depth 38 mm, flat 1 350 mm.

H. Angle curves, which have flat parts on each side, the centre not exceeding one-quarter of a circle, and the flat part not exceeding one-quarter of the bent part. Example: pane 2 000 mm, bend 1 500 mm, flat 250 mm each side, or about 125 mm on one side and 375 mm on the other.

J. Ogee curves, depth not exceeding 1 in 16. Example: pane 1 600 mm, depth of bend 100 mm.

K. Curves similar to E, with flat part exceeding two-thirds, but not exceeding five-sixths. Example: pane 2 400 mm, bend 400 mm, flat 2 000 mm.

L. Angle curves (radius not less than 150 mm) the centre not exceeding one-quarter of a circle, and the flat part exceeding one-quarter, but not exceeding three-quarters. Example: pane 1 800 mm, bend 450 mm, flat 675 mm each side, or 350 mm on one side and 1 000 mm on the other.

M. Curves that are bent beyond 1 in 4 but not exceeding one-half of a circle and with diameter not less than 300 mm. Example: pane 1 900 mm, depth of bend 600 mm.

N. Curves for double bends for circular dome lights, where the number of openings is not less than 12.

O. Curves for elliptical dome lights where the number of openings is not less than 16.

P. Curves for one piece circular dome lights, depth not exceeding 1 in 8. Example: diameter of circle after bending 1 200 mm, depth of bend 150 mm.

Q. Curves beyond one-half of a circle with equal straight parts on each side, the flat part not exceeding one-quarter, and diameter not less than 300 mm. Example: pane 1 200 mm, bend 900 mm, flat 150 mm each side, diameter about 550 mm.

R. Curves for one-piece elliptical dome lights, not less than 300 mm diameter or 150 mm depth of bend.

S. Curves not exceeding one quarter of a circle of each side (depth of bend not less than 150 mm), the bent part not less than one-third, and the flat part not more than two-thirds. Example: pane 1 800 mm, bend 300 mm each side, centre flat 1 200 mm.

T. Curves similar to N, with the number of openings less than 12, but not less than 6.

U. Curves similar to O, with the number of openings less than 16, but not less than 8.

**7.3 Domes.** Domes (see curve P) are usually made from 10 mm rough cast glass or wired cast glass in diameters rising by steps of approximately 150 mm from 600 mm to 1 800 mm.

Domes are also made rectangular in the following range of sizes.

| mm | mm |
|---|---|
| 600 × 600 | 1 200 × 1 200 |
| 750 × 750 | 1 350 × 1 350 |
| 900 × 750 | 1 500 × 1 050 |
| 900 × 900 | 1 500 × 1 500 |
| 1 050 × 1 050 | 1 800 × 1 200 |
| 1 200 × 600 | 1 800 × 1 800 |
| 1 200 × 900 | |

Other sizes can be produced but, with larger sizes, fixing will be more difficult and the manufacturer's recommendations should be obtained.

Owing to the method of manufacture, wired glass that is bent may develop fine cracks. Such cracks are not, however, detrimental to the safety and serviceability of the dome.

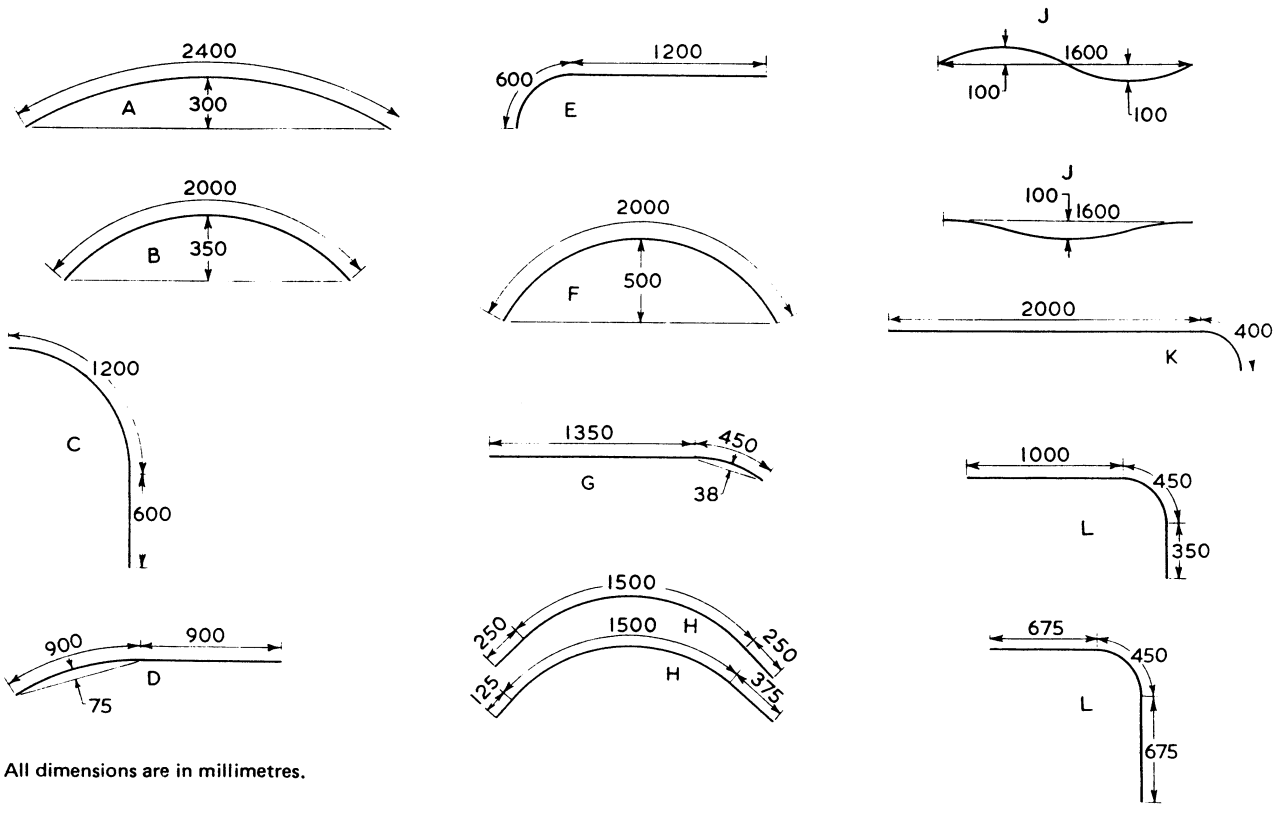
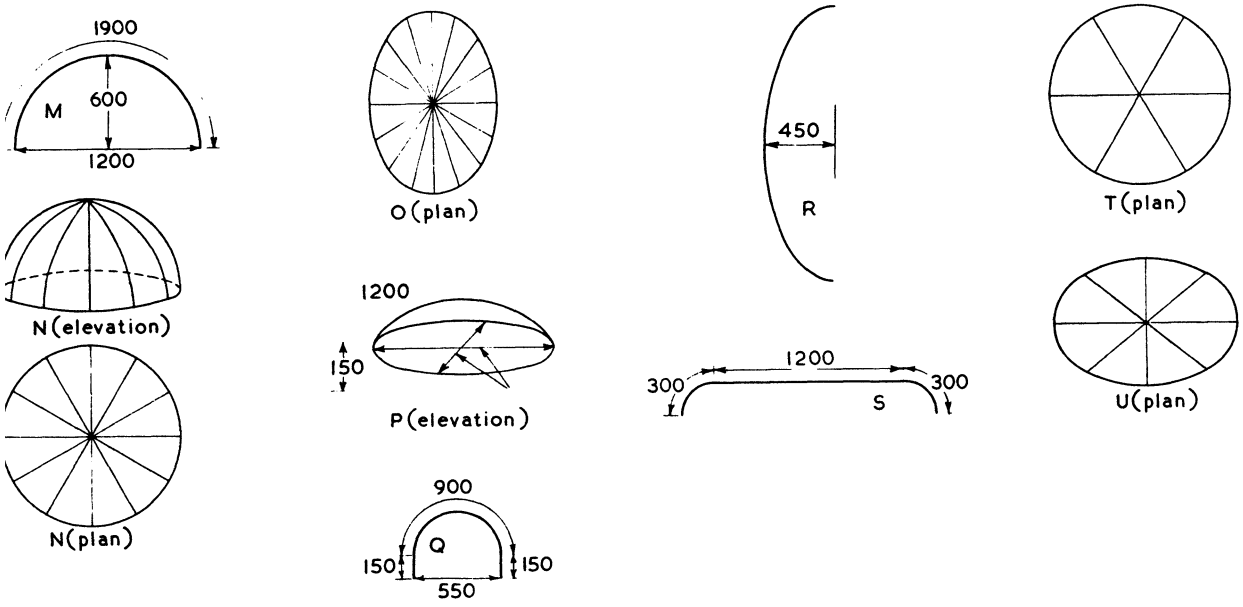



**Figure 3 — Standard bends for glass** *(continued)*




All dimensions are in millimetres.

**Figure 3 — Standard bends for glass** *(concluded)*

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