BS ISO 11485-1:2011

BSI Standards Publication

Glass in building — Curved glass

Part 1: Terminology and definitions

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National foreword

This British Standard is the UK implementation of ISO 11485-1:2011.

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A list of organizations represented on this committee can be obtained on request to its secretary.

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Glass in building — Curved glass —

Part 1: Terminology and definitions

Verre dans la construction — Verre bombé — Partie 1: Terminologie et définitions

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Foreword

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ISO 11485-1 was prepared by Technical Committee ISO/TC 160, *Glass in building*, Subcommittee SC 1, *Product considerations*.

ISO 11485 consists of the following parts, under the general title *Glass in building — Curved glass*:

— *Part 1: Terminology and definitions*

— *Part 2: Quality requirements*

— *Part 3: Requirements for tempered and laminated curved safety glass*[1)]

1) Under preparation.

INTERNATIONAL STANDARD **ISO 11485-1:2011(E)**

Glass in building — Curved glass —

Part 1: Terminology and definitions

1 Scope

This part of ISO 11458 specifies terminology and definitions for curved glass used in general building construction, furniture, display and various other non-automotive applications.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1
curved glass
bent glass (US)
sheet of annealed glass curved by a heating process

2.2
curved annealed glass
glass that is curved and then cooled slowly so that it recovers its initial mechanical characteristics

2.3
curved patterned glass
flat patterned glass that has been formed into a curved shape

2.4
curved wired glass
flat wired glass that is formed into a curved shape

2.5
curved insulating glass
two panes of curved glass that have been fabricated into an insulating glass unit

2.6
curved tempered glass
flat glass that is formed into a curved shape by heating above a specified temperature and then subjected to a rapid and controlled cooling process in order to give it greatly increased resistance to thermal and mechanical stress

NOTE In this International Standard, the term “tempered” also means “thermally toughened”.

2.7
curved heat-soaked tempered glass
tempered curved glass that has been post-processed using a specified heat-soak cycle with the intent of isolating possible nickel sulfide inclusions

2.8
curved tempered enamelled glass
curved tempered glass which has a ceramic frit fired into the surface during the tempering process

NOTE 1 After tempering, the ceramic frit becomes an integral part of the glass.

NOTE 2 The application of the ceramic frit may be by a continuous or discontinuous application, e.g, screen printing.

2.9
curved heat-strengthened glass
flat glass that has been formed into a shape and heat-strengthened

NOTE The specifications of curved heat-strengthened glass are under consideration.

2.10
curved chemically strengthened glass
flat glass that has been formed into a shape and chemically strengthened

2.11
curved laminated glass
assembly consisting of curved glass sheets joined together with cast-in-place resins or films

2.12
curved laminated tempered glass
assembly consisting of curved tempered sheets joined together with cast-in-place resins or films

2.13
curved safety glass
curved glass that in the case of accidental breakage, reduces the risk of cutting or piercing injuries and/or offers residual resistance by retaining the glass fragments

NOTE 1 The curved glass can be tempered or laminated for example.

NOTE 2 Curved safety glass is classified according to ISO 11485-2.

2.14
concave
“hollow” face of curved glass

2.15
convex
“bulge” face of curved glass

2.16
angle
α
angular measurement of a segment of a curve in degrees

NOTE See Figure 1.

2.17
inner radius
R_i
radius of concave face

NOTE See Figures 1 and 2.

2.18
outer radius
R_e
radius of convex face

NOTE See Figures 1 and 2.

2.19
arc
A
length of the curved portion

NOTE 1 See Figure 1.

NOTE 2 An arc is described as either interior arc (A_i) or exterior arc (A_e).

2.20
chord of the arc
C_a
line segment that connects end points of an arc

NOTE 1 See Figure 1.

NOTE 2 A chord is described as either an interior chord (C_{ai}) or an exterior chord (C_{ae}). The interior chord (C_{ai}) corresponds to the interior arc (A_i) and the exterior chord (C_{ae}) corresponds to the exterior arc (A_e).

2.21
rise
depth
F
segment between the middle of the arc of the circle and the middle of the chord that subtends the arc

NOTE See Figure 1.

2.22
girth
G
distance around the concave or convex surface measured perpendicular to the height including any flats

NOTE See Figure 1.

2.23
chord of the girth
C_g
line segment that connects end points of a girth

NOTE See Figure 1.

2.24
depth
P_r
maximal distance between the upper part of the girth (G) and the corresponding chord (C_d)

NOTE See Figure 1.

2.25
flat
B
flat segments forming a part of curved glass

NOTE See Figure 1.

2.26
length
L
dimension of the straight edge of the curved glass

NOTE See Figure 1.

2.27
thickness
T
nominal thickness of the final product

NOTE 1 In a curved insulating glass, the thickness is the sum of the thicknesses of the inner glass (T_i), the gas space (T_a) and the outer glass (T_e).

NOTE 2 See Figures 1 and 2.

2.28
plan
document containing the geometry of the product to be made

2.29
drawing
graphic details defining the geometry of the product to be made

2.30
lay out
representation of scale 1:1 of the curvature profile

2.31
template
three-dimensional reproduction at scale 1:1 to determine the dimensions and shape of the product to be made

2.32
cutting template
form (pattern) that facilitates accuracy in the glass forming process by providing the proper curved glass information for size, shape and contour

2.33
model
product in glass or other material at scale 1:1 that is an identical reproduction

2.34
curvature profile
geometrical shape of the curved part of the curved glass

2.35
shape accuracy
P_C
accuracy of the contoured form including curvature, arc(s), and even flats

2.36
cross-curve deviation
sag
deviation from a straight line or reference curve perpendicular to the curvature measured on the concave side

2.37
edge straightness deviation
warp
R_B
deviation from straightness of the straight edges of the glass

2.38
twist deviation
V
one or more of the corners of the glass are not in the same plane

2.39
optical distortion
slight deformation of the images seen in reflection or in transmission, inherent to the process of bending glass

2.40
displacement
d
misalignment at any one edge of the constituent glass panes making up the curved laminated and/or insulating glass

NOTE 1 d_1: displacement of one of the edges of the glass during the manufacture of laminated curved glass.

NOTE 2 d_2: displacement of the edges of the glass during the manufacture of insulating glass.

2.41
cold crack
crack caused by a difference of temperature of the surface in the cooling process

NOTE 1 For example, around tong marks or ring marks.

NOTE 2 Cold cracks appear in a whisker-like or hair-like shape in the case of curved tempered glass and in a shell shape appearing around crossing points of wires in the case of annealed curved wired glass.

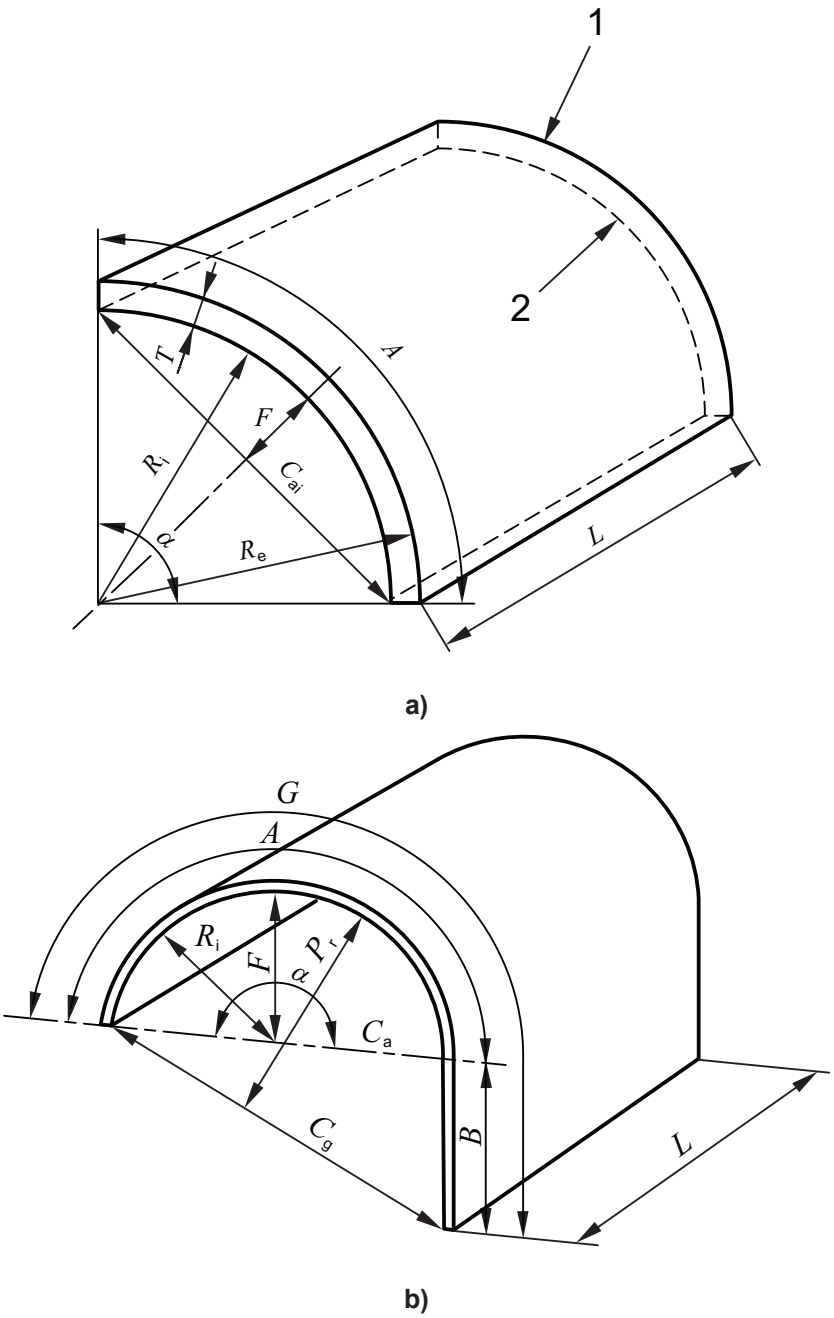
2.42
pock marks
process surface blemishes that consist of small, shallow areas, circular in shape, on the surface of the glass

2.43
ring marks
process surface blemishes that consist of shallow marks typically running along the perimeter of the glass surface

2.44
tong marks
slight indentations along the top edge of vertically curved glass, resulting from the method of holding or supporting the glass with tongs in vertical form

2.45
tools
elements particular to an order which allow the fabrication of curved glass

2.46
gauge
measurement tool for manufacturing and checking the curvature profile of the finished product

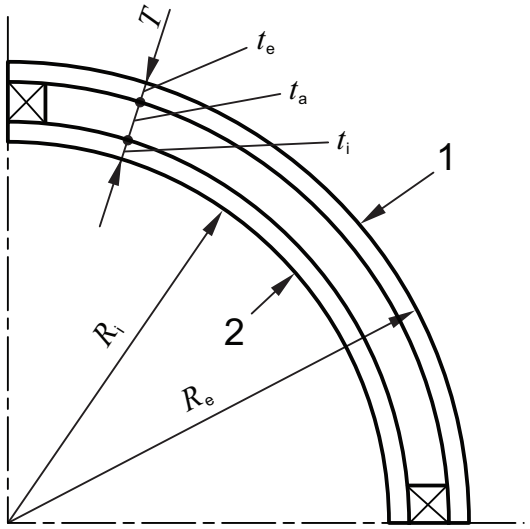


Key

1 bulge outer face (convex)

2 hollow inner face (concave)

Figure 1 — Examples of terms and dimensions



Key

1 convex part

2 concave part

Figure 2 — Thicknesses and radius of an insulating glass

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[1] ISO 11485-2, *Glass in building — Curved glass — Part 2: Quality requirements*

[2] ISO 12543 (all parts), *Glass in building — Laminated glass and laminated safety glass*

[3] ASTM C1464-06, *Standard Specification for Bent Glass*

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