

# DIN EN 12150-1:2020-07 (E)

## Glass in building - Thermally toughened soda lime silicate safety glass - Part 1: Definition and description

---

<b>Contents</b>		<b>Page</b>
European foreword .....		4
Introduction .....		5
1	Scope .....	6
2	Normative references .....	6
3	Terms and definitions .....	7
4	Glass products .....	8
5	Fracture characteristics .....	9
6	Dimensions and tolerances .....	9
6.1	Nominal thickness and thickness tolerances .....	9
6.2	Width and length (sizes) .....	10
6.2.1	General .....	10
6.2.2	Maximum and minimum sizes .....	11
6.2.3	Tolerances and squareness .....	11
6.2.4	Edge deformation produced by the vertical process .....	12
6.3	Flatness .....	12
6.3.1	General .....	12
6.3.2	Measurement of overall bow .....	14
6.3.3	Measurement of "wave distortion and roller wave distortion" .....	15
6.3.4	Measurement of edge lift (for horizontally toughened glass only) .....	16
6.3.5	Measurement of perimeter deformation of glass produced by air cushion toughening process .....	17
6.3.6	Measurement of local distortion (for vertically toughened glass only) .....	18
6.3.7	Limitation on overall bow, roller waves and edge lift for horizontally toughened glass .....	18
6.3.8	Limitation on overall bow, wave and perimeter deformation for toughened glass manufactured by air cushion process .....	19
6.3.9	Limitation on overall bow and local distortion for vertically toughened glass .....	20
6.3.10	Other distortions .....	21
7	Edge and/or surface work, holes, notches and cut-outs .....	21
7.1	Warning .....	21
7.2	Edge working of glass for toughening .....	21
7.3	Profiled edges .....	22
7.4	Round holes .....	22
7.4.1	General .....	22
7.4.2	Diameter of holes .....	22
7.4.3	Limitations on position of holes .....	22
7.4.4	Tolerances on hole diameters .....	24
7.4.5	Tolerances on position of holes .....	24
7.5	Holes/others .....	25
7.6	Notches and cut-outs .....	25
7.7	Shaped panes .....	26
8	Fragmentation test .....	26
8.1	General .....	26

8.2	Dimensions and number of test specimens .....	26
8.3	Test procedure .....	26
8.4	Assessment of fragmentation .....	27
8.5	Minimum values from the particle count .....	28
8.6	Selection of the longest particle .....	28
8.7	Maximum length of longest particle .....	28
9	Other physical characteristics .....	29
9.1	Optical distortion .....	29
9.1.1	Thermally toughened soda lime silicate safety glass produced by vertical toughening ....	29
9.1.2	Thermally toughened soda lime silicate safety glass produced by horizontal toughening	29
9.2	Anisotropy (iridescence) .....	29
9.3	Thermal durability .....	29
9.4	Mechanical strength .....	29
9.5	Classification of performance under accidental human impact .....	30
10	Marking .....	30
Annex A (informative) Curved thermally toughened soda lime silicate safety glass .....		31
Annex B(informative) Alternative method for the measurement of roller wave distortion .....		32
B.1	Apparatus .....	32
B.2	Method .....	32
B.3	Limitations .....	33
B.4	Alternative use of apparatus .....	33
Annex C(informative) Examples of particle count .....		34
Annex D(informative) Risk of spontaneous breakage of toughened glass due to nickel sulfide inclusion .....		37
Bibliography .....		38