

# DIN 18008-4:2024-12 (E)

## Glass in building - Design and construction rules - Part 4: Additional requirements for barrier glazing

---

<b>Contents</b>		<b>Page</b>
Foreword .....		5
1	Scope .....	6
2	Normative references .....	8
3	Terms and definitions, symbols and units .....	8
3.1	Terms and definitions .....	8
3.2	Symbols and units .....	9
3.2.1	Latin capital letters .....	9
3.2.2	Latin small letters .....	9
3.2.3	Greek small letters .....	9
4	Construction products .....	10
5	Application conditions .....	10
5.1	Verification of edge protection .....	10
5.2	Effectiveness of edge protection strips .....	10
5.3	Category B glazing .....	11
6	Effects of actions and verification .....	11
6.1	General .....	11
6.2	Ultimate limit state for static actions .....	13
6.2.1	General .....	13
6.2.2	Persistent/transient design situation (GZT-P) .....	13
6.2.3	Accidental design situation (GZT-A) .....	14
6.3	Ultimate limit state for impacts .....	14
6.3.1	General .....	14
6.3.2	Verification of edge protection fulfilled .....	15
6.3.3	Verification of edge protection not fulfilled .....	15
Annex A (normative)	Verification of the impact resistance of glazing through building component tests .....	16
A.1	Pendulum impact test .....	16
A.2	Penetration test .....	20
A.3	Test report .....	21
Annex B (normative)	Constructions with experimentally verified impact resistance .....	22
B.1	Linearly supported glazing units of Categories A and C .....	22
B.2	Point-fixed glazing units of Categories A and C .....	24
B.3	Linearly supported glazing Category B .....	26
Annex C (normative)	Verification of impact resistance of glass structures by calculation .....	28
C.1	Calculation principles .....	28
C.1.1	General .....	28
C.1.2	Design conditions .....	28
C.1.3	Exposure to stress .....	28
C.1.4	Resistance .....	28

C.1.5	Verification of impact resistance of insulating glass units .....	29
C.1.6	Verification of impact resistance of laminated safety glass .....	29
C.1.7	Overlaying of impact loads with other actions .....	29
C.2	Simplified verification procedure .....	29
C.2.1	Calculation principles .....	29
C.2.2	Exposure to stress .....	30
C.2.3	Verification .....	30
C.3	Verification by means of fully dynamic transient simulation of impact event .....	32
C.3.1	General .....	32
C.3.2	Verification .....	32
C.3.3	Proof .....	36
<b>Annex D (normative) Verification of impact resistance of supporting structures .....</b>		<b>37</b>
D.1	Linear support structures .....	37
D.1.1	Screwed fastenings .....	37
D.1.2	Other types of fastening .....	37
D.2	Point-fixed support structures .....	37
<b>Annex E (normative) Verification of edge protection by component testing .....</b>		<b>38</b>
E.1	General .....	38
E.2	Test procedure .....	38
E.3	Test report .....	38
<b>Annex F (normative) Effective edge protection, verified by testing .....</b>		<b>42</b>
<b>Bibliography .....</b>		<b>43</b>
<b>Figures</b>		
Figure 1	-- Examples for Categories A, B and C .....	7
Figure 2	-- Verification for Category A .....	11
Figure 3	-- Verification for Category B .....	12
Figure 4	-- Verification for Category C .....	13
Figure A.1	-- Diagram of pendulum impact apparatus .....	16
Figure A.2	-- Detail of impact body .....	17
Figure A.3	-- Examples of impact surfaces .....	19
Figure A.4	-- Testing apparatus for penetration test .....	21
Figure B.1	-- Permissible deviations from the rectangular shape illustrated by the example of a glazing unit supported on two sides .....	22
Figure B.2	-- Dimensions and configuration of point-fixed glazing .....	25
Figure B.3	-- Permissible deviations from rectangular shape .....	27
Figure B.4	-- Schematic diagram of Category B glass parapet .....	27
Figure C.1	-- Impact transmission coefficient for glass sheets linearly supported on two sides depending on the equivalent stiffness $k_{Glasplatte}$ .....	31
Figure C.2	-- Acceleration sequence of the pendulum body in the case of impact against a rigid wall .....	32

Figure C.3 -- Acceleration sequence of the pendulum body in the case of impact in the centre of a glass sheet supported on four sides with the dimensions 876 mm × 1 938 mm, glass thickness $t = 8$ mm .....	33
Figure C.4 -- Main stress sequence in the centre of a glass sheet on the side less likely to receive impact in the case of mid-sheet impact against a glass sheet supported on four sides with the dimensions 876 mm × 1 938 mm, glass thickness $t = 8$ mm .....	34
Figure C.5 -- Acceleration sequence of the pendulum body in the case of mid-sheet impact against a glass sheet supported on two sides with the dimensions 700 mm × 1 000 mm, glass thickness $t = 8$ mm, span 1 000 mm .....	35
Figure C.6 -- Main stress sequence in the centre of a glass sheet in the case of mid-sheet impact against a glass sheet supported on two sides with the dimensions 700 mm × 1 000 mm, glass thickness $t = 8$ mm, span 1 000 mm .....	36
Figure E.1 -- Location of impact points for a hard impact, illustrated by the example of a horizontal glass edge .....	39
Figure E.2 -- Location of impact points for a hard impact, illustrated by the example of a vertical glass edge .....	40
Figure E.3 -- Definition of surface of the edge and corner of the edge .....	41
Figure F.1 -- Edge protection .....	42
<b>Tables</b>	
Table A.1 -- Pendulum drop heights $h$ for the categories for various scenarios .....	18
Table B.1 -- Linearly supported glazing units with verified impact resistance .....	23
Table B.2 -- Point-fixed glazing units with verified impact resistance .....	25
Table C.1 -- Modification factors $k_{mod}$ for impact stress with light impact .....	29