

2019

ertexVSG

for buildings and other structures



ertl-glas.at

➤ **ertex** LAMINATED SAFETY GLASS (LSG)

Flat or bent glass, may be coloured, consisting of two or more intermediate panes with an intermediate layer that serves for retaining the glass fragments in case of breakage, offering residual load capacity, and reducing the risk of cutting or stab injuries.

Built with safety



EGGER
GLAS

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ertex VSG Spektral

Transparent LSG with coloured PVB laminate

An almost infinite colour spectrum can be achieved by combining or overlapping the different layers.

Basic colour system – available in twelve standard intermediate layers:

0.38 mm intermediate layer – please take into account the inherent colour of the primary materials used (e. g. float glass).



Further coloured intermediate layers

OPAQUE: absolute black and polar white
TRANSLUCENT: cool white

Opaque coloured solutions with colours with polar white (opaque white) central core applied to both sides.

A transparent standard PVB layer is applied to coloured LSG made of thermally bonded components (min. 0.76 mm PVB).

ertex laminated safety glass

Conformity

ertex LSG is manufactured including factory production control as per ÖNORM EN 14449, and demonstrably meets the characteristics laid down in the European Construction Products Regulation, and is put into circulation with CE label.

Product variations and surface finishes

- available both in standard industrial dimensions for cutting to size and as a tailor-made product with bespoke dimensions
- made of colourless or coloured float glass and/or Low-E coated float glass
- with sound insulation properties (VSG sound)
- made of thermally bonded components
- with **ertex PRINT** and/or **ertex COLOR** (ceramic colour coating)
- as glass with light-diffusing properties within the layers (translucent intermediate layer)
- with silicon cell networks (photovoltaics)
- with coloured intermediate PVB layer
- as curved glass
- in combination with cast glass/ornamental glass (on request)

Technical Data

> Glass thicknesses:

4 mm to 70 mm
(standard compounds)

> Production sizes:

made of normally cooled float glass
6000 x 3210 mm

made of tempered or thermally toughened glass
6000 x 3000 mm
min. diagonal length 460 mm

> Maximum weight per piece:

1500 kg

The application 101:

- Fall protection glazing
- Attack-resistant glazing
- Lift shafts
- Ball-proof glazing
- Walk-on / drive-on glazing
- Pressure-resistant underwater glazing
- Horizontal glazing
- Insulated glazing units (IGU)
- Photovoltaics – glass-glass foil module
- Point-mounted applications
- Supporting structures (beams + stabilisers)
- Semi-finished products for insulated glass constructions
- Partition walls with sound insulation properties
- Glass cabinets
- Weather protection walls
- Double-skin façades

Function, technology & design

ertex LSG sound insulation products

The sound insulation of LSG essentially depends on factors, such as the weight of glass panes and the arrangement of intermediate layers.

Basic rules: The lower the pane stiffness, the higher the sound insulation. In general, the more asymmetric the

glazing unit configuration is, the greater the sound reduction index, as the resonant frequencies for the individual panes are different. The glass has been standardised to the spectrum-weighting values C and C_{tr} (ÖNORM B 81 1.5) to adjust sound insulation measures to specific standard noise sources.

Sound insulation PVB layers provide vibration damping for single glass panes.

Safety properties of **ertex LSG** with sound insulation laminate "sound control" (SC) laminate: PVB-SC offers practically the same safety features as common standard PVB.

LSG with standard PVB as compared to LSG SOUND CONTROL (SC)

LSG compound glass/PVB/glass	PVB R _w (dB)	PVB "SC" R _w (dB)	C/C _{tr}
4/0.76/4	34 dB	37 dB	-1/-3
5/0.76/5	35 dB	38 dB	0/-2
6/0.76/6	37 dB	39 dB	0/-2
8/0.76/8	38 dB	41 dB	-1/-3
10/0.76/10	39 dB	42 dB	0/-3
12/0.76/12	40 dB	43 dB	0/-3

ertex LSG SOUND CONTROL

	R _w (dB)	thickness	C/C _{tr}
Type 11/38	38 dB	11 mm	-1/-3
Type 14/40	40 dB	14 mm	-1/-3
Type 19/41	41 dB	19 mm	-1/-3
Type 23/43	43 dB	23 mm	-1/-3

Areas of application



Photo: Martin Steinkellner

Architecture: Dipl.-Ing. Claire Braun, MEng

Glass beams with load-bearing function



All-glass showcase for highest demands



Glass balustrade clamped on one side only



ertex LSG – The slim and functional line



As per standard testing with a drop height of up to 1200 mm



After back swing as per the applicable standard from a height of 100 mm

Thin LSG withstands dynamic exposure ("soft impact")

CONCLUSION

With a continuous linear support on all sides, 5 mm LSG/thermally toughened glass reaches the highest load class with the following dimensions:
877 x 1940 mm

Classification (ÖNORM EN 12600) as **fall protection glazing: 1B1**

Resilient lightweight against manual attacks



1. Impact from a height of 6 m



Appearance after the 2nd impact



Test passed – no holes in the glass

CONCLUSION

6 mm LSG/thermally toughened glass withstands the stress as per the applicable standard, the threefold impact of a 4 kg

ball made of polished steel, diameter 100 mm. The free drop height is 6 metres.

Classification (ÖNORM EN 356) as **attack-resistant glazing: P3A**

Group of Companies



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