



AbZ Z-70.3-143

AbZ Z-70.3-170 Laminated glass pane with shear coupling

GEWE-safe® advance / advance-S

Greater safety for structural flexibility

It is not only in large properties, but also in the area of building within existing structures that there is an increasing desire to replace existing façade elements made of single layer safety glass with laminated safety glass (LSG). Such types of project often cause high costs for the renewal or reinforcement of the substructure. The solution is provided by GEWE-safe® advance/advance-S, a special safety glass with particularly low weight and very good residual carrying capacity after glass breakage.

With the two laminated safety glasses, GEWE-safe® advance/advance-S, special ionoplast intermediate layers are processed for structural elements in structural glass construction, which have high, crystal-clear transparency and stability. That means they are five-times stronger and up to one hundred times stiffer than commercial films made of polyvinyl butyral (PVB). This composite material is laminated with different glass in a conventional manufacturing process.

GEWE-safe® advance/advance-S stands for high load-bearing capacity, transparency as well as edge stability and is therefore suitable in particular for overhead glazing as well as large-size façades, stairways, parapets or floor elements. Especially with glazing with an open edge, long-term studies have shown that with composites, no signs of ageing occur such as delamination or yellowing, and there is excellent resistance to UV and climate exposure.

The main protective functions offered by GEWE-safe® advance/advance-S

- Injury protection
- Safety barriers
- Noise protection
- better residual capacity than conventional laminated safety glasses



The very efficient combination of low thickness and high load-bearing capacity with GEWE-safe® advance-S is possible because an ionoplast composite intermediate layer is capable of transferring high shearing forces because of its tremendous strength and stiffness. Laminating results in a shear connection that displays almost monolithic behaviour under a great variety of loads with the same glass thicknesses. Due to this behaviour, the German Institute for Structural Engineering (DIBt) granted the “General Building Inspectorate Approval” as a “Laminate Safety Glass with a Shear Coupling” (AbZ Z-70.3-170). Hence, GEWE-safe® advance-S is considered to be a load transmitting element in the calculation of the load-bearing behaviour. Besides these cost-reducing benefits (outstanding safety with low glass thickness and hence low weight as

well as very high edge stability), the time-consuming and cost-intensive obtaining of an “Approval in individual case (ZiE)” is not applicable. The certification of GEWE-safe® advance-S as a laminated safety glass with shear coupling applies to laminates in which at least two flat glass panes are connected by means of the specific intermediate layer.



Please note: Information on further technical details (for example compatibility with compatible silicon, edge stability or temperature dependence) can be obtained on request from our technical support.

Technischen Eigenschaften	
GEWE-safe® variations	<ul style="list-style-type: none"> • LSG manufactured from float glass • LSG manufactured from 2 x TSG** • LSG manufactured from 2 x HSG** • LSG-accessible • Creative laminated glass (Coloured films, printed films – only with ZiE)
Glass thickness of the individual panes	2 mm bis 19 mm
Standard film thickness	1,52 mm***
Dimensions*	Minimum: 400 mm x 250 mm Maximum: 2.800 mm x 6.000 mm
Maximum package strength	78 mm
Design	Via individual grinding and screen printing techniques as well as combination possibilities with other materials (e.g. fabric – only with ZiE)
Verification	<ul style="list-style-type: none"> • All glazing is visibly and durably labelled accordingly • Self/External monitoring
UV Absorption	The applied films absorb the UV rays from the sun and protect the goods that are located behind the films

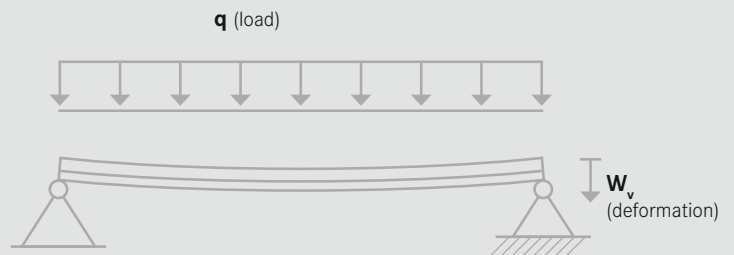
* Standard dimensions, variations are available upon request

** With and without ceramic screen printing

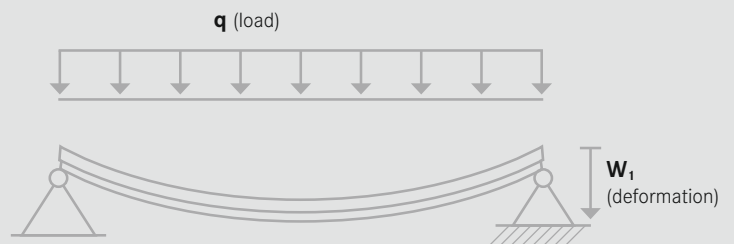
*** other film thicknesses possible on request

Deformation behaviour as a comparison

Deformation of a laminated glass pane with full shear coupling



Deformation of a laminated glass pane without shear coupling



In practice, laminates with this ionoplastic composite material have less than half as much sagging as conventional PVB film under the same high load, and therefore have almost the same behaviour as single layer safety glass in the same thickness.

