

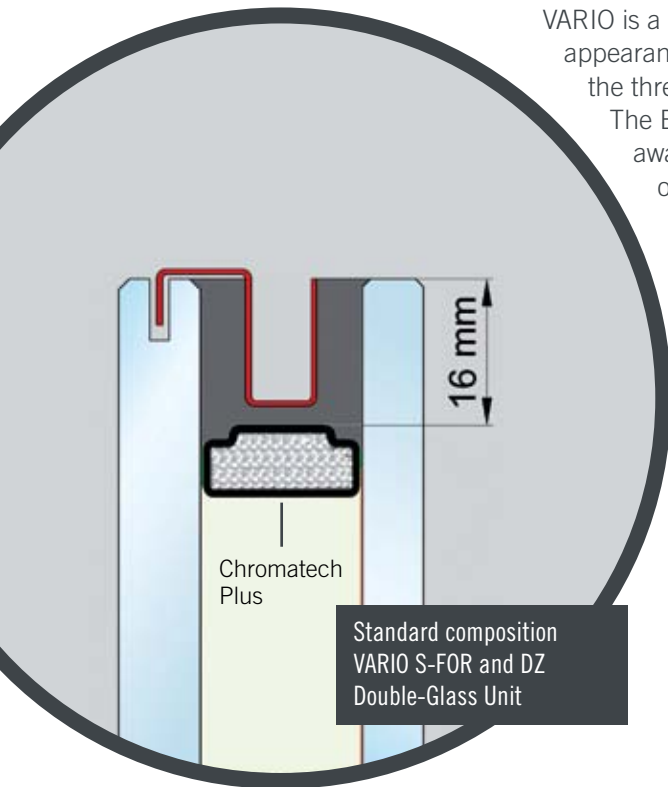
EKELT.GLAS

Now with
European
Technical
Approval
ETA-10/0362

VARIO

Simple all-glass appearance

VARIO – the elegant system with European Technical Approval ETA-10/0362



VARIO is a ready-to-install insulating glass system with the typical appearance of an all-glass facade. Simply screwed onto the sub-frame, the three system variations fulfill all national safety requirements. The European Technical approval [ETA-10/0362] which was awarded at the end of 2010 stands for more than 15 years of successful international practical applications at ECKELT.

The VARIO-Elements are only mechanically fixed back to the facade construction by means of the integrated anchors and a threaded restraint. The glass is pressed against the inner gasket. The outer seal is achieved – as with conventional SSG glazing – by means of a flush-faced permanent weatherseal. Visible glass restraints or cover plates can be omitted without substitute.

The seal's flush faced system with glass surface makes VARIO also for the roof- and inclined glazing area applicable.

Glass type	Aufbau	$R_{w,p}$	C, C_{tr}	L_T	g-value	U_g -value
CLIMAPLUS N double	8 mm SECURIT-H, edges fine ground 16 mm Air, Silicone edge seal 6 mm SECURIT	39 dB	-2, -4	78	59	1,1
CLIMATOP N triple	8 mm SECURIT-H, edges fine ground 16 mm SZR (A), Air, Silicone edge seal 6 mm SECURIT 12 mm SZR (A), Air, Silicone edge seal 6 mm SECURIT	No report	No report	68	51	0,6

L_T ... Light transmission τ_V to DIN EN 410 in %

g-value ... Total energy transmittance to DIN EN 410

U_g -value ... to DIN EN 673 in $W/m^2.K$, valid only for vertical glazing

Dimensions in accordance with ETA-10/0362

max. 2500 x 5000 mm
min. 400 x 800 mm

Weight

max. weight dependent
on the individual support system



VARIO S-FOR and DZ
on Jansen transom mullion system VISS-SG

Applicable for different
transom-mullion subframes

**VARIO S-FOR and VARIO DZ fulfill the requirements of ETAG 002.
Integrated safety restraint into the edge secures the outer sheet.**

The VARIO Insulating glass system is basically suitable for every transom-mullion subframe which has CE certification, and is an economical solution for facades, entrances and skylights. The consequential flush-faced system avoids disturbing dirt residues from dripping rain water and greatly simplifies cleaning and maintenance.

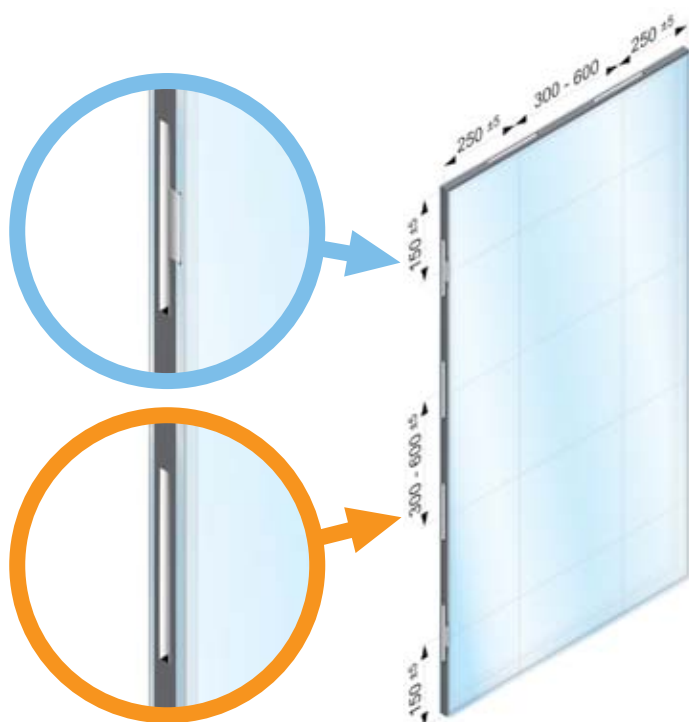
The elegant appearance is enhanced by the standard use of black stainless steel spacer bars. These spacer bars are also warm-edge technology and reduce the thermal bridges at the edge of the unit. The highest of requirements in modern architecture for insulation and solar control can be achieved using a variety of glass combinations. Even triple glazed VARIO is available.

An additional advantage is the improvement of the acoustic insulation by means of the constructive de-coupling of the individual sheets compared to conventional glazing. E.g. the VARIO standard composition of 8/16/6 with R_w of 39 dB proven. Normal insulating glass with 8/16/6 achieved only 37 dB, – that is 2 dB less noise reduction.

VARIO S-FOR and VARIO DZ are subject to patent protection according to EP 0628672.

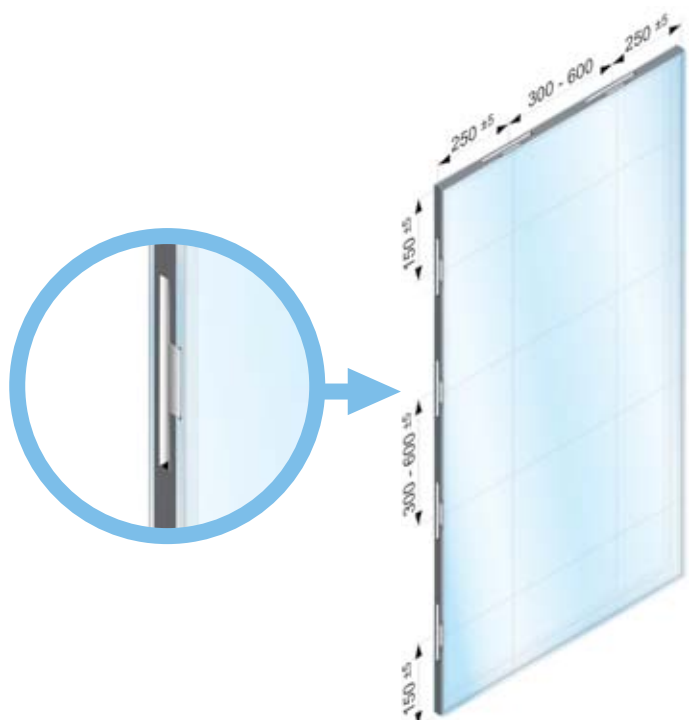
ETA [European Technical Approval] and its relevance for practical construction

Products which are not anchored in any European Standard cannot receive CE marking. An ETA was requested for VARIO based on the foundation of the Guideline ETAG 002 [Guideline for the European Technical Approval of bonded glass constructions]. Now that the approval has been granted, it governs the applications for this product, sets specific dimensional details and prescribes the necessary self and independent control procedures to ensure the quality requirements. Therefore, VARIO is approved for use in all EU countries. The national authorities still set their own safety standards. In order to comply with the known safety standards, ECKELT offers three approved technical variations.



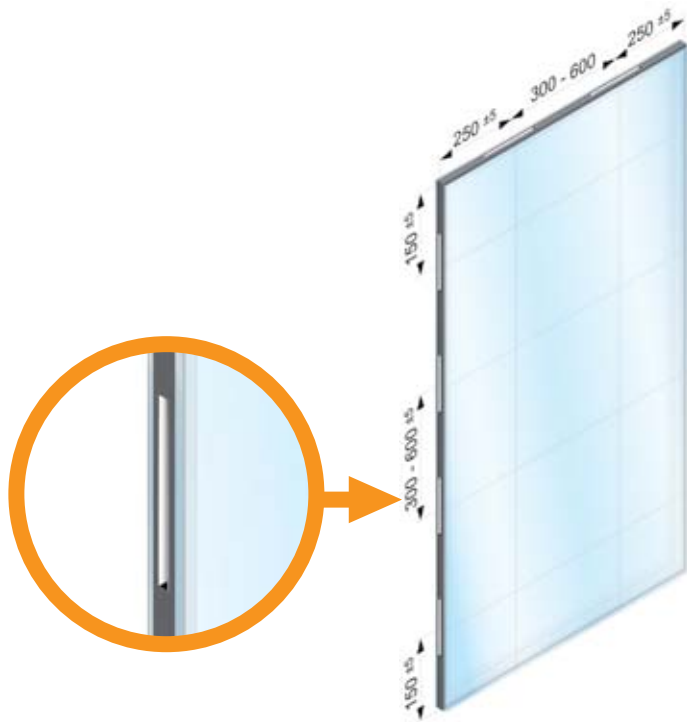
VARIO S-FOR in accordance with Austrian requirements

VARIO S-FOR fulfills Type I of the ETAG 002 and the ÖE building material register, characteristic are four glass-integrated safety clips and anchors to accept the threaded connector. Glass supports for self-weight transfer are necessary in the sub-frame system.



VARIO DZ for requirements in Germany

VARIO DZ fulfills Type I of ETAG 002, characteristic are integrated safety clips in accordance with the structural requirements. Anchors without safety clips are not typically foreseen. Glass supports for self-weight transfer are necessary in the sub-frame system. For applications under a height of 8 m, safety clips are not required and can therefore be used as per VARIO II.



VARIO II for countries without requirements for safety clips or applications which do not necessitate such safety requirements

VARIO II fulfills Type II of ETAG 002, characteristic are glass integrated anchors for the accommodation of threaded connectors. Glass supports for self-weight transfer are necessary in the sub-frame system.



The approved system with all-glass appearance without disruptive outer clips

The ETAG 002 requirements can be completely fulfilled with VARIO



Reliable and secure designing with VARIO: Facade systems, roof and inclined glazing

VARIO is a ready-to-install insulating glass system where the inner sheet is bonded to the outer sheet with the precision of classical SSG technology. In addition, glass-integrated mechanical restraints and safety anchors are included which are required to simply connect the units back to the CE-marked structures.

Particular statutory requirements are applicable to such constructions.



Permissible construction systems

Statutory requirements for SSG applications in Austria

In the building material list ÖE published by the Austrian Institute for Building Technology [OIB], the use of building products is determined. Only building products which have the European Technical Approval [ETA] may be used.

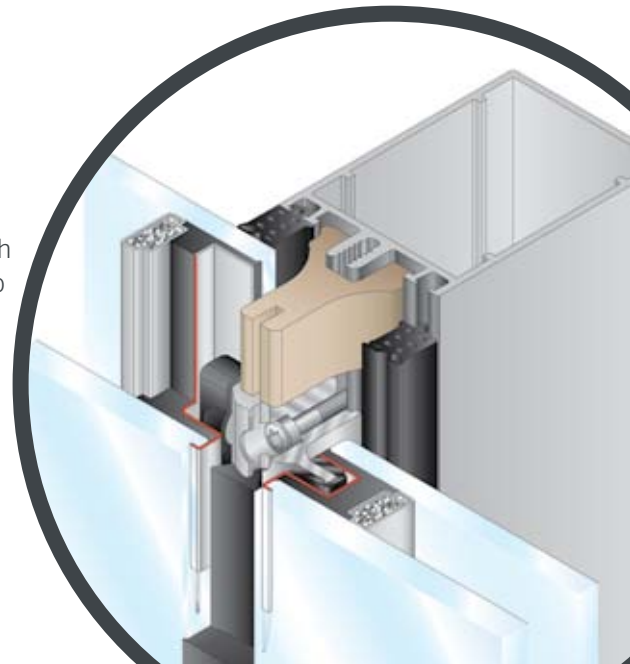
VARIO as a building element in facades with ETA permission

The System VF 50 RR SG, from Hueck Hartmann, possesses an ETA, which not only allows systems with continuous bonded aluminium frames but also on the contrary thereto, insulating glass which has only point-fixed connections to the frame. VARIO DZ or even VARIO II is an integral part of the system. VARIO DZ is the only product which has a totally flush outer surface - undisturbed by external mechanical restraints and one which remains economical.

Advantages

- Polygonal facades are possible
- Large sizes up to 2500 x 5000 mm
- Also approved as barrier glazing up to 2500 x 3300 mm

The VARIO building elements can be used without restriction as either Type I or in Germany Type II of the ETAG 002, in accordance with the individual country requirements, with the facade system VF 50 RR SG.



VARIO S-FOR and DZ on Hueck-Hartmann transom-mullion system VF 50 RR SG with ETA-09/0335

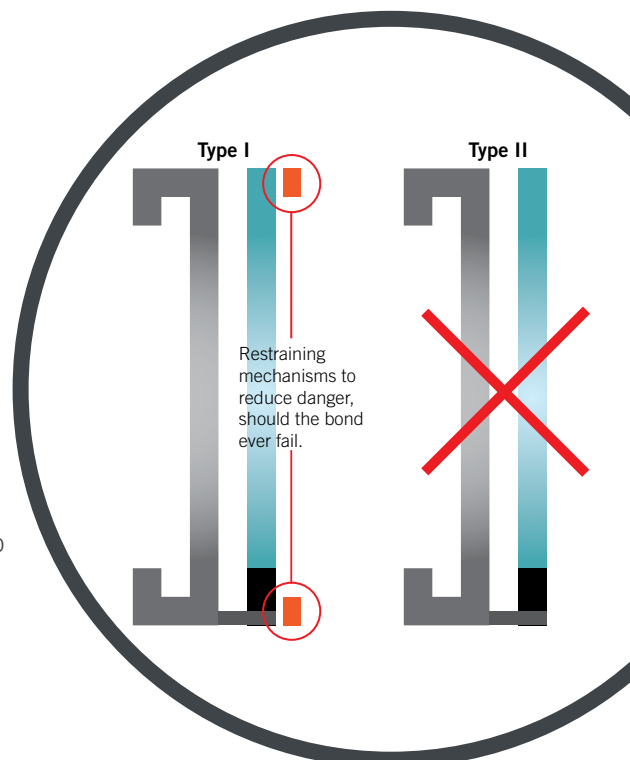
VARIO application notes for Austria

VARIO S-FOR fulfills with ETA-10/0362 all of the requirements of the ÖE building material register:

- Type I - with support of self-weight.
- Restraining mechanisms [safety clips] which are needed to minimise danger due to potential failure of the sealant – regardless of the height of installation. Type II is not permitted in Austria.
- All individual sheets are of fully tempered safety glass or laminated safety glass.

The application is designed for vertical facades and those with an inward slope of up to 10°. It is also permitted for roof glazing with slopes of 7 - 90° from the horizontal.

The supporting structure [transom-mullion systems] is generally required to support the self-weight of the glazing with suitable supports in accordance with point 2.1.5 of ETA-10/0362. Should no tested connectors for the transom-mullion system be available, then they are to be designed by the facade manufacturer in accordance with point 2.1.6.





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