

# FASCO® – Facade System

Glued glass elements for modern wood- and metal construction

Certainly a great connection.





Friedrich Knapp  
Company founder

## Crystal Clear with a Profile

As a family-owned business, we have been the market specialist for connecting systems for timber structures for 25 years. With the new FASCO®-Facade System, we are thrilled to present you with a "small revolution". Starting as a research project with the Austrian Institute of Wood Research (Holzforschung Austria) on the topic of "Glued Glazing Systems", we developed a system that effectively uses the loadbearing characteristics of wood and glass as a reinforcing structural element and is also extraordinarily economical.

With the FASCO®-Facade System already several projects have been realized, including a post-modern residential building in Austria. This marked the first time the FASCO®-Facade System was used. The result impressively demonstrates that perfect looks, reliable static and rational installation are capable of being united. All project participants were amazed by the implementation of the construction project.

Our R&D does not stand still. Together with the Vienna University of Technology, HFA and industry partners, we participate in an international research project on „Wood-Glass Composite Structures“.

The FASCO®-Facade System has received awards such as the ACR-Cooperation Award and a certificate of recognition from the Karl-Ritter-von-Ghega-Preis and is presented by a variety of national and international publications to the public.

Sincerely,

Friedrich Knapp



The FASCO®-Facade System was honored by awards such as the ACR-Cooperation Award and a certificate of recognition from the Karl-Ritter-von-Ghega-Preis.

## FASCO®-Profile | Glued glass elements for modern wood- and metal construction

- Slim view allows demanding architectural solutions
- The efficient processing reduces installation time by approx. 20 % compared to clamping profiles.
- No stiffening required - replaces windbracings or steel structures
- The inner glass panel of the insulating glass takes over the building stiffening
- Low thermal conductivity by using fiberglass instead of aluminum
- Scientifically proven performance (2001-2008)
- Silicone-weather-joints allow plane and uniform facade surfaces
- Applied for construction licensing



FASCO®-Profile of fiberglass reinforced plastic (FRP): UV-resistant, low thermal expansion, low thermal conductivity, moisture resistance and high strength at low weight stands out for its building material. Two FASCO®-Profiles for face width 60 and 80 mm.

Tested and approved silicone adhesive (SG - structural glazing) with experience in facade applications for over 40 years: excellent good elastic behaviour reduces internal stresses, insensitive to humidity and temperature fluctuations and UV light.

Inside at least 8 mm glass thickness to meet the static load effect. Maximum window size of 3.5 m. Additional requirements for the glass thickness and type of glass by the building authorities must be observed.

Stainless steel screws for lasting corrosion protection.

Substructure in wood and timber materials according to EC5, reinforced concrete according to EC2, steel according to EC3 or aluminium according to EC9.

# FASCO®-Profile

## Applications

FASCO® is suitable for two applications:

- | Non-bearing fixed glazing that does not limit the glass dimensions and structural class, starting with a visual width of 60 mm.
- | Static bearing glazing for reinforcing the structure (implemented according to the KNAPP®-Manual, in Germany with a permit in individual cases) with a visual width of 80 mm due to the load. Design posts offer a very elegant solution for this.

The high-quality adhesive connection is essential between the glass and FASCO®-Profile of certified and authorized installers.



KNAPP®-Manual

## Requirements on the Structure and Geometry of the WGC Element – FASCO®-Profile (load-bearing)

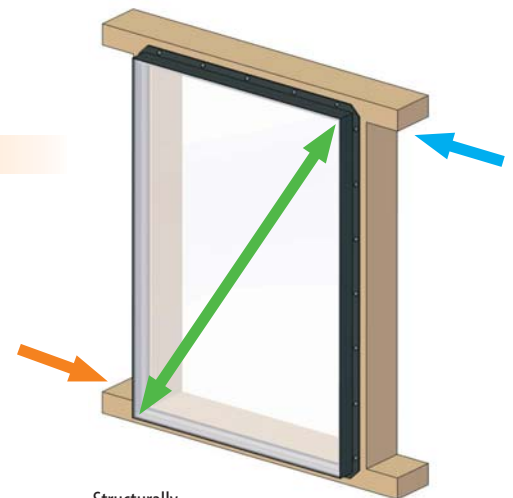
The following points are based on the KNAPP®-Manual, which was issued by the Austrian Institute of Wood Research for the use of wood-glass composite elements with a static function. Non-bearing fixed glazing is not subject to any of these limitations.

- | Ceiling height (height of a floor) construction of the fixed glazing.
- | No more than two floors may be reinforced with glazing.
- | Various formats of the glass elements are permissible, the most narrow and the most wide glass elements are measured.
- | Maximum length of the longer edge of the glass element: 3,5 metres
- | Minimum length of the shorter edge of the glass element: 1,0 metre
- | Length/height ration of the glass element: L:H = (1:1) to (2:1)
- | Gluing with audited 2K silicones (SSG)



## Glass panels – FASCO®-Profile (load-bearing)

- | Float glass, TVG or VSG according to the requirements of construction code.
- | 2 or 3 panel insulating glass with a bearing edge compound must be implemented according to EN 13022-1.
- | The fall protection must be ensured with mechanical brackets (according to regulations by the construction authorities)
- | The load of the weight of the glass is transferred by a blocking in the middle of the glass panel.



Structurally reinforcing glass

## Processing



1) On all four edges of glass FASCO®-Profiles are glued by the certified glass fabricators.



2) On site, the glass is evenly screwed to the bearing structure and is immediately load bearing and weathertight.

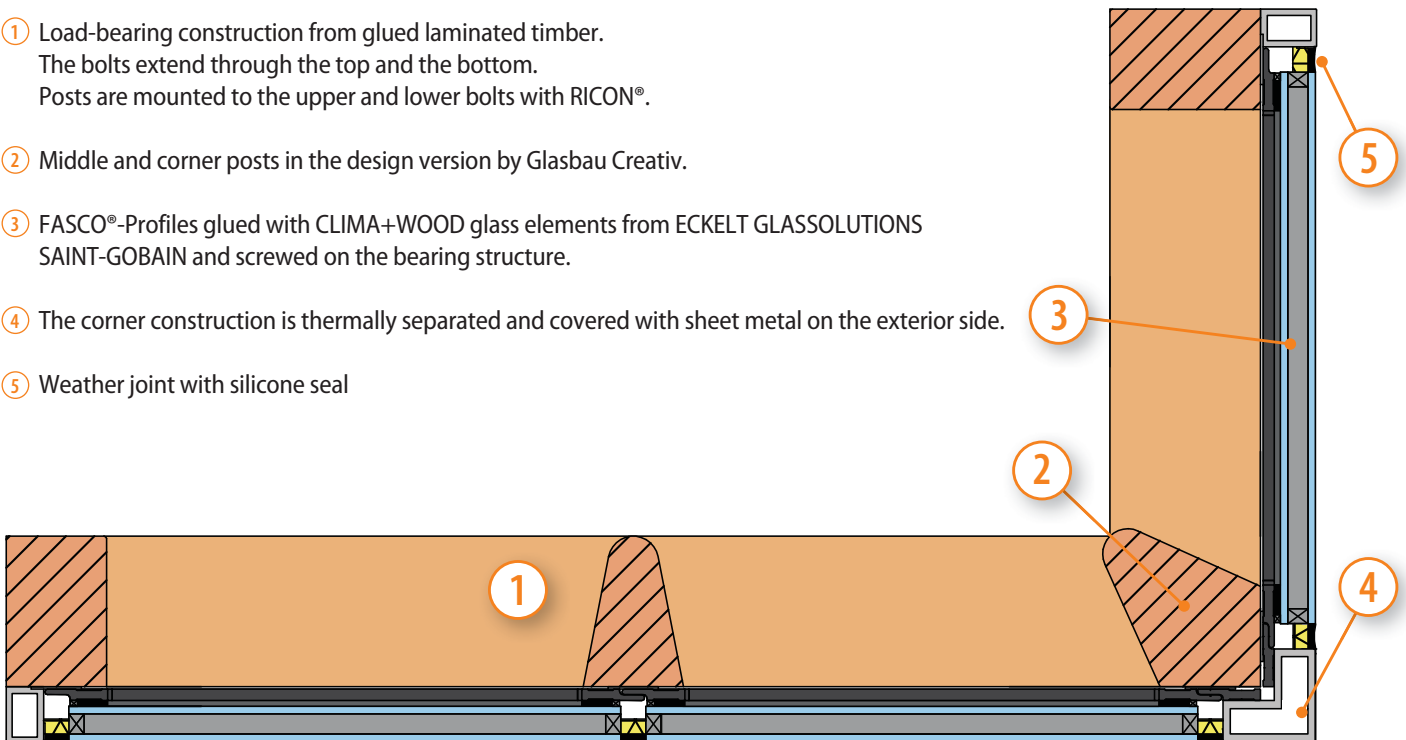


3) More glass elements are mounted with minimum widths of 60 mm or 80 mm.

## FASCO®-Profile

### Example of a Facade Section with FASCO®

- ① Load-bearing construction from glued laminated timber. The bolts extend through the top and the bottom. Posts are mounted to the upper and lower bolts with RICON®.
- ② Middle and corner posts in the design version by Glasbau Creativ.
- ③ FASCO®-Profiles glued with CLIMA+WOOD glass elements from ECKELT GLASSOLUTIONS SAINT-GOBAIN and screwed on the bearing structure.
- ④ The corner construction is thermally separated and covered with sheet metal on the exterior side.
- ⑤ Weather joint with silicone seal

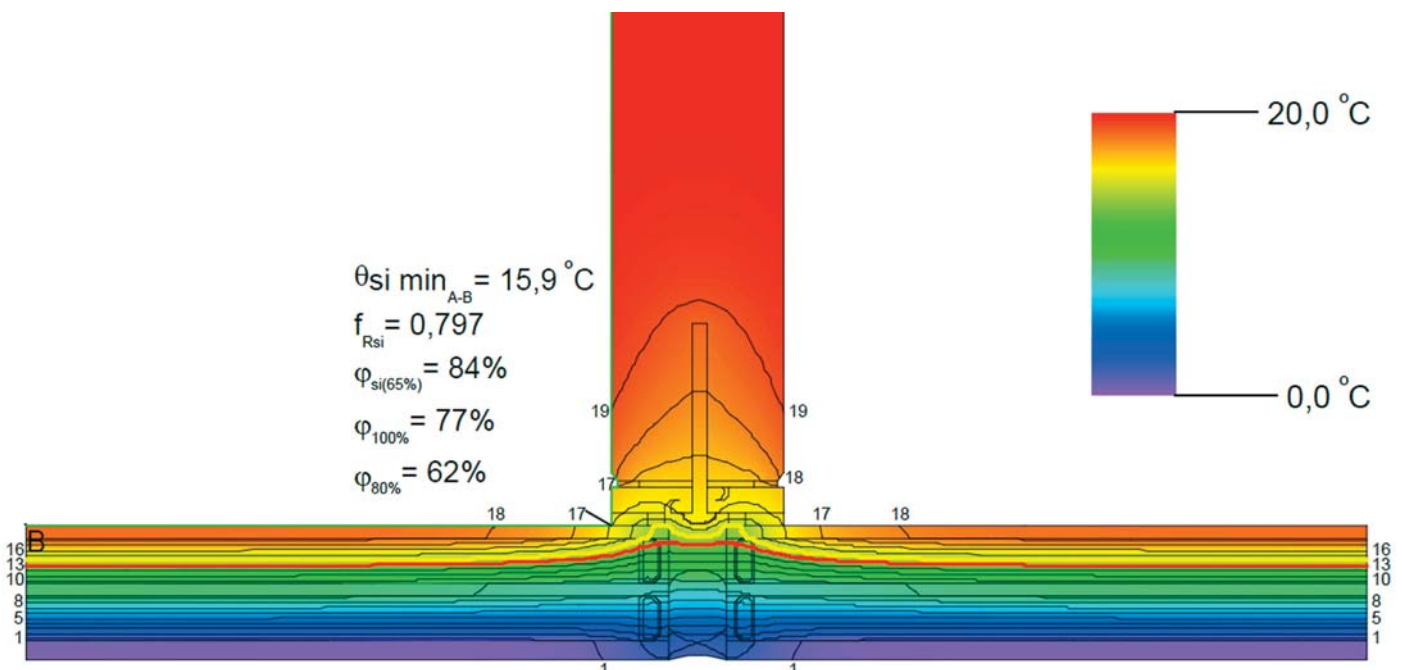


## FASCO®-Profile

### Isothermal illustration

Company: Knapp GmbH  
 Contract No.: 2010/2012  
 Description: Temperature field with isotherms and moisture proofing specifications

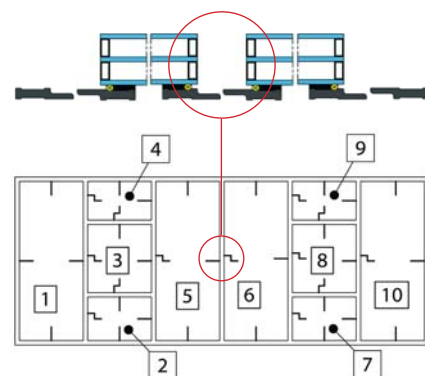
Date: 07.11.2012



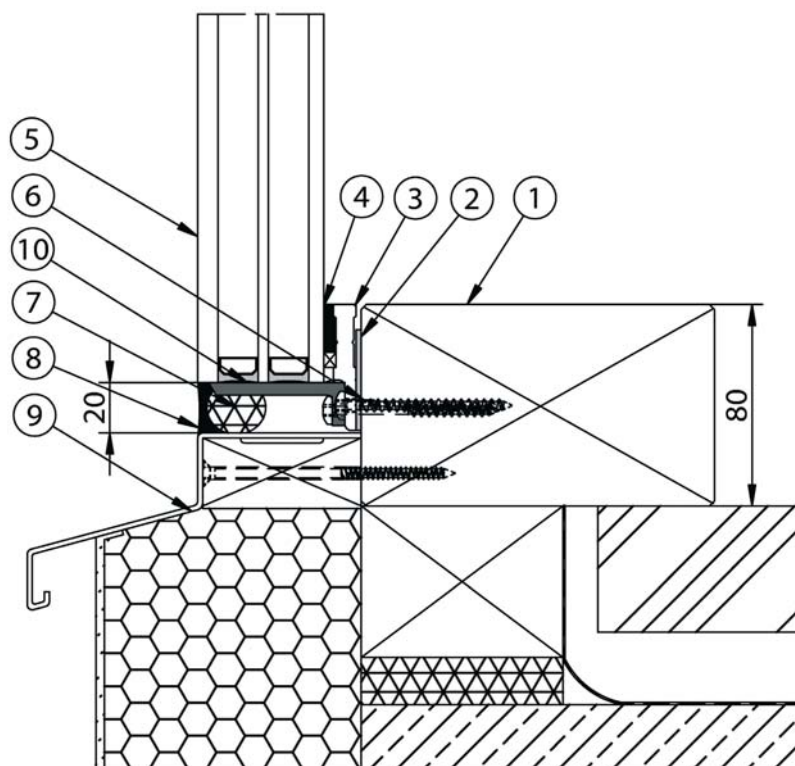
# FASCO®-Profile

## Detailed solutions

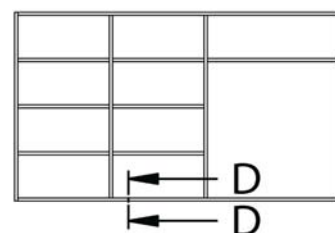
More FASCO® detail drawings (catalogue and DXF) can be found as a registered user on our website: [www.fasco.at](http://www.fasco.at)



### Section D-D | Base point connection: 3x glazing and weather joint



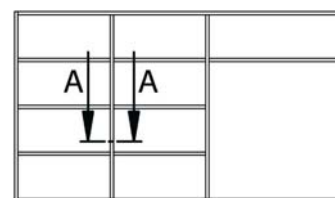
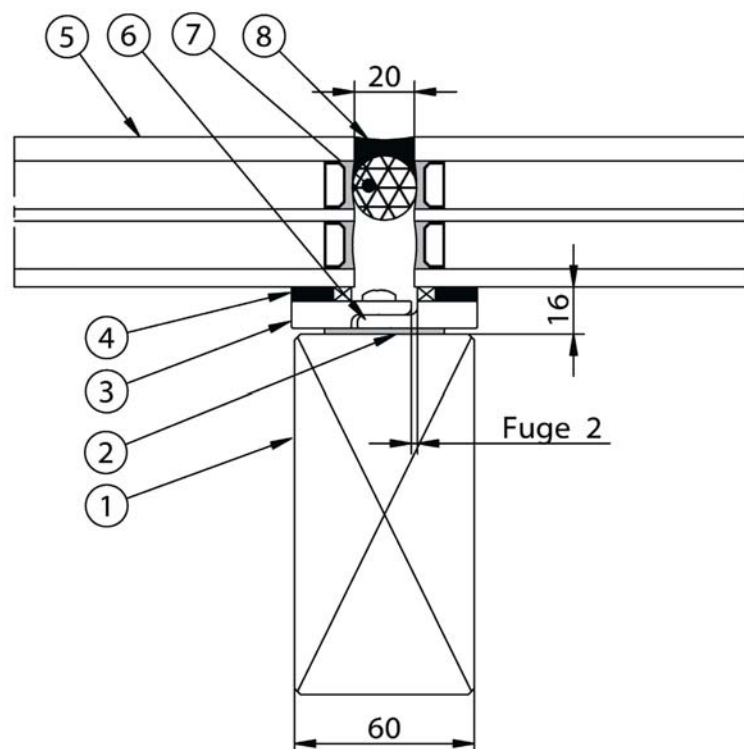
Insulating glass with glued FASCO®-Profile.



#### Base point connection: 3x glazing and weather joint

1.	Joint width	L = 60 mm
2.	Sealing tape	40x2 mm
3.	FASCO®-Profile	40x9 mm
4.	Bonding	
5.	3x glazing	
6.	Screw connection	5x70 mm, e = 120 mm
7.	Elastomeric foam round cord	
8.	Weather joint with silicone seal	
9.	Aluminium window sill	
10.	Support de vitrage GFK	

### Section A-A | Double connection: 3x glazing and weather joint



#### Double connection: 3x glazing and weather joint

1.	Joint width	L = 80 mm
2.	Sealing tape	40x2 mm
3.	FASCO®-Profile	40x9 mm
4.	Bonding	
5.	3x glazing	
6.	Screw connection	5x70 mm, e = 120 mm
7.	Elastomeric foam round cord	
8.	Weather joint with silicone seal	

## FASCO®-Profile

### Distribution channel

The Technical Sales of KNAPP® supports you in statics, with assembly instructions and recommends an adhesive manufacturer and the glass processing company. We accompany you throughout the entire project process, from planning through to execution.

Contact with KNAPP® sales

Technical consideration by KNAPP®

Offer for customer


Order and confirmation  
with delivery date

Project support by KNAPP®

Our calculation service does not replace any decrease in the structural analysis by a licensed structural engineer.

### Your personal contact

You have a project and want to use KNAPP®-Connectors? Benefit from our calculation service. Our engineers create as part of the project work a predimensioning of the recommendation for the matching connector.

Send us the details and loads connection of your building project and contact us!  [www.knapp-connectors.com/ad](http://www.knapp-connectors.com/ad)

With FASCO®-Profile and CLIMA+WOOD an elegant system solution for the fixed glazing paired with intelligent building stiffening at project Haselbach has been realized.



 **More information:**  
[www.knapp-connectors.com/references](http://www.knapp-connectors.com/references)

The efficient processing reduces installation time by approx 20 % compared to clamping profiles.



## FASCO®-Profile

### Selected reference projects



**Objekt:** Home in Haselbach (A); **Construction:** Solid wood construction made of plywood walls with static load-bearing fixed glazing; **Energy standard:** Passive house; **Year:** 2011; **Construction period:** 07/2011 – 03/2012; **Usable space:** approx. 150 m<sup>2</sup>; **General contractor:** Weierer Holzbau GesmbH, A-8842 Katsch / Mur, Nr. 55; **Architects:** Architekt Dipl.- Ing. Dr. techn. Karl-Heinz Schwarz, Enekelstraße 16, A-1160 Wien, [www.architekt-schwarz.com](http://www.architekt-schwarz.com); **Static:** Zivilingenieurbüro DI Hans Jörg Felkel, Schwabstraße 53, A-3030 Maria Anzbach; **Facades and window manufacturer:** Glas Bau Creativ Handels- und Produktionsges. m.b.H, Unterauerstr. 7, A-3370 Ybbs an der Donau, [www.glasbaucreativ.at](http://www.glasbaucreativ.at); **Glass Manufacturer:** Eckelt Glas GmbH, Resthofstraße 18, A-4400 Steyr, [www.eckelt.at](http://www.eckelt.at)



**Objekt:** Company building Fenster Gegg GmbH (D) Haslach, [www.gegg.com](http://www.gegg.com); **Year:** 2012; **Gluing:** Otto Chemie, [www.otto-chemie.de](http://www.otto-chemie.de)



**Objekt:** Solar Decathlon 2012, HTWG Konstanz Team ecolar (D)

**Objekt:** Masterpiece, facade structure of metal with FASCO®-Profile, Mirko Günther (D); **Year:** 2012



### Contact

+49 (0)89 / 904 75 56 0  
germanyinfo@knapp-connectors.com  
+43 (0)7474 / 799 10  
austriainfo@knapp-connectors.com

[knapp-connectors.com/contact](http://knapp-connectors.com/contact)



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## Concealed | Self-tightening | Demountable



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Sales in Austria and Export | Knapp GmbH | Wassergasse 31 | A-3324 Euratsfeld

Tel.: +43 (0)7474 / 799 10 | Fax: +43 (0)7474 / 799 10 99 | E-Mail: [austriainfo@knapp-connectors.com](mailto:austriainfo@knapp-connectors.com)

Sales in Germany | Knapp GmbH Niederlassung Deutschland | Saturnstraße 2 | D-85609 Aschheim

Tel.: +49 (0)89 / 904 75 56 0 | Fax: +49 (0)89 / 904 75 56 19 | E-Mail: [germanyinfo@knapp-connectors.com](mailto:germanyinfo@knapp-connectors.com)

KNAPP® en France | Tel. : +33 (0)6 19 98 37 48 | Fax : +33 (0)3 88 48 17 87 | E-Mail : [franceinfo@knapp-connectors.com](mailto:franceinfo@knapp-connectors.com)

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