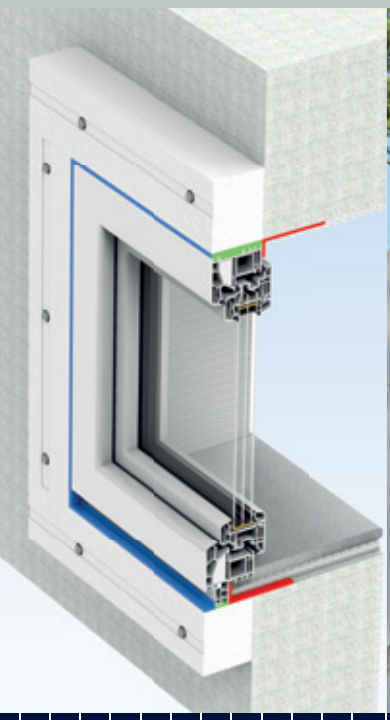
WINDOW TECHNOLOGY
DOOR TECHNOLOGY
AUTOMATIC ENTRANCE SYSTEMS
BUILDING MANAGEMENT SYSTEMS



WINDOW TECHNOLOGY – ORDER CATALOGUE

Construction Accessories – Fastening Technology
Approved systems for projecting installation

Edition 01/2016

- System 1: GU supporting consoles and GU retaining angles
- System 2: GU frame for projecting installation

Securing technology for you

Professional installation of window elements

We create benefits for you

With kind permission of Arndt Fenstertechnik GmbH & Co. KG

The energy balance of properties improves significantly when they are covered in a warm insulating layer. However, insulation not only changes the heat balance of a building, but also its structure: suddenly, the installation levels of windows and balcony-doors are no longer in masonry, but in the area of the insulation material. This cannot carry and transfer the loads.

Only a projecting installation with elements suitable for it solves the problem reliably: The construction carries the forces and transfers them into the masonry, so that the reveal is not loaded impermissibly due to tension or compression. Installation systems from the GU Group perform this demanding task particularly well. We have developed two systems for the projecting installation that are suitable for all profile depths and that can be used optimally with windows and balcony-doors made of PVC, timber, timber/aluminium, and aluminium profiles.

Approved systems for projecting installation

Table of contents

The standard solution

System 1: GU supporting consoles and GU retaining angles

The first system has been tested for safe transfer of loads by ift Rosenheim, as well as for heavy structural elements, and consists of the GU supporting consoles and GU retaining angles: They give windows and balcony-doors stability up to 250 kg. And because security is a top priority, the system has also been tested according to EN 1627 for their reliability in terms of burglar protection in resistance classes up to RC2. When it comes to installation, our innovative consoles offer the advantages of simple fixing to vertical masonry, variable fixing options as well as their outstanding connection to the composite system of thermal insulation.

The premium solution

System 2: GU frame for projecting installation

The GU frame for projecting installation and its components is our second system for a projecting installation. With the passive house certified door frame, structural elements can be mounted in the insulation plane without thermal bridges occurring. Even the installation of large and heavy windows or balcony-doors is possible with our frame for projecting installation, because it is tested for a load absorption of up to 579 kg. The door frame is also approved for use as burglary protection in accordance with EN 1627 and RC 2 and it has high performance in sound insulation – these are strengths that are increasingly gaining importance. As a genuine all-rounder, the GU frame for projecting installation proves itself, for example, when used in double-layer clinker facades: here it satisfies the demands for load absorption, thermal protection, windproofness and sound insulation with maximum efficiency.

Table of contents

System 1: GU supporting consoles and GU retaining angles

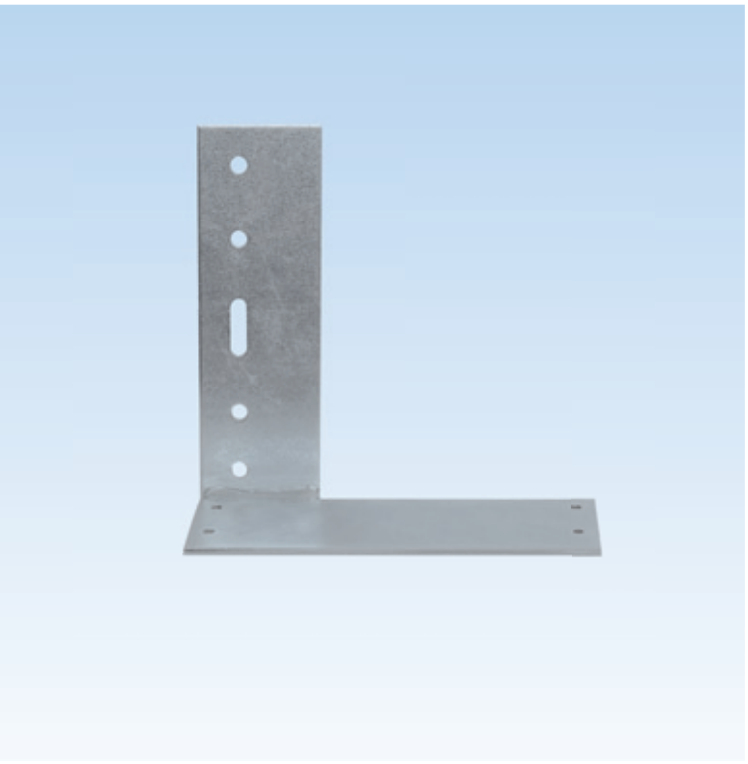
The standard solution

Professional installation of window elements

Advantages at a glance

- Optimum connection for exterior insulation finishing system (EIFS)
- High load-bearing capacity up to 250 kg (ift-tested)
- System tested for burglar protection up to RC 2 (according to EN 1627)
- Straightforward installation in masonry with range of fixing options
- All window installation fixing points as prescribed by the recognized rules of engineering can be achieved
- Installation not subject to tension and compression in the area of the reveal
- Suitable for all profile depths as well as frame materials made of timber, PVC and aluminium

GU supporting console, left-hand



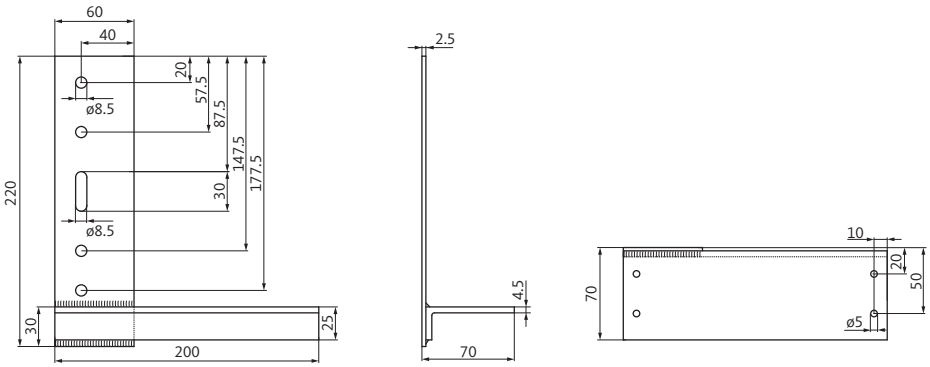
Product description

The left supporting console belongs to the lower fastening base. Due to their large supporting surface, they can absorb the load of the elements optimally.

For the quantity required, refer to our processing instructions on page 10

Order information

Designation	PU	Order number
GU supporting console, left-hand	1 pc	H-01515-00-L-0



GU supporting console, right-hand

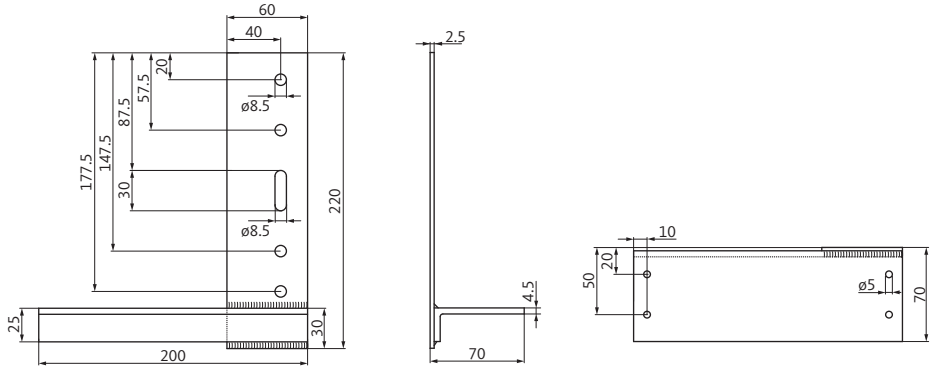
Product description

The right supporting console belongs to the lower fastening base. Due to their large supporting surface, they can absorb the load of the elements optimally.

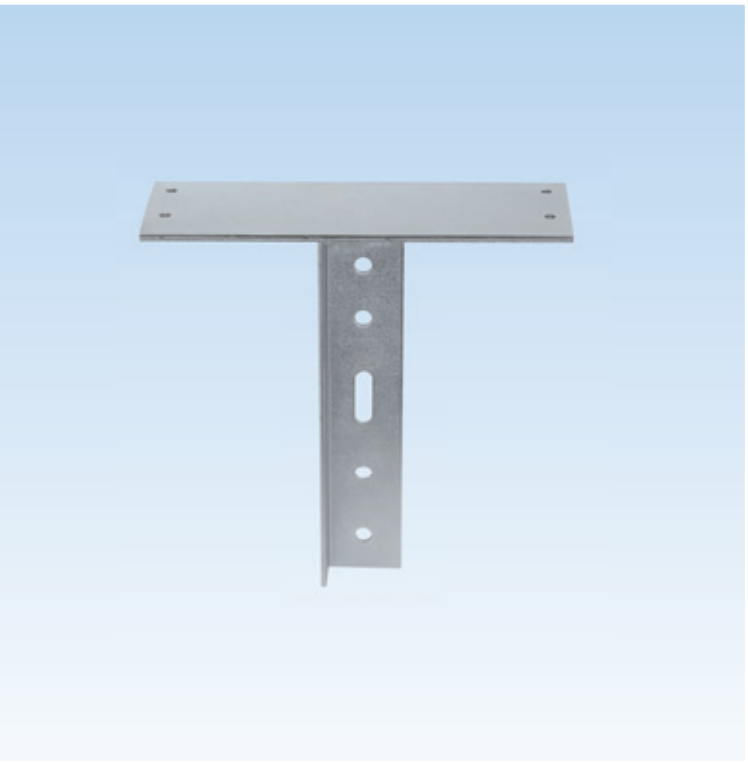
For the quantity required, refer to our processing instructions on page 10

Order information

Designation	PU	Order number
GU supporting console, right-hand	1 pc	H-01515-00-R-0



GU supporting console, centred



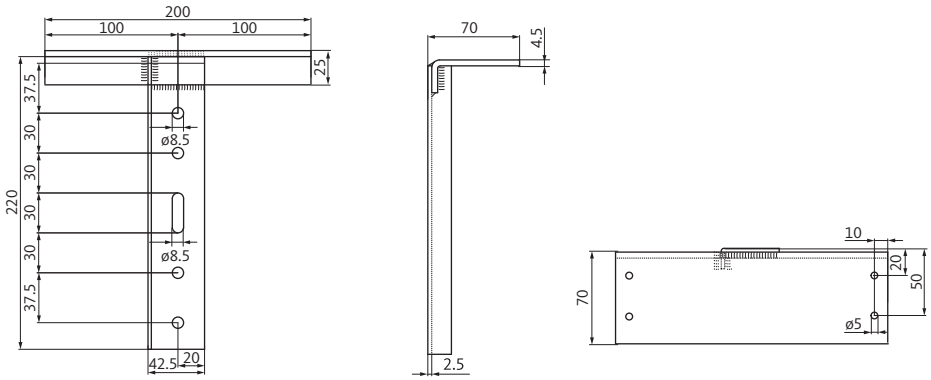
Product description

The centre supporting console is used for optimum lower load absorption of wide and coupled elements.

For the quantity required, refer to our processing instructions on page 10

Order information

Designation	PU	Order number
GU supporting console, centred	1 pc	H-01516-00-0-0



GU retaining angle

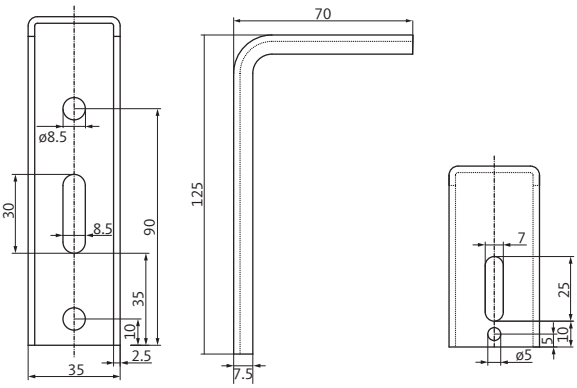
Product description

The retaining angles are used especially for fixing points on the sides and top.

For the quantity required, refer to our processing instructions on page 10

Order information

Designation	PU	Order number
GU retaining angle	1 pc	H-01517-00-0-0



Processing information

GU supporting consoles and GU retaining angles

The GU supporting consoles on the left and right and, where appropriate, the GU supporting console at the centre are aligned and fixed to the masonry in advance. The window or balcony-door frame is next, which is already prepared with the interior window sealing sheet. In addition to the GU supporting consoles, it is fixed to the GU retaining angles on the masonry. The oblong holes in the supporting consoles and retaining angles allow for quick and easy adjustment to the masonry. The GU retaining angles are critical for optimum installation of the component, because they absorb dead loads, live loads and wind loads.

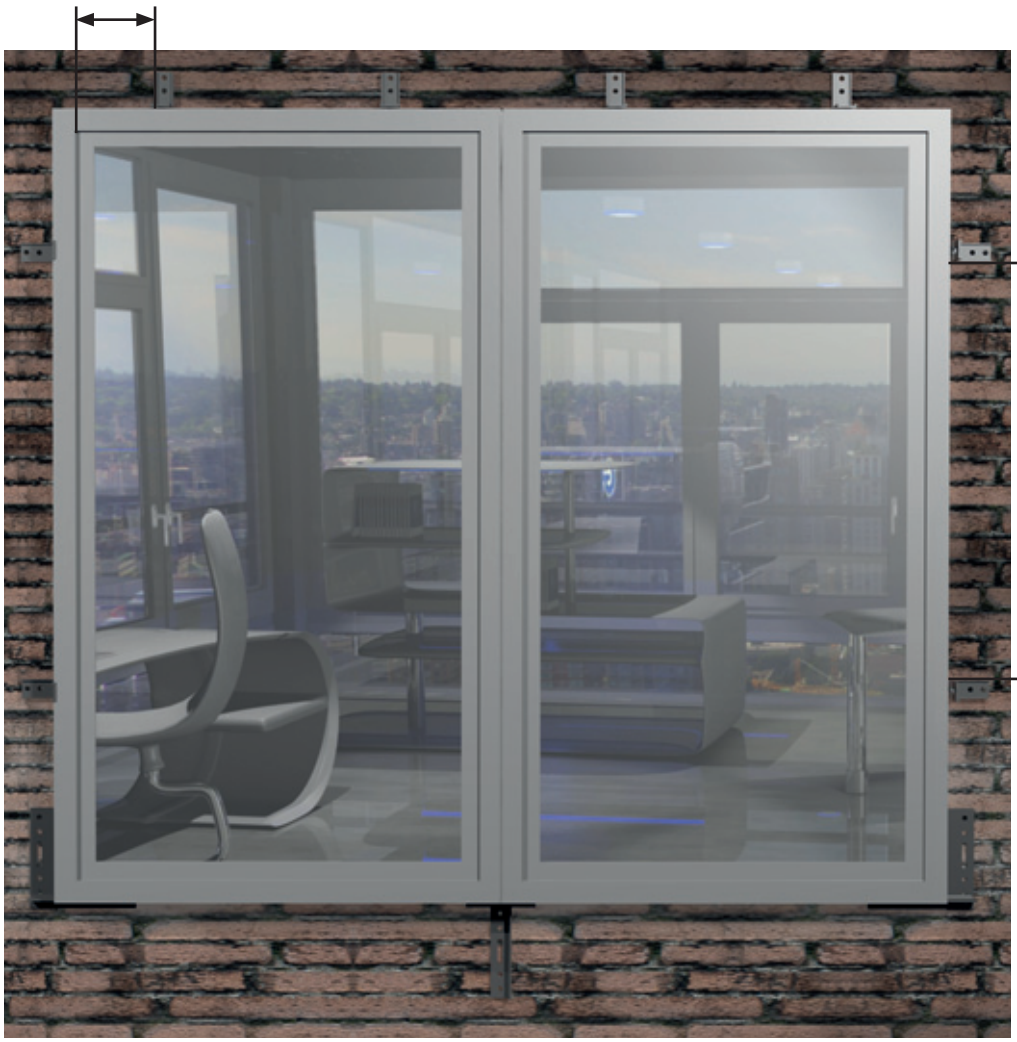
In the next step, the interior window sealing sheet is connected or bonded to the masonry.

Number of required GU support consoles and GU retaining angles

In principle, a right and a left GU supporting console should be used for window elements and only fixed with suitable screws and dowels. The installation material must be aligned to the surrounding wall system and to the edge distance.

The correct fixing points and the number of fasteners are important when installing windows and balcony-doors. The first fixing point should not exceed 100 to 150 mm from the frame inside corner. The distance between retaining angles may be max. 800 mm with timber or aluminium profiles and max. 700 mm with PVC profiles. The individual distance to be chosen and thus the required number of GU retaining angles is calculated from the size of the window element to be fitted and from the dead loads, live loads and wind loads acting on it.

Maximum 150 mm from the element corner



The maximum spacing* between retaining angles:

For PVC profiles	**≤ 700 mm**
For timber or aluminium profiles	**≤ 800 mm**

*** = Spacing of the fixing points and the number of GU retaining angles must be matched to the active forces and live loads (for example, dead weight, additional load, vertical and horizontal imposed load and wind load) acting on the window or balcony-door.**

Nachweis

Prüfung von Befestigungssystemen zur auskragenden Fensterbefestigung. Tragfähigkeit in Fensterebene.

Prüfbericht
Nr. 13-002225-PR01
(PB-K26-09-de-01)

ift ROSENHEIM

Auftraggeber: Gretsch-Unitas GmbH, Baubeschläge, Johann-Maus-Str. 3, 71254 Ditzingen, Deutschland

Produkt: Montagekonsolen, Haltewinkel zur auskragenden Fensterbefestigung

Bezeichnung: Montagekonsolen rechts, links, mitte, Haltewinkel

Leistungsrelevante Produktdetails: Befestigungssystem 1 Montagekonsole rechts / links Werkstoff S 235, Abmessung: 220 x 200 x 70 x 2,5 / 4,5 mm, Oberfläche: galv. verzinkt, Befestigungssystem 2: Montagekonsole mitte Werkstoff S 235, Abmessung: 220 x 200 x 70 x 2,5 / 4,5 mm, Oberfläche: galv. verzinkt, Befestigungssystem 3: Haltewinkel Werkstoff S 235, Abmessung: 125 x 70 x 35 x 2,5 mm, Oberfläche: galv. verzinkt,

Besonderheiten: -/-

Ergebnis

Probekörper	Krafteinleitung in mm	charakteristische Tragfähigkeit F_{Rk} [kN] bei Auslenkung δ_H [mm]		
		1,0	2,0	3,0
Konsole rechts/links	100 / 35	1,09	2,14	3,38
Konsole rechts/links	30 / 35	0,62	0,87	1,25
Konsole rechts/links	100 / 55	0,09	1,07	1,48
Konsole rechts/links	30 / 55	0,13	0,55	1,14
Konsole mitte	100 / 55	1,71	2,61	2,71
Haltewinkel	17,5 / 65	0,20	0,34	0,44

Werte mit 95% Konfidenz mit 95% Ausfallwahrscheinlichkeit

ift Rosenheim
03.04.2014

Wolfgang Jehl, Dipl.-Ing. (FH)
Stv. Prüfstellenleiter
Baustoffe & Holzbaue

Christian Neudecker
Prüfingenieur
Materialprüfung

Grundlagen
ift-Richtlinie MO-02/1
Teil 2: Verfahren zur Ermittlung der Gebrauchstauglichkeit von Befestigungssystemen
Schlüsselentwurf: 03-14

Darstellung

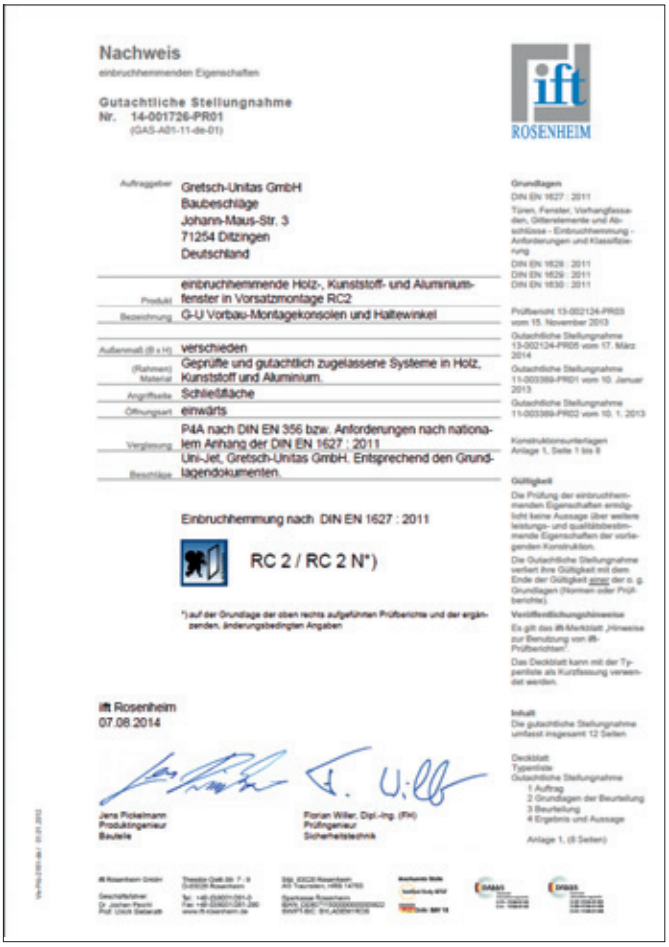
Verwendungshinweise
Die ermittelten Ergebnisse können für den Nachweis entsprechend den oben angegebenen Grundlagen verwendet werden.

Gültigkeit
Die genannten Daten und Ergebnisse beziehen sich ausschließlich auf den geprüften und beschriebenen Probekörper.
Diese Prüfung ermöglicht keine Aussage über weitere leistungs- und qualitätsbestimmende Eigenschaften der vorliegenden Konstruktion.

Veröffentlichungshinweise
Es gilt das "Merkblatt zur Benutzung von ift-Prüfdokumentationen". Das Deckblatt kann als Kurzfassung verwendet werden.

Inhalt
Der Nachweis umfasst insgesamt 5 Seiten und Anlagen (4 Seiten).

Component testing for load-bearing capacity



Nachweis

einbruchhemmenden Eigenschaften

Gutachtliche Stellungnahme
Nr. 14-001726-PR01
(GAS-A01-11-de-01)

ift ROSENHEIM

Auftraggeber: Gretsch-Unitas GmbH, Baubeschläge, Johann-Maus-Str. 3, 71254 Ditzingen, Deutschland

Produkt: einbruchhemmende Holz-, Kunststoff- und Aluminiumfenster in Vorsatzmontage RC2

Bezeichnung: G-U Vorbau-Montagekonsolen und Haltewinkel

Außenmaß (B x H): verschieden

(Rahmen) Material: Geprüfte und gutachtlich zugelassene Systeme in Holz, Kunststoff und Aluminium.

Angriffsseite: Schließfläche

Öffnungsart: einwärts

Verglasung: P4A nach DIN EN 356 bzw. Anforderungen nach nationalem Anhang der DIN EN 1627 : 2011

Beschläge: Uni-Jet, Gretsch-Unitas GmbH. Entsprechend den Grundlagendokumenten.

Einbruchhemmung nach DIN EN 1627 : 2011

RC 2 / RC 2 N*)

*) auf der Grundlage der oben rechts aufgeführten Prüfberichte und der ergänzenden, änderungsbedingten Angaben

ift Rosenheim
07.08.2014

Jens Pickelmann
Produktingenieur
Bauteile

Florian Wiler, Dipl.-Ing. (FH)
Prüfingenieur
Sicherheitstechnik

Grundlagen
DIN EN 1627 : 2011
Türen, Fenster, Vorhangfassaden, Gitterelemente und Abschlüsse - Einbruchhemmung - Anforderungen und Klassifizierung
DIN EN 1628 : 2011
DIN EN 1629 : 2011
DIN EN 1630 : 2011

Prüfbericht 13-002124-PR05 vom 15. November 2013
Gutachtliche Stellungnahme 13-002124-PR05 vom 17. März 2014
Gutachtliche Stellungnahme 11-003389-PR01 vom 10. Januar 2013
Gutachtliche Stellungnahme 11-003389-PR02 vom 10. 1. 2013

Konstruktionsunterlagen
Anlage 1, Seite 1 bis 8

Gültigkeit
Die Prüfung der einbruchhemmenden Eigenschaften ermöglicht keine Aussage über weitere leistungs- und qualitätsbestimmende Eigenschaften der vorliegenden Konstruktion.
Die Gutachtliche Stellungnahme verliert ihre Gültigkeit mit dem Ende der Gültigkeit einer der o. g. Grundlagen (Normen oder Prüfberichte).

Veröffentlichungshinweise
Es gilt das ift-Merkblatt „Hinweise zur Benutzung von ift-Prüfberichten".
Das Deckblatt kann mit der Typenliste als Kurzfassung verwendet werden.

Inhalt
Die gutachtliche Stellungnahme umfasst insgesamt 12 Seiten.

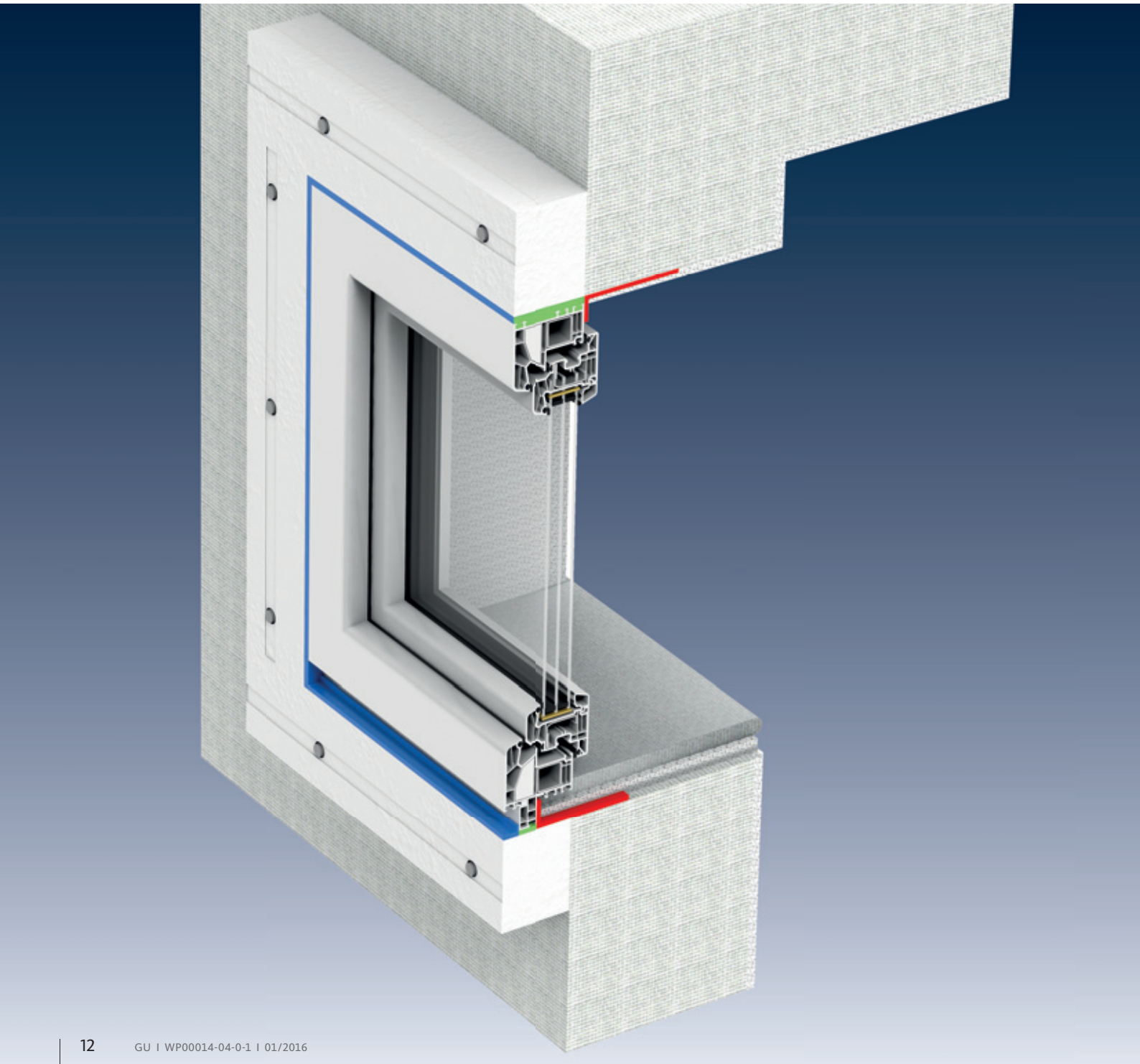
Deckblatt
Typenliste
Gutachtliche Stellungnahme
1 Auftrag
2 Grundlagen der Beurteilung
3 Beurteilung
4 Ergebnis und Aussage
Anlage 1, (8 Seiten)

RC 2 approval in accordance with EN 1627

System 2: GU frame for projecting installation

The premium solution

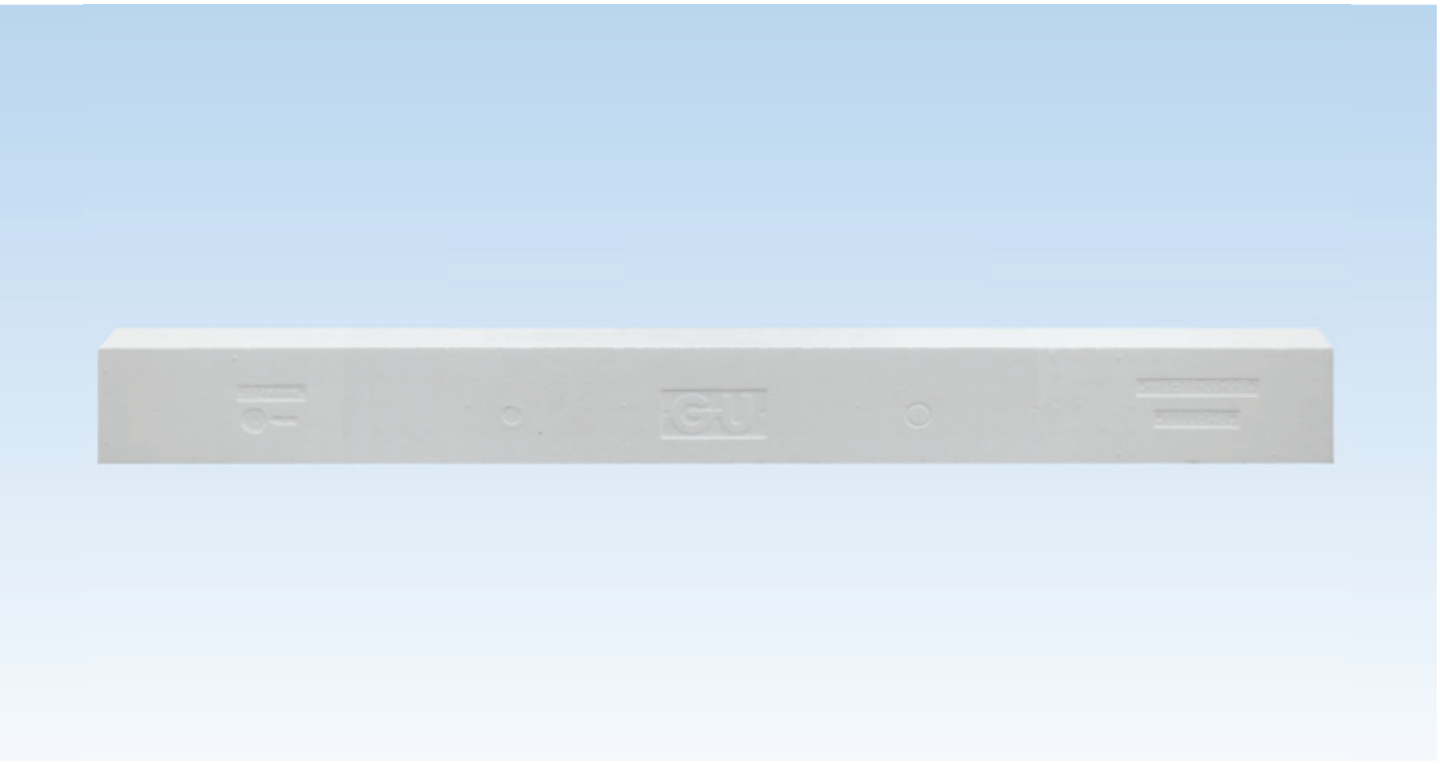
The all-rounder with passive-house approval

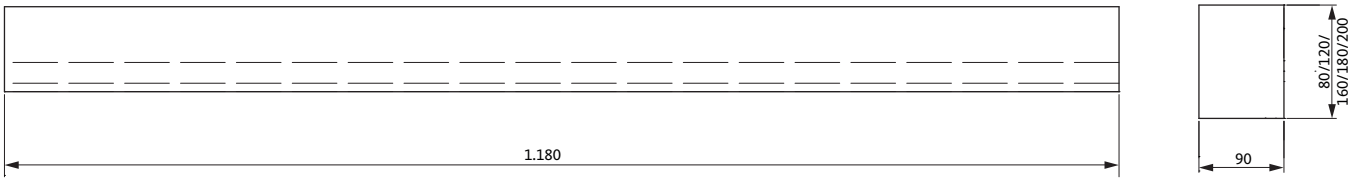


Advantages at a glance

- Optimal connection in the insulation plane (without thermal bridges)
- High load-bearing capacity up to 579 kilograms (tested system)
- System tested for burglar protection up to RC 2 (according to EN 1627)
- No-fuss efficient installation on masonry using only three products
- All window installation fixing points as prescribed by the recognized rules of engineering can be achieved
- The edge distance of 70 mm is be complied with when choosing a fixing point
- Suitable for all profile depths as well as all frame materials made of timber, timber/aluminium, PVC, steel and aluminium

GU frame for projecting installation





Product description

The fully installed GU frame for projecting installation forms a frame around the window opening. As a result, the window can be installed in precisely the same way as a conventional window is installed in masonry. The compelling product range of the GU Group with its six different profiles has the right solution for any installation situation.

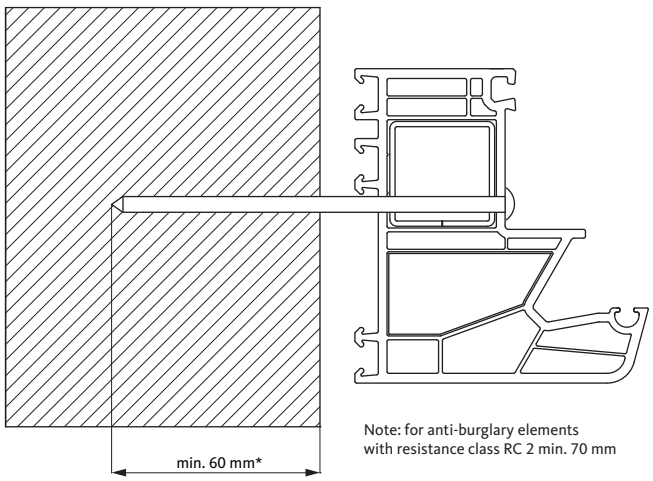
Product characteristics

- Effective sound insulation 46 dB
- Approved for passive houses Ψ = 0.01 W (m-K)
- Free of thermal bridges
- Thermal conductivity λ = 0.0307 W (m-K)
- Fire behaviour in accordance with DIN EN 13501-1 Class E (approved)
- Fire behaviour in accordance with DIN 4102-1 Class B1 (in testing)
- High load absorption (579 kg)
- Fall protection TRAV in accordance with DIN 18008 (in testing)
- RC 2 approval in accordance with EN 1627
- High compressive strength 806 kPa
- Sealing in accordance with accepted rules of engineering (in testing)

Order information

Designation	Dimensions	Colour	PU	PU/Pallet	Order number
GU frame for projecting installation	90 x 80 x 1180 mm	white	30 pcs	60 pcs	H-01573-08-0-7
	90 x 120 x 1180 mm	white	24 pcs	48 pcs	H-01573-12-0-7
	90 x 160 x 1180 mm	white	16 pcs	32 pcs	H-01573-16-0-7
	90 x 180 x 1180 mm	white	14 pcs	28 pcs	H-01573-18-0-7
	90 x 200 x 1180 mm	white	12 pcs	24 pcs	H-01573-20-0-7

Fastening the frame profile to the GU frame for projecting installation



Note: for anti-burglary elements
with resistance class RC 2 min. 70 mm

GU anchor for projecting installation

Product description

The GU frame for projecting installation is securely fastened to the masonry using the GU anchor for projecting installation. It consists of a dowel with a galvanised steel screw.

For the lengths of the GU anchor for projecting installation, please see the overview shown on page 17.

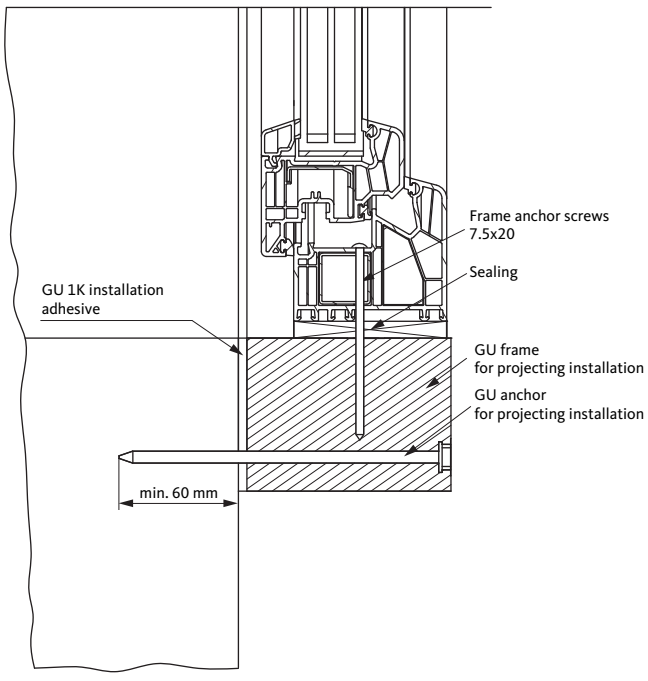
Product characteristics

- Approved for all common building materials
- Reliable hold even in problem building materials thanks to optimised expansion part
- Secure fit thanks to radial expansion
- Cr (VI)-free surface of the dowel screw
- Twice the anti-twist protection for a secure installation

Base materials

Approved: concrete, solid bricks, lime sand solid bricks, lightweight concrete solid bricks, vertical coring bricks, vertical coring lightweight bricks, lime sand ventilating bricks, lightweight concrete hollow blocks, porous lightweight concrete.

Fastening the GU frame for projecting installation to the masonry



Technical data and requirements

Characteristic values	
Borehole depth in concrete $h_{1.1}$	≥ 80 mm
Effective anchor depth h_{nom}	≥ 70 mm
Borehole diameter d_0	10 mm
Drive	SW13/T40
Characteristic loads	
Tensile loads $N_{Rk,p}$	
Temperature range 30 °C / 50 °C	4.50 kN
Temperature range 50 °C / 80 °C	4.00 kN
Building bricks Mz 20-1.8, NF	4.00 kN
Lime sand solid bricks KS 36, NF	4.50 kN
Lime sand solid bricks KS 20, 8 DF	4.50 kN
Lightweight concrete solid bricks, V6, 2 DF	2.00 kN
Porous lightweight concrete	2.00 kN
Vertical coring bricks HLz 12-0,9, NF	2.00 kN
Lime sand ventilating bricks KSL 12, 4 DF	2.50 kN
Lightweight concrete hollow block Hbl 10, 12 DF	1.20 kN
Lateral loads $V_{Rk,s}$	
Dowel with steel screw	9.35 kN
Dowel with stainless steel screws A4	10.91 kN
Bending moment $M_{Rk,s}$	
Dowel with steel screw	17.67 Nm
Dowel with stainless steel screws A4	20.62 Nm

Fixing instructions

GU frame for projecting installation	GU anchor for projecting installation				
	10 x 160 mm	10 x 180 mm	10 x 220 mm	10 x 240 mm	10 x 260 mm
90 x 80 mm	■				
90 x 120 mm		■			
90 x 160 mm			■		
90 x 180 mm				■	
90 x 200 mm					■

Order information

Designation	Dimensions	PU	Order number
GU anchor for projecting installation	10 x 160 mm	100 pcs	H-01624-16-0-1
	10 x 180 mm	100 pcs	H-01624-18-0-1
	10 x 220 mm	100 pcs	H-01624-22-0-1
	10 x 240 mm	100 pcs	H-01624-24-0-1
	10 x 260 mm	100 pcs	H-01624-26-0-1

GU 1K installation adhesive

Product description

GU-1K installation adhesive is a high quality, neutral, permanently elastic one-component adhesive and sealing compound based on a hybrid polymer. It can be used for a universal range of applications.

Product characteristics

- Very easy to work with
- Permanently elastic after curing
- Virtually odourless
- Non-corrosive
- Waterproof and resistant to salt water
- Compensates for any unevenness and material stress
- No speckling with porous substrates such as natural stone, ashlar, marble, granite, etc.
- Blister-free curing even at high temperatures
- Very good adhesion to many materials mostly without primer
- Also sticks to moist substrates
- Silicone-, solvent-, halogen-, acid- and isocyanate-free
- Very good coating compatibility in accordance with DIN 52452; wet-on-wet paintable
- Colourfast, weatherproof and UV-resistant

Applications

- For example, stress-free structural adhesion of metal, plastic (except of PE, PP, PTFE and silicone) and hardwood
- Sealing and adhesion applications in the construction industry
- Structural adhesion of vibrating constructions
- Sealing and adhesion of metal constructions
- Stress-free sealing and adhesion in the area of wagon construction, container construction, shipbuilding, body construction, vehicle construction, caravan construction and apparatus construction
- Sealings for air conditioning and ventilation systems
- Sanitary sealings
- Sealing of weld joints
- Sealing of floor joints
- Mounting of sound absorbing and heat-insulating mats
- Adhesion of tread thresholds (GU-thermostep)

Technical data and requirements

GU 1K installation adhesive	Classification and grading	NF / ISO / DIN standard
Base	1 component hybrid polymer	
Consistency	Stable paste	
Curing method	Polymerisation through air humidity at room temperature	
Film formation time [1]	approx. 10 minutes	
Curing speed [1]	2 - 3 mm in the first 24 hours	
Shore A – hardness	40 ± 5	DIN 53505
Density	1.67 g/ml	DIN 53479
Thermal stability	-40 °C up to +90 °C	
Recovery	> 75 %	ISO 7389-B
Max. permissible total deformation	20 %	EN ISO 11600
Elastic modulus 100 %	0.75 N/mm²	EN ISO 8339
Tensile strength	1.8 N/mm²	DIN 53504
Combined tension and shear resistance [2]	0.9 N/mm²	DIN 53504
Percent elongation at failure	750 %	DIN 53504
Volume change	-3 up to -4 Vol. %	EN ISO 10563
Building material class	B2 (normally inflammable)	DIN 4102, part 4

[1] Measured according to standard atmosphere (EN ISO 291) at 23 °C / 50 % rel. hum. These values can vary due to environmental factors such as temperature, humidity and the nature of the substrate.
[2] Substrate AlMgSi1, layer thickness 2 mm, feed rate 10 mm/minute.

Order information

Designation	Packaging	Contents	Colour	PU/Box	Order number
GU 1K installation adhesive	Cartridge	290 ml	grey	12 pcs	H-01175-00-0-0
	Soft-pack	600 ml	grey	20 pcs	H-01175-60-0-0

GU 1K installation adhesive

Substrates

- The GU-1K installation adhesive cures excellently on a variety of substrates and mostly without primer. These include metals (AlCuMg1, AlMgSi1, brass, zinc, steel ST, 1403 electro-galvanised and hot-dip-galvanised steel and other steels), plastics (polystyrene, polycarbonate, PVC, ABS, polyamide, PMMA and GRP – but not PE, PP, PTFE and silicone), polystyrene, cork, enamel, concrete, glass, HPL and wood.
- In general, care should be taken with plastics to ensure that release agents used in manufacture or protective films used for transport are removed before gluing, leaving no residue. Otherwise, adhesion to the component deteriorates considerably. Plastics containing plasticisers (e.g. soft PVC, butyl rubber, EPDM and APTK) may exhibit incompatibilities such as discolouration and loss of adhesion. Suitability for use with the system should be tested in such cases.
- **Caution:** PMMA and polycarbonate must be glued under tension, or otherwise stress cracks will form. Preliminary testing is strictly recommended for polycarbonate
- Adhesion surfaces must always be suitable for coating, clean, and free of dust and grease. Dry and clean substrates are particularly suitable and produce the best bond values. GU 1K installation adhesive also sticks to moist substrates, and even underwater. Adhesion achieved in this way may, however, be weaker than adhesion to dry and clean substrates
- **Pretreatment:** porous substrates that are subject to relatively high water loads should be pretreated with GU primer if appropriate. For all smooth surfaces we also recommend to improve the adhesion by using a GU primer.

Processing

- **Application method**
  – GU manual or compressed-air gun
- **Processing temperature**
  – Ambient temperature: +0 °C (frost-free) to +40 °C
  – Temperature of adhesive surface: +0 °C (frost-free) to +35 °C
- **Caution:** Curing of the GU-1K installation adhesive occurs from outside to inside as a result of air humidity at room temperature and slows over time. At low temperatures and/or low air humidity curing can be significantly slower!

Joint dimensions

- **Minimum width**
  – for gluing: 2 mm
  – for sealing: 5 mm
- **Maximum width**
  – for gluing: 10 mm
  – for sealing: 30 mm
- **Minimum depth**
  – for gluing: 2 mm
  – for sealing: 5 mm
- **Recommended**
  – Joint width = 2 x joint depth (> 6 mm width)
  – Joint width = 1 x joint depth (< 6 mm width)

Storage

- Store in the unopened packaging in a cool (+5 °C to +25°C), dry place. Seal opened containers well and use quickly

Safety instructions

- Observe standard workplace hygiene

Chemical resistance

- Good: water, aliphetic solvents, dilute anorganic acids and alkalis, oils and greases
- Bad: aromatic solvents, concentrated acids and chlorinated hydrocarbons

Note

- The GU-1K installation adhesive is paintable.
  Due to the variety of coating systems available on the market, we recommend carrying out compatibility and adhesion tests in advance. For example, in accordance with the relevant standards such as DIN 18540, elastic sealing compounds should not be coated completely, because otherwise cracks can form in the non-elastic paint when tensions and movements occur. The drying time of alkyd resin paints may also be delayed. Any soap residue from the smoothing water should be removed prior to coating, as this can impair the adhesion of the coating. An adhesion and compatibility test for the adhesive itself is advisable for the different substrates.

Processing information

GU frame for projecting installation

The GU frame for projecting installation is a powerful problem solver for modern construction and energetic renovation. Windows and balcony-doors can no longer be fixed directly through the frame to the masonry in the case of multiple-layer outer walls that are formed by fixing a exterior insulation finishing system (EIFS). Conventional installation was done in the EIFS i.e. in a nonstructural material.

Supporting structures are therefore essential for the fixing frame of structural elements. The GU frame for projecting installation performs its function particularly well thanks to its impressive features. It is very efficient to work with and has been tested for burglary protection to EN 1627 up to resistance class RC 2. In addition, the rectangular cross-section of the frame provides flexibility: it can be installed in two positions, so that, for example, the installation depth can vary between 90 and 120 millimetres.

Installation – step 1

During installation, the GU frame for projecting installation fixed under the component is first cut to the length of the dimensions of the window. The dimension here is calculated from the left outer edge of the frame formed by the frame to the right outside edge. The horizontal lower element is therefore measured along the full length, and the upper frame is also measured in the same way. The vertical frames are fitted to the sides of the window between these horizontal elements.

Installation – step 2

After cutting, the GU-1K installation adhesive is applied bead- and serpentine-like to the frame for projecting installation and then bonded to the surrounding masonry. The special processing instructions of the products used and the surface treatment must be observed.

Installation – step 3

Then the bonded GU frame for frame for projecting installation is also fixed to the GU anchor for projecting installation. At least three anchors per frame must be installed and the positions on the frame where they must be fixed is described in the graphic on the opposite side. The maximum distances from the outer edges of the GU frame for projecting installation to the first screw connection is 150 millimetres with a maximum of 700 millimetres between the fixing points. Carrying out the screw connection according to these specifications provides the necessary edge spacing for fixing stability on all sides.

Installation – step 4

The structural elements are installed perpendicularly and flush with the GU frame for projecting installation. Fixing the lower shims is not required for an exact plumbing of the frame. Installation of the window is carried out with self-cutting frame anchor screws (diameter 7.5 mm). When selecting the screw length, it is essential to ensure that there is a minimum screw depth of 60 millimetres in the GU frame for projecting installation. In addition, the separate test certificate and the corresponding installation instructions must be observed with anti-burglary versions.

Installation – step 5

The sealing between the structural element and the GU frame for projecting installation is made in the last step. GU gun foam, GU outside window sealing tape, GU joint sealing tape, GU sealing tape BG1 and other sealing products of the GU Group are used here.

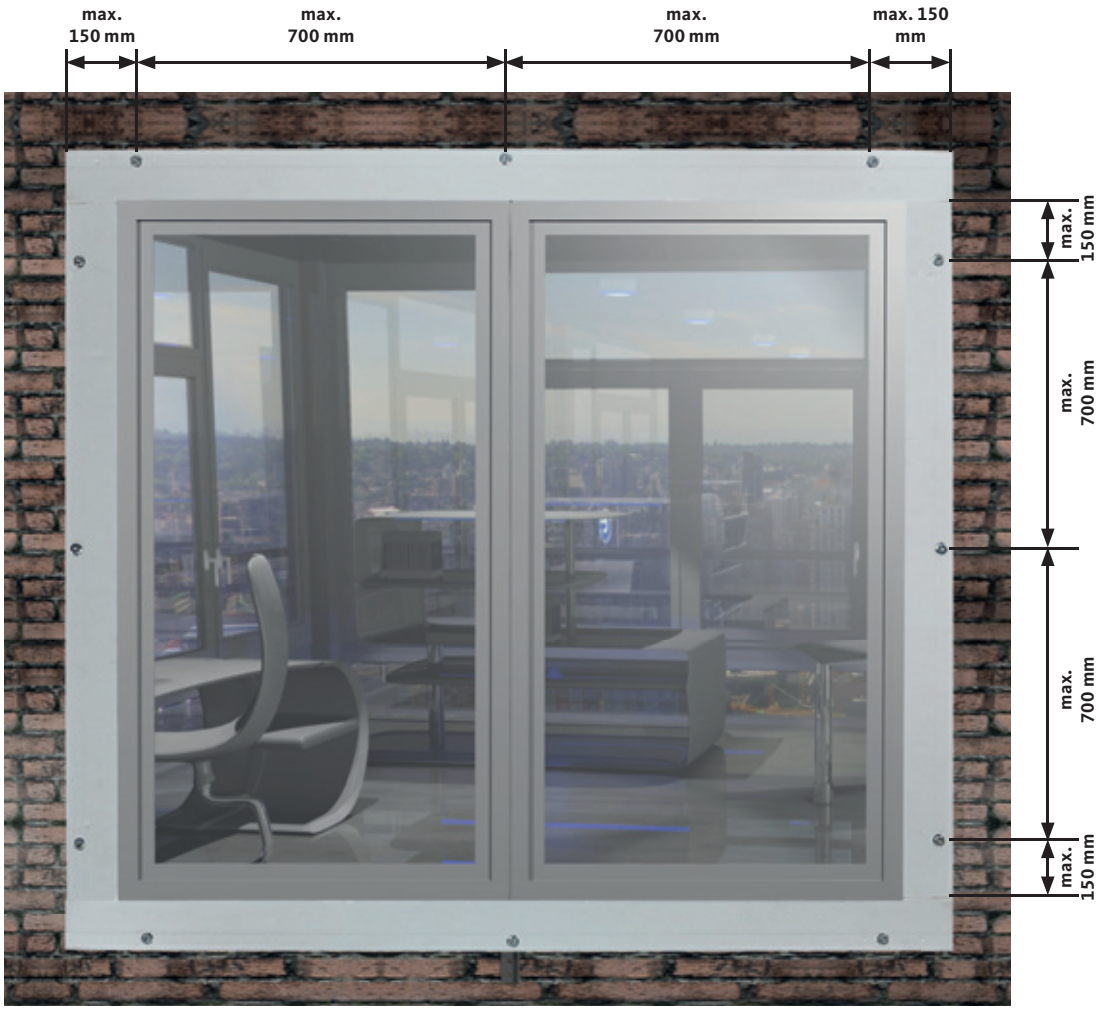
Note: During the entire installation process, the "Guidelines for planning and executing the installation of windows and house doors for new constructions and renovations" of the RAL-Güte-gemeinschaft Fenster und Haustüren e.V. should be observed.

Installation examples

**Suitable for all profile depths and frame materials Especially suitable for use in double-layer clinker facades:
Here the GU frame for projecting installation satisfies the demands for load absorption, thermal protection, windproofness and sound insulation with maximum efficiency.**

Features and benefits of projecting installation at a glance

- Positioning and installing the window in the insulation plane without much effort
- No risk of thermal bridges
- Perfect for clinker facades: installation in the insulation plane, systematic load absorption and precise sealing
- GU frame for projecting installation can be used either-way (for example, 90/120 mm)
- Complete installation using only three products:
  – GU frame for projecting installation
  – GU anchor for projecting installation
  – GU 1K installation adhesive
- These three products together constitute an approved system
- Airtight installation on the masonry using GU-1K installation adhesive
- Edge distance of 70 mm (indicated by a mark) is complied with when choosing a fixing point
- All mounting points for the GU frame for projecting installation are complied with, even for PVC and timber/ aluminium profiles
- Combinable with the GU supporting consoles and GU retaining angles from system 1
- Can be plastered and painted-over
- GU frame for projecting installation can be drilled, screwed and sawn, thus enabling quick and easy installation
- Window is fitted in prefabricated frame without additional drilling
- GU anchor for projecting installation can be used with all types of stone



Proven system solution from Gretsch-Unitas

GU frame for projecting installation

Kurzprüfbericht
Luftschalldämmung von Bauteilen

Zum Prüfbericht Nr. 153/45

Auftraggeber: Gretsch-Unitas GmbH, Johann-Maus-Straße 3, 71254 Ditzingen

Aachen, 15.04.2015

Produkt: Vorbauzarge mit Fensterelement

Darstellung:

Bewertetes Schalldämm-Maß R_w
Spektrum-Anpassungswerte C und C_{tr}

Abdichtung / Variante 1:
R_w (C;C_{tr}) = 45 (-2;-4) dB

Abdichtung / Variante 2:
R_w (C;C_{tr}) = 46 (-2;-4) dB

Grundlagen: EN ISO 10140-1: 2010, EN ISO 10140-2: 2010, EN ISO 717-1: 1996+A1: 2006

Component testing of sound insulation

Gutachtliche Stellungnahme
Nr. 45-116/15

Grundlagen: DIN EN 1627-1630:2011-09, RC2 (in Anlehnung)
Prüfbericht 45-89/15

Auftraggeber: Gretsch-Unitas GmbH Baubeschläge
D-71254 Ditzingen

Produkt: GU Vorbauzarge

Bauarten
Vorbauzarge für RC1 N, RC2 N und RC3 Bauelemente (separater Nachweis notwendig) in Holz, Holz-Aluminium, PVC, Stahl oder Aluminium

Datum des Gutachtens: 30. Oktober 2015

Umfang des Gutachtens: 1 Seite Deckblatt, 1 Seite Gutachten, 4 Seiten Zeichnungen und 11 Seiten Montageanleitung

Zusatzbedingungen zu diesem Gutachten: Die gutachtliche Stellungnahme hat 3 Jahre Gültigkeit. Sie darf nicht verändert und nur als Ganzes veröffentlicht werden.

Unterschrift

Stellv. Institutsleiter — Stellv. Institutsleiter

RC 2 approval in accordance with EN 1627

Forschungsinstitut für Wärmeschutz e.V.
München

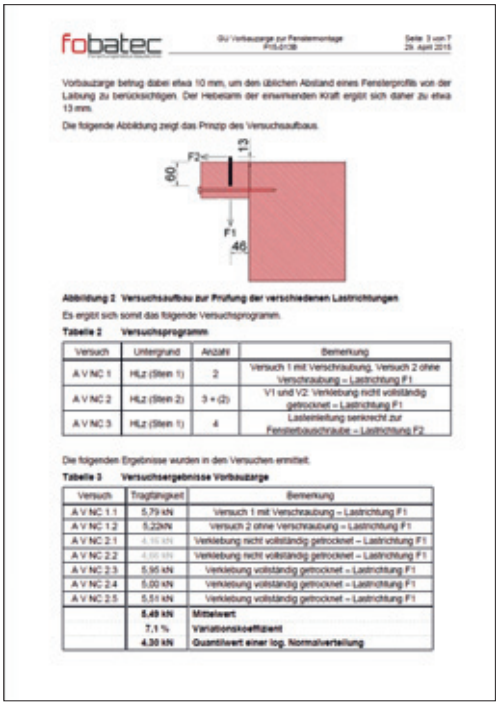
UNTERSUCHUNGSBERICHT

Antragsteller: Gretsch-Unitas GmbH, Baubeschläge, Johann-Maus-Straße 3, 71254 Ditzingen

Inhalt des Antrags: Rechnerische Bestimmung der längenbezogenen Wärmedurchgangskoeffizienten ψ an der GU Vorbauzarge mittels der „Finite-Elemente'-Methode.

Bericht Nr.: 83.2-01/15a
Ausstellungsdatum: 12. Juni 2015
Seiten gesamt: 17
davon Anlagen: 7

Component testing of suitability for use in low-energy and passive houses



fobatec

Vorbauzarge betrug dabei etwa 10 mm, um den üblichen Abstand eines Fensterprofils von der Laibung zu berücksichtigen. Der Hebelarm der einwirkenden Kraft ergibt sich daher zu etwa 13 mm.

Die folgende Abbildung zeigt das Prinzip des Versuchsaufbaus.

Abbildung 2 Versuchsaufbau zur Prüfung der verschiedenen Lastrichtungen

Es ergibt sich somit das folgende Versuchsprogramm.

Tabelle 2 Versuchsprogramm

Versuch	Untergrund	Anzahl	Bemerkung
A V NC 1	HLz (Stein 1)	2	Versuch 1 mit Verschraubung, Versuch 2 ohne Verschraubung – Lastrichtung F1
A V NC 2	HLz (Stein 2)	3 + (2)	V1 und V2: Verklebung nicht vollständig getrocknet – Lastrichtung F1
A V NC 3	HLz (Stein 1)	4	Lasteinleitung senkrecht zur Fensterbauschraube – Lastrichtung F2

Die folgenden Ergebnisse wurden in den Versuchen ermittelt.

Tabelle 3 Versuchsergebnisse Vorbauzarge

Versuch	Tragfähigkeit	Bemerkung
A V NC 1.1	5,79 kN	Versuch 1 mit Verschraubung – Lastrichtung F1
A V NC 1.2	5,22kN	Versuch 2 ohne Verschraubung – Lastrichtung F1
A V NC 2.1	4,16 kN	Verklebung nicht vollständig getrocknet – Lastrichtung F1
A V NC 2.2	4,66 kN	Verklebung nicht vollständig getrocknet – Lastrichtung F1
A V NC 2.3	5,95 kN	Verklebung vollständig getrocknet – Lastrichtung F1
A V NC 2.4	5,00 kN	Verklebung vollständig getrocknet – Lastrichtung F1
A V NC 2.5	5,51 kN	Verklebung vollständig getrocknet – Lastrichtung F1
	5,49 kN	**Mittelwert**
	7,1 %	**Variationskoeffizient**
	4,30 kN	**Quantilwert einer log. Normalverteilung**

Component testing for load-bearing capacity

TFI-Bericht 450502-03

Brandprüfung

zur Klassifizierung gemäß EN 13501-1:2010

Bericht erstellt für

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Baubeschläge
Johann-Maus-Straße 3
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DEUTSCHLAND

Produkt

Wärmeisolierende und schallisolierende GU-Vorbauzarge

Fachlich verantwortlich

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Dieser Bericht umfasst 2 Seiten und 2 Anlagen.
Dieser Bericht ist eine Korrektur des Prüfberichtes Nr. 450502-01.

Aachen, 20.04.2015

Dr. Ernst Schröder

Dieses Dokument wurde mit einer qualifizierten elektronischen Signatur versehen und ist ohne Unterschrift gültig.

Dieser Bericht bezieht sich nur auf die geprüften Proben und wurde nach bestem Wissen und Gewissen erstellt. Er darf nur vollständig, niemals auszugsweise, weitergegeben werden. Im Übrigen gelten die Allgemeinen Bedingungen der Textiles & Flooring Institute GmbH für die Auftragsdurchführung.

Testing the fire behaviour of construction products
in accordance with EN ISO 11925-2: 2010

TFI-Bericht 450502-04

Klassifizierung

zum Brandverhalten nach EN 13501-1:2010

Bericht erstellt für

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Produkt

Wärmeisolierende und schallisolierende GU-Vorbauzarge

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Dieser Bericht umfasst 4 Seiten und 0 Anlage(n).
Dieser Bericht ist eine Korrektur des Klassifizierungsberichtes Nr. 450502-02.

Aachen, 20.04.2015

Dr. Ernst Schröder

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Classification for fire behaviour
in accordance with EN 13501-1: 2010

TFI-Bericht 451070-01

Wärmeleitfähigkeit

Bericht erstellt für

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Bauelement
GU Vorbauzarge

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Dieser Bericht umfasst 2 Seiten und 1 Anlage(n).

Aachen, 03.07.2015

Dieser Bericht bezieht sich nur auf die geprüften Proben und wurde nach bestem Wissen und Gewissen erstellt. Er darf nur vollständig, niemals auszugsweise, weitergegeben werden. Im Übrigen gelten die Allgemeinen Bedingungen der Textiles & Flooring Institute GmbH für die Auftragsdurchführung.

Component testing of thermal conductivity

WD 451070-01-WD

Anlage WD - Wärmedurchlasswiderstand

1 Vorgang

Produktbezeichnung	GU Vorbauzarge
TFI-Probennummer	15-06-0258
Prüfzeitraum	30.06.2015

2 Prüfverfahren / Anforderungen

Prüfverfahren	EN 12667:2001 Bestimmung des Wärmedurchlasswiderstandes Prüfung mit dem Plattengerät nach ISO 8302:1991
Prüfgerät	Einplattengerät, horizontal
Konditionierung	24 h Lagerung (50°C Trockenschrank)
Dicke im eingebauten Zustand [m]	0,021
Anzahl der eingebauten Lagen	1
Rohdichte [kg/m³]	56,7

3 Ergebnisse

Prüfung	T_1 [°C]	T_2 [°C]	ΔT [K]	T_m [°C]	λ [W/(m*K)]
1	10,1	20,8	10,7	0,03162	0,03162
2	19,9	30,5	10,6	0,03523	0,03523
3	29,8	40,3	10,6	0,03635	0,03635
Ermittelte Wärmeleitfähigkeit λ_{10} [W/(m*K)]					0,0387

T_1: Temperatur der kalten Prüfprobenseite
T_2: Temperatur der warmen Prüfprobenseite
ΔT: Temperaturdifferenz $\Delta T = T_1 - T_2$
T_m: mittlere Prüftemperatur, $T_m = (T_1 + T_2)/2$
λ: Wärmeleitfähigkeit

4 Anwendung

Die Messwerte der Wärmeleitfähigkeit sind für den trockenen Zustand der Probe ermittelt, sie stellen keine Bemessungswerte nach DIN 4108 oder Nennwerte nach EN 13163 dar.

Seite 1 von 1

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WP00014-04-0-1 01/2016 Printed in Germany

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