

## Tender text for window installation in pre-wall systems

blaugelb Pre-Wall Installation System Triotherm+

### Window installation in the insulation layers of façades

The window installation is performed in the insulation layer of the building structure for reasons of structural physics. The dimensioned cantilevers – from the outside edge of the masonry to the outside edge of the window frame – are shown in the planning details.

### Preliminary notes:

#### German construction contract procedures (VOB)

In addition to the General Terms and Conditions and these technical preliminary notes, the latest version is valid:

**Part B (VOB/B)** provides the “Terms & conditions for the execution of construction work”.

**Part C (VOB/C)** concerns the “General technical specifications in construction contracts”. These contain subsections with specific technical regulations about the execution and billing of specific construction work.

### General – Technical requirement

The construction elements are to be installed in a pre-wall installation system with building inspectorate suitability certification in accordance with the EU Construction Products Regulation (CPR). The structural connection of the pre-wall installation system is to be planned and implemented in accordance with the installation guidelines of the system provider. The connection of the window to the pre-wall installation system is to be planned and executed in accordance with the generally accepted rules of technology.

The following generally applies:

All effects of the indoor and outdoor climate on the building, all forces exerted by the construction elements themselves and the typical structural movements must be taken into account. The formation of the connection must meet the requirements for heat, sound and moisture protection.

The planning of the execution by the tenderer must be handed over to the builder before starting installation. In the event of requirements for fall arrest protection of the construction elements, verifiable statics for the window fastening are to be communicated to the builder before starting installation. (Special compensation by the builder).

### Standards and regulations to be observed:

- DIN 18355 | 2019-09 German construction contract procedures (VOB) – Part C: General technical specifications in construction contracts (ATV) – Joinery (Wood or plastic windows)
- DIN 18360 | 2019-09 German construction contract procedures (VOB) – Part C: General technical specifications in construction contracts (ATV) – Metal construction works (Metal windows)
- DIN 1627 – 1630 (if burglar resistance is required)
- DIN 4108-2 Minimum requirements to thermal insulation



- DIN 4108-7 Air tightness of buildings – Requirements, recommendations and examples for planning and performance
- DIN 4108 Supplement 2: Minimum thermal insulation, thermal bridge catalogue and proof of equivalence
- DIN 4109-35 | 2016-07 Sound insulation in buildings – Part 35: Data for verification of sound insulation (component catalogue) – Elements, windows, doors, curtain walling (if sound insulation is required)
- DIN EN 12207:2017-03 Windows and doors – Air permeability – Classification; German version EN 12207:2016
- DIN EN 12208:2000-06 Windows and doors – Watertightness – Classification; German version EN 12208:1999
- DIN EN 12210:2016-09 Windows and doors – Resistance to wind load – Classification; German version EN 12210:2016
- DIN EN 14351-1:2016-12 Windows and doors – Product standard, performance characteristics – Part 1: Windows and external pedestrian doorsets; German version EN 14351-1:2006+A2:2016
- DIN 18202:2019-07 Tolerances in building construction – Buildings
- DIN 18203-3:2008-08 Tolerances in building constructions – Part 3: Building components of wood and derived timber products
- DIN 18195:2017-07 Waterproofing of buildings – Vocabulary
- DIN 18531-5:2017-07 Waterproofing of roofs, balconies and walkways – Part 5: Balconies and walkways
- DIN 18533-1:2017-07 Waterproofing of elements in contact with soil – Part 1: Requirements and principles for design and execution
- DIN 18540:2014-09 Sealing of exterior wall joints in building using joint sealants
- DIN 18542:2020-04 Impregnated sealing tapes made of cellular plastics for sealing of outside wall joints – Requirements and testing

## Regulations:

- Buildings Energy Act (GEG) 1 January 2024
- Valid state building code
- ETB fall arrest protection: 1985-06 ETB guideline “Components providing fall arrest protection”; version 1985-06
- Workplaces Ordinance and workplace regulations
- ift guideline MO-01/1 Structure connections of windows – Method for determining fitness for use of sealing systems



- ift guideline MO-02/1 – Structure connections of windows Part 2 – Method for determining fitness for use of sealing systems
- “Guideline for installation of windows and external pedestrian doors – 2024-03” (RAL-Gütegemeinschaft Fenster und Haustüren)

**Service text:**

**Requirements for the pre-wall installation system**

An integrated pre-wall installation system is to be used. All included system components must absolutely be compatible with conventional back wall materials and façade insulating materials without additional treatment. Recycled building materials must be avoided.

**Minimum requirements for material properties**

Material property	Minimum requirement
Thermal conductivity DIN EN 12667:2001-05 rated value $\lambda_{10}$	$\leq 0.0374$ W/mK
Compression stress (2 %) compression DIN EN DIN EN 13163:2017 / EN 826:2013-05	$\geq 1435$ kPa
Rate of resistance to water vapour diffusion DIN EN 12086	$\geq 228$ $\mu$
Bending strength DIN EN 12089	$\geq 2490$ kPa
Shear strength DIN EN ISO 14130	$\geq 0.217$ N/mm <sup>2</sup>
Fire behaviour DIN EN 13501-1:2019-05	Class E
Ageing resistance	Mould-proof, does not rot
Water absorption 28 days under water DIN 12087	$\leq 0.5$ vol. %
Compatibility with conventional building materials	Compatible, except for materials containing solvents and materials that are not polystyrene-compatible

The lower, transverse system profile is to be designed as a base structure passing all the way through. An interlocking profile coupling is allowed. Components are to be sealed to one another and this must be verified. The installation system is to be installed at the building structure vertically, flush and true to size. The permissible tolerances of the shell must be compensated.

The pre-wall installation system is intended to absorb the forces introduced from all construction elements and transfer them to the anchor base. Mechanical fastening in the load-bearing structure is required. The fasteners must be compliant with the system for the offered assembly frame. Pasty seals of the assembly profiles to the building structure and to one another are to be designed to be compliant with the system. The entire construction (PWIS and window) is to be protected against permanent damage caused by an increase of the material moisture, e.g. through unplanned ingress of moisture or water run-off before completion of the façade cladding.



## Performance requirements at the window sealing in the pre-wall installation system

### Planning specifications (to be defined by the party issuing the invitation to tender)

- Design A**  
According to the attached planning documents and/or drawings.
  
- Design B**  
The fastening of the windows in the blaugelb Trio**therm**<sup>+</sup> profile is performed with Frame Screws Fix dia. 7.5 mm of a suitable length stipulated by the system provider.  
The sealing at the side and top is performed using blaugelb Multifunctional Tape TrioSDL600 that complies with the system. A joint is formed at the bottom without/with glazing blocks (as selected by the tenderer). The sealing is performed on the inside/outside with moisture-active blaugelb Foil DuoSL1050 Power Plus that complies with the system – or equivalent.
  
- Design C**  
The fastening of the windows in the blaugelb Trio**therm**<sup>+</sup> profile is performed with Frame Screws Fix dia. 7.5 mm of a suitable length stipulated by the system provider. The inner and outer sealing is performed around all sides with moisture-active blaugelb Foil DuoSL1050 Power Plus that can be plastered over. The centre insulation is performed using suitable blaugelb Assembly Foam. A joint is formed at the bottom without/with glazing blocks (as selected by the tenderer).
  
- Design D – Fastening according to the static special case “fall arrest protection”**  
The construction elements take on the function of a fall-arresting protector if they are installed below the sill heights regulated by the building authorities and their position in the building structure is above the regulated height difference of  $\geq 1$  m to the traffic area.  
The following applies accordingly if defined fall-arresting devices such as grilles, bars or glazed building elements are installed directly on the window frame.  
All components of the entire fall-arresting construction, including the fastening to the building structure, must correspond to the valid technical guidelines; their suitability must be verified with building inspectorate suitability certification (AbP/ETA/AbZ/ABg).

### Fastening in the blaugelb Trio**therm**<sup>+</sup> Pre-Wall Installation System:

The force-transferring fastening of the window frame in the blaugelb Trio**therm**<sup>+</sup> Profile is to be performed using the system-specific twin gland through the window frame in the blaugelb Trio**therm**<sup>+</sup> Profile. The necessary fastening to be planned and executed is to be determined based on the design wind load specified in the specifications, the design features of the construction elements, their position in the façade and the special load “impact of persons” to be applied. The fastening planning/execution is to be performed based on the Meesenburg installation instructions for fall-arresting construction elements. Special attention must be paid to compliance with the edge distances specified by the system provider.  
Depending on the geometry of the construction elements, the fastening positions of the twin gland are adapted to the specifications of the fall-arresting equipment (installed on the construction element). The specifications from their building inspectorate suitability certification take precedence.  
The screw-in depth and edge distance of the fastening of the blaugelb Trio**therm**<sup>+</sup> Pre-Wall Installation System that engages in the wall material (blaugelb Frame Screw Fix FK-T30 belonging to the system) must be matched to the existing load-bearing wall material (compliance with the manufacturer's specifications). The load-bearing seal between the wall material and the frame profiles must absolutely be carried out in accordance with the system specifications (Meesenburg installation instructions). This also applies in the same manner to the seal of the frame profiles to one another.

### **NOTE:**

If the special static requirement “fall-arrest protection” is required, a proof of stability for the specific construction project (verifiable structural analysis) by a structural engineer (stress analyst) is necessary for verification management. The responsibility must be regulated contractually between the builder and the contractor.



