

# Installation instructions for blaugelb Trio**therm**<sup>+</sup> system

How to achieve perfect insulation.



## The installation instructions refer to installation of the Trio**therm**<sup>+</sup> pre-wall installation system

Observe the relevant standards and guidelines as well as the state of the art. This applies to extracts from the following standards and guidelines.

- Requirements of the current Energy Saving Ordinance (ENEV)
- Requirements of the construction contract procedures (VOB) DIN 18355, 18360 and DIN 18361
- Dimensions and general basic rules according to DIN 68121-1+2
- Checking of air permeability DIN EN 12114, 12207
- Tightness to driving rain DIN EN 1027, 12208
- Wind loads DIN EN 12211, 12210
- Soundproofing requirements DIN 4108
- Thermal protection requirements 4109
- Notes on window installation from the current RAL installation guide
- Ift Guideline MO 01/1 Structural connection of windows and their serviceability within sealing systems
- Ift Guideline MO 02/1 Structural connection of windows and their serviceability within sealing systems

### Notes:

Keep a record of how to process a specimen of the blaugelb Trio**therm**<sup>+</sup> system.

Use the installation instructions to train the personnel performing the work. Our team will be happy to support you.

Keep a record of the work performed in the form of a suitable installation report.

### Notes:

#### Read carefully before installing

Please note that you should install a “specimen” of the blaugelb Trio**therm**<sup>+</sup> profiles on the structure before starting installation work.

**Time:** At least 24 hours before actual start of installation of the blaugelb Trio**therm**<sup>+</sup> system

**Model size:** At least 200 mm of the blaugelb Trio**therm**<sup>+</sup> profile to be used

**Procedure:** Apply 2 beads of sealant (blaugelb Hybrid Polymer Power Fix) to the specimen of blaugelb Trio**therm**<sup>+</sup> profile, then position it on the structure (do not screw to base)

Drill at least 2 test holes in the structure proper.

**Evaluation:** After loading the test specimen for at least 24 hours with approx. 800 N (81.5 kg). If it does not withstand this load, it can be assumed that a coating on the anchor base is the cause. In this instance the Product Management of Meesenburg Großhandel KG will be happy to advise you.

**Documentation:** Using the report provided.  
File the report in the corresponding construction records.

### Safety note:

While creating and loading the test specimen, please observe all accident prevention and essential health and safety measures.

It is imperative to avoid injuries to the person carrying out the work or to bystanders.

### Note on dovetail joints:

To create the seal, apply a little blaugelb Hybrid Polymer Power Fix before slotting together.



The socket is positioned on the wall side (at bottom).

The tail is pressed into the socket from above.

### Note on screwing Trio**therm**<sup>+</sup> profiles:

Set the torque of the cordless screwdriver to the required level.

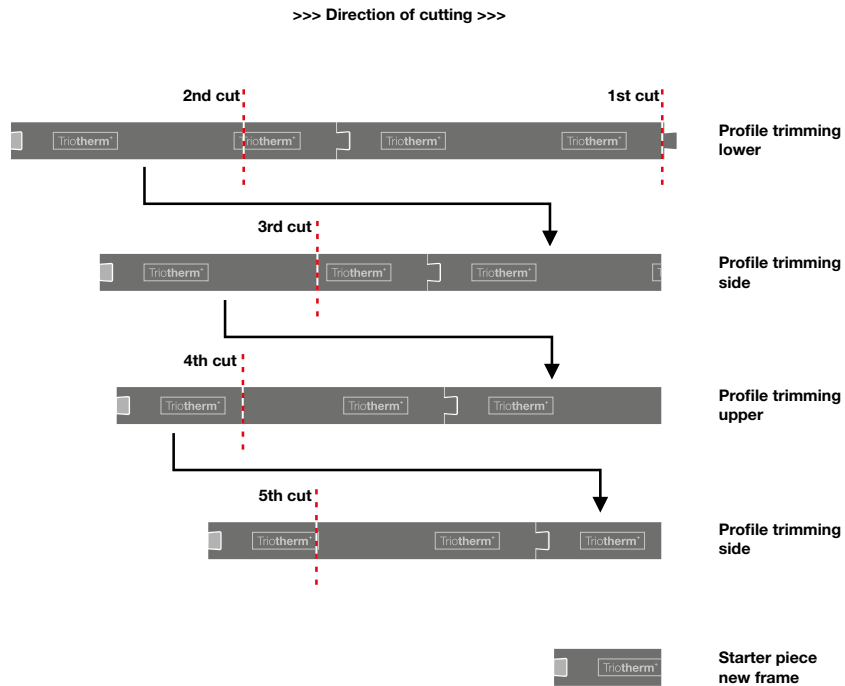
Note that you should start screwing the blaugelb Frame screw Fix FK-T30 **slowly** onto the blaugelb Trio**therm**<sup>+</sup> profile.

# Installation instructions for blaugelb Trio**therm**<sup>+</sup> system

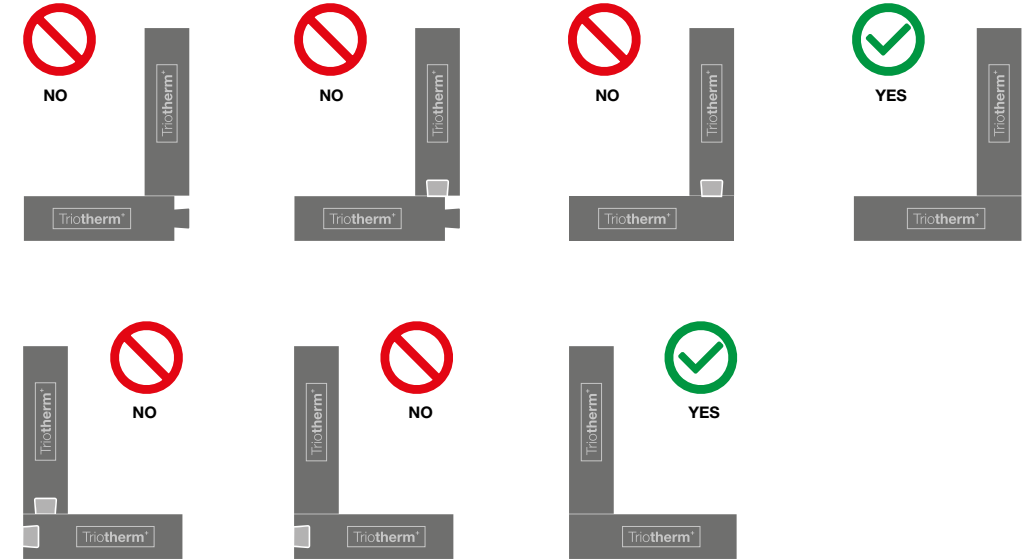
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## Infinitely extensible by dovetailing



## Corner constructions and butt joints



Minimum length of the blaugelb Trio**therm**<sup>+</sup> profiles for extending must be at least 250 mm



## Step 1: preparation:

### (A) Checking the base



Check the surfaces of the base to establish whether they are horizontal or perpendicular (plumb). Make allowance for centre line tolerances and masonry tolerances.

1. System safety
2. Check the supporting substrate for loose parts, bituminous or separating coatings.
3. Pretreat very sandy or floury substrates with primer.  
Bind/remove normal construction dust on the base (at the desired position for the profile) with the aid of a damp paint brush/decorator's brush cloth or vacuum cleaner.
4. Check perpendicular and horizontal lines as well as the centre line and masonry tolerances.

## Step 1: preparation:

### (B) Assembly of the lower blaugelb Trio**therm**<sup>+</sup> profiles



Start with the lower, horizontal blaugelb Trio**therm**<sup>+</sup> profiles (running across entire width of window)

1. Determine the dimension required:  
Complete window width  
+ planned connecting joint dimension (2x)  
+ cross-section of blaugelb Trio**therm**<sup>+</sup> profile at side  

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**= final dimension of lower horizontal piece**
2. Join together the blaugelb Trio**therm**<sup>+</sup> profiles using dovetailing. To create the seal, apply a little blaugelb Hybrid Polymer Power Fix.
3. Transfer the length dimension to the assembled blaugelb Trio**therm**<sup>+</sup> profiles
4. Saw the blaugelb Trio**therm**<sup>+</sup> profiles to the correct length  
Recommended tool: Mitre saw with coarse longitudinal-cut saw blade

**Recommendation:** Cut off the socket on the outer blaugelb Trio**therm**<sup>+</sup> profile.  
Note the width of the cut and the cut-off material in the dimensional chain (see point 1).

## Step 2: sealing

Application of the sealant



1. Open the tubular bag of the blaugelb Hybrid Polymer Power Fix and insert in a sealant gun for tubular bags.
2. Recommended tool: to reduce the effort required, we recommend the use of a battery-powered gun, e.g. Item No. 0402328 from the Meesenburg tool range
3. Use the recommended 6 mm triangular nozzle supplied.
4. Apply the blaugelb Hybrid Polymer Power Fix to the honeycomb-pattern underside of the blaugelb Trio**therm**+ profile. 2 strips of blaugelb Hybrid Polymer Power Fix sealing compound are needed on each. Apply these a distance of two honeycomb cells from the edge.

**Note:** Bear in mind that the exposed time of approx. 5 min for blaugelb Hybrid Polymer Power Fix until a skin starts to form will depend on the ambient temperature and relative humidity.

## Step 3: installing the lower Trio**therm**+ profile

(A) Installation of the lower Trio**therm**+ profile



1. The specific position of the horizontal base should be marked on the structure according to the planned position of the window.  
Recommendation: use the breast edge of the window opening as a guide.
2. Press the prepared blaugelb Trio**therm**+ profile firmly against the structure, taking care that it remains in the marked position. The blaugelb Hybrid Polymer Power Fix sealant assists with locating. Its high initial adhesion will immediately hold the blaugelb Trio**therm**+ profile in the desired position.

Slight adjustments to its alignment will be possible for up to about 20 minutes after applying to the base.

**Note:** The base must be free of greasy separating layers (such as release oil on concrete structures). The recommended installation of a specimen will provide a better picture of the load-bearing capacity and of whether the sealant adheres sufficiently to the base.

## Step 3: installing the lower Trio**therm**<sup>+</sup> profile

### (B) Alignment of the lower Trio**therm**<sup>+</sup> profile



Align the blaugelb Trio**therm**<sup>+</sup> profile horizontally in the desired position.

Recommended tool: Use a long spirit level (Meesenburg Item No.: 0233673 or a water level gauge).  
Alternatively: laser measuring instrument

## Step 3: installing the lower Trio**therm**<sup>+</sup> profile

### (C) Screwing on the lower Trio**therm**<sup>+</sup> profile



1. Mark the mechanical fastening points on the blaugelb Trio**therm**<sup>+</sup> profile  
**Fastening points required:**  
100 mm from each of the left and right outer edges of the lower, horizontally fixed blaugelb Trio**therm**<sup>+</sup> profile. If the distance between fastening points is > 700 mm, or if the window to be installed is divided by vertical posts, additional fastening points to the base will be needed. Ensure that the required distance of at least 35 mm from the edge of the structure is observed, the ideal position is in the centre of the profile.  
**Note:** to distribute the necessary mechanical fastening points required for the system, please observe the enclosed overview. **(See Appendix I)**
2. Mechanical anchoring of the blaugelb Trio**therm**<sup>+</sup> profile in the base is achieved by using the blaugelb Frame screws Fix FK-T30 that are part of the system. Pre-drill the structure through the blaugelb Trio**therm**<sup>+</sup> profile when located in position.  
**Note:** please refer to the enclosed overview table for the required information on type of hole, hole depth, hole diameter and the required screwing-in depths for the system. **(See Appendix II)**
3. Drill the first hole, blow it clear of drilling dust and then check the position of the blaugelb Trio**therm**<sup>+</sup> profile again, and finally screw in the blaugelb Frame screw Fix FK-T30 using a cordless screwdriver. Now set the other blaugelb Frame screw Fix FK-T30 screws in the same way.



## Step 5: installing the upper Trio**therm**<sup>+</sup> profiles

### (A) Sealing and installation of the upper Trio**therm**<sup>+</sup> profiles



1. To determine the length and combination of the component parts, follow exactly the same procedure as described for the lower horizontal element
2. Apply blaugelb Hybrid Polymer Power Fix on the wall-facing surface, as described above.
3. Apply blaugelb Hybrid Polymer Power Fix sealing compound to the butt joints of the vertical blaugelb Trio**therm**<sup>+</sup> profiles and the horizontal profiles that are now to be installed.
4. Position the blaugelb Trio**therm**<sup>+</sup> profiles and press firmly into place
  - a) on wall material
  - b) on vertical profile

## Step 5: installing the upper Trio**therm**<sup>+</sup> profiles

### (B) Screwing on the upper Trio**therm**<sup>+</sup> profiles



1. Mark the mechanical fastening points on the Trio**therm**<sup>+</sup> profile.  
Fastening points required: 100 mm from each of the left and right outer edges of the lower, horizontally fixed Trio**therm**<sup>+</sup> profiles. If the distance between fastening points is greater than 820 mm, or if the window to be installed is divided by vertical posts, additional fastening points to the base will be needed. Ensure that the required distance is observed (at least 35 mm from the edge of the structure, ideal position = in centre of profile)  
**Note:** to distribute the necessary mechanical fastening points required for the system, please consult the enclosed over-view. (See Appendix I)
2. Mechanical anchoring of the Trio**therm**<sup>+</sup> profile in the base is achieved by using the blaugelb Frame screws Fix FK-T30 that are part of the system.
3. Pre-drill the structure through the Trio**therm**<sup>+</sup> profile when located in position.  
**Note:** please refer to the enclosed Appendix II for the required information on type of hole, hole depth, hole diameter and the required screwing-in depths for the system.
4. Drill holes and blow clear of drilling dust. Check position of the Trio**therm**<sup>+</sup> profile, screw in blaugelb Frame screw Fix FK-T30 using a cordless screwdriver. Set all the remaining screws required in the same way.



# Installation instructions for blaugelb Trio**therm**<sup>+</sup> system

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## The Trio**therm**<sup>+</sup> system



The blaugelb Trio**therm**<sup>+</sup> system comprising the blaugelb profiles, the blaugelb Hybrid Polymer Power Fix and the blaugelb Frame screw Fix FK-T30 is now fully installed and is ready for expert installation of the window.

The sealing method using multifunctional tape and film used by us in the installation instructions is merely intended as an illustration; a free choice of sealing methods that meet the requirements of expert window installation is available.

## Step 6: Expert window installation

(A) Affixing the multifunctional tape Trio**SDL**<sup>600</sup>



1. Select the blaugelb multifunctional tape Trio**SDL**<sup>600</sup> according to the planned joint width and window frame depth
2. Position blaugelb multifunctional tape Trio**SDL**<sup>600</sup> running continuously round three sides (top + sides) of the window frame.

**Note:** Allow for additional material (approx. 10 mm/linear metre of window frame) to ensure that the joint intersection is finished according to standard. (DIN 18542)

3. Set window frame in frame aperture.

## Step 7: expert window installation

### (B) Fastening of the window frame element



1. Align window perpendicularly and horizontally.
2. Screw the trim frame into the Trio**therm**<sup>+</sup> profile according to the fixing specifications
3. Observe the fixing spacings. (**see Appendix I**)
4. Use the system-approved blaugelb Frame screw Fix.  
Recommendation:   blaugelb Frame screw Fix FK-T30 for plastic windows  
                          blaugelb Frame screw Fix ZK-T30 for wood/wood and aluminium windows
5. Determine the length of screw required:  
  
    Window frame width (view from inside)  
    + Planned joint width  
    + Screw-in depth into blaugelb Trio**therm**<sup>+</sup> profile (min. 60 mm)  

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**= Minimum screw length**

## Step 7: expert window installation

### (C) Outer lower seal on Trio**therm**<sup>+</sup> system



Remove the backing paper from the blaugelb foil Duo**SL**<sup>1050</sup> Power Plus at the handy perforation.

Gradually apply blaugelb foil Duo**SL**<sup>1050</sup> Power Plus with the help of the self-adhesive strip and without adding a foil adhesive, then firm down with a roller to assure full-surface adhesion.

# Installation instructions for blaugelb Trio**therm**+ system

How to achieve perfect insulation.

## Step 7: expert window installation

(C) Inner lower seal on Trio**therm**+ system



Apply the blaugelb film Duo**SL**<sup>1050</sup> Power Plus at the lower joint. The corner is finished as illustrated.

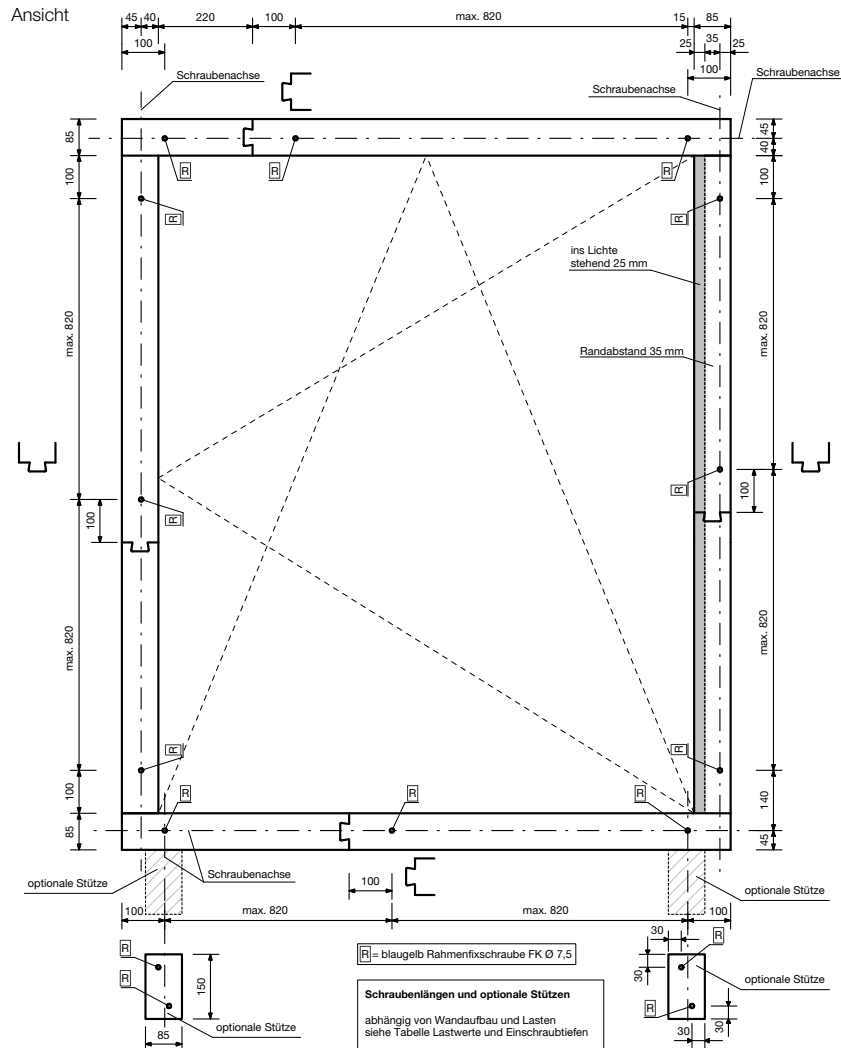
Gradually apply blaugelb foil Duo**SL**<sup>1050</sup> Power Plus with the help of the self-adhesive strip and without adding a foil adhesive, then firm down with a roller to assure full-surface adhesion.

## The blaugelb Trio**therm**+ system

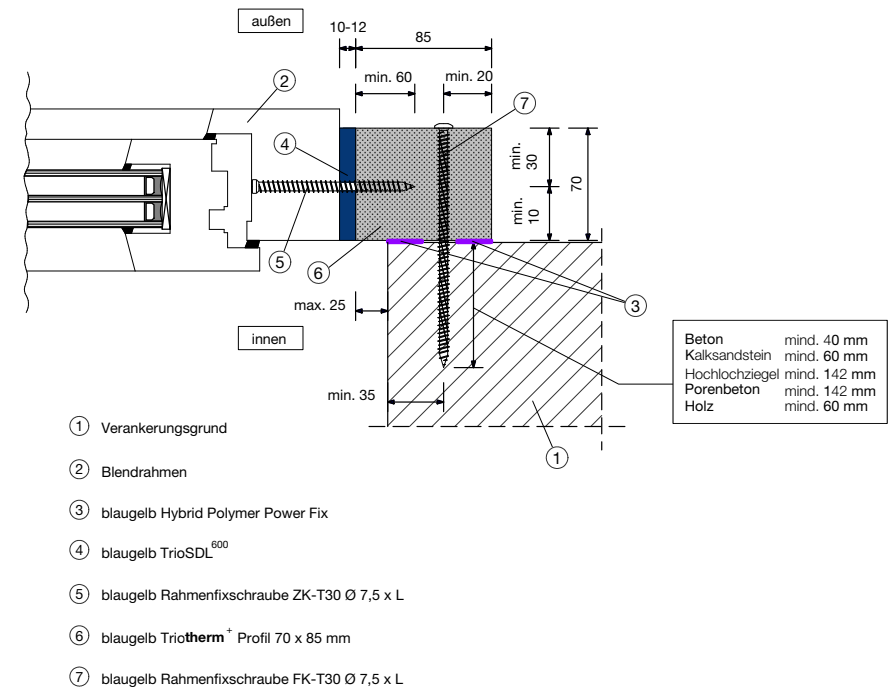
Expert window installation



## Appendix I: Fastening points on the Trio**therm**<sup>+</sup> system



Distance from the edges (min./max.)



## Appendix II: Load values and screw-in depths

Load values per fastening point

blaugelb Triotherm <sup>+</sup> Profiles	Load values	Base material Quality				
		Concrete C25	Sand-lime brick Compression strength class 12	Brick Compression strength class 8	Porous concrete, wood PP4 / PP2	Wood ≥ 450 kg/m <sup>3</sup>
<b>70 x 85 mm</b> without support	Values in N	1571	1571	1571	1571	1571
	Values in kg	160	160	160	160	160
<b>100 x 85 mm</b> without support	Values in N	1275	1275	1275	1275	1275
	Values in kg	130	130	130	130	130
<b>100 x 85 mm</b> with support 150 mm	Values in N	2754	2754	2754	2754	2754
	Values in kg	280	280	280	280	280
<b>120 x 85 mm</b> without support	Values in N	1275	1275	1275	1275	1275
	Values in kg	130	130	130	130	130
<b>120 x 85 mm</b> with support 150 mm	Values in N	2754	2754	2754	2754	2754
	Values in kg	280	280	280	280	280
<b>160 x 85 mm</b> with support 150 mm	Values in N	1805	1805	1805	1805	1805
	Values in kg	184	184	184	184	184

Screw-in depths

Window in blaugelb Triotherm <sup>+</sup>	Screw length dependent on frame material and overall width
10 mm Fuge	122 mm <sup>1</sup>
15 mm Fuge	132 mm <sup>1</sup>
20 mm Fuge	132 mm <sup>1</sup>

<sup>1</sup> Using plastic window as example

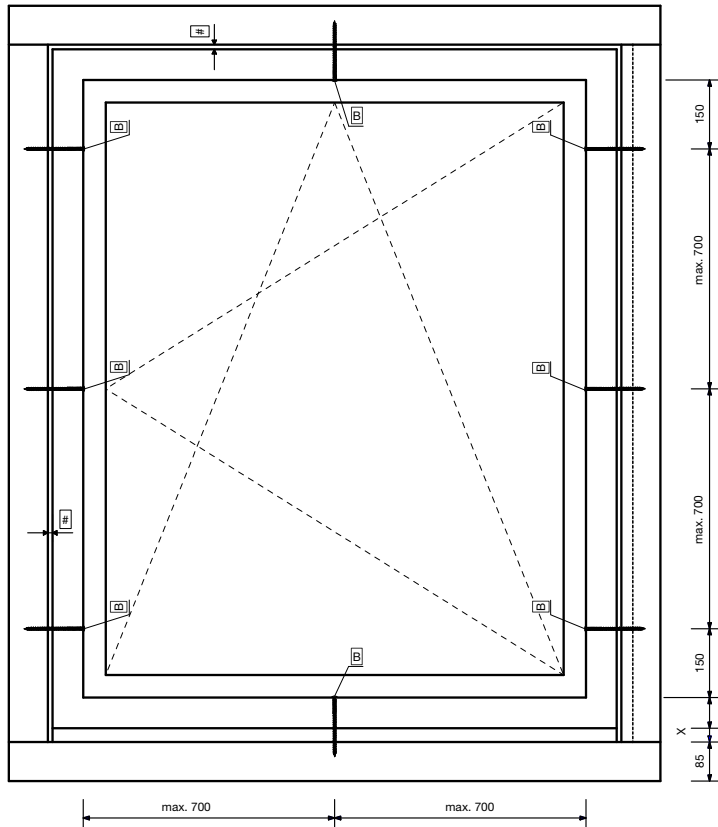
Consult us if you are uncertain about the load values or screw-in depths.

Screw-in depths in base

blaugelb Triotherm <sup>+</sup> Profiles	Screw information	Base material Quality				
		Concrete C25	Sand-lime brick Compression strength class 12	Brick Compression strength class 8	Porous concrete, wood PP4 / PP2	Wood ≥ 450 kg/m <sup>3</sup>
<b>70 x 85 mm</b> without support	Screw-in depth in mm	min. 40	min. 60	min. 142	min. 142	min. 60
	Screw length in mm	112	132	212	212	132
	Pre-drilling in base	Ø 6 mm	Ø 6 mm	Ø 5 mm	no	Ø 6 mm
<b>100 x 85 mm</b> without support	Screw-in depth in mm	min. 40	min. 60	min. 142	min. 142	min. 60
	Screw length in mm	132*	152*	252	252	152*
	Pre-drilling in base	Ø 6 mm	Ø 6 mm	Ø 5 mm	no	Ø 6 mm
<b>100 x 85 mm</b> with support 150 mm	Screw-in depth in mm	min. 40	min. 60	min. 142	min. 142	min. 60
	Screw length in mm	132*	152*	252	252	152*
	Pre-drilling in base	Ø 6 mm	Ø 6 mm	Ø 5 mm	no	Ø 6 mm
<b>120 x 85 mm</b> without support	Screw-in depth in mm	min. 40	min. 60	min. 142	min. 142	min. 60
	Screw length in mm	182	182	252*	252*	182
	Pre-drilling in base	Ø 6 mm	Ø 6 mm	Ø 5 mm	no	Ø 6 mm
<b>120 x 85 mm</b> with support 150 mm	Screw-in depth in mm	min. 40	min. 60	min. 142	min. 142	min. 60
	Screw length in mm	182	182	252*	252*	182
	Pre-drilling in base	Ø 6 mm	Ø 6 mm	Ø 5 mm	no	Ø 6 mm
<b>160 x 85 mm</b> with support 150 mm	Screw-in depth in mm	min. 40	min. 60	min. 142	min. 142	min. 60
	Screw length in mm	212	212*	300	300	212*
	Pre-drilling in base	Ø 6 mm	Ø 6 mm	Ø 5 mm	no	Ø 6 mm

\*: Countersunk the fastening screws 10 mm into the blaugelb Triotherm<sup>+</sup> profiles

## Appendix III: blaugelb Trio**therm**<sup>+</sup> system Installation drawings incl. window element

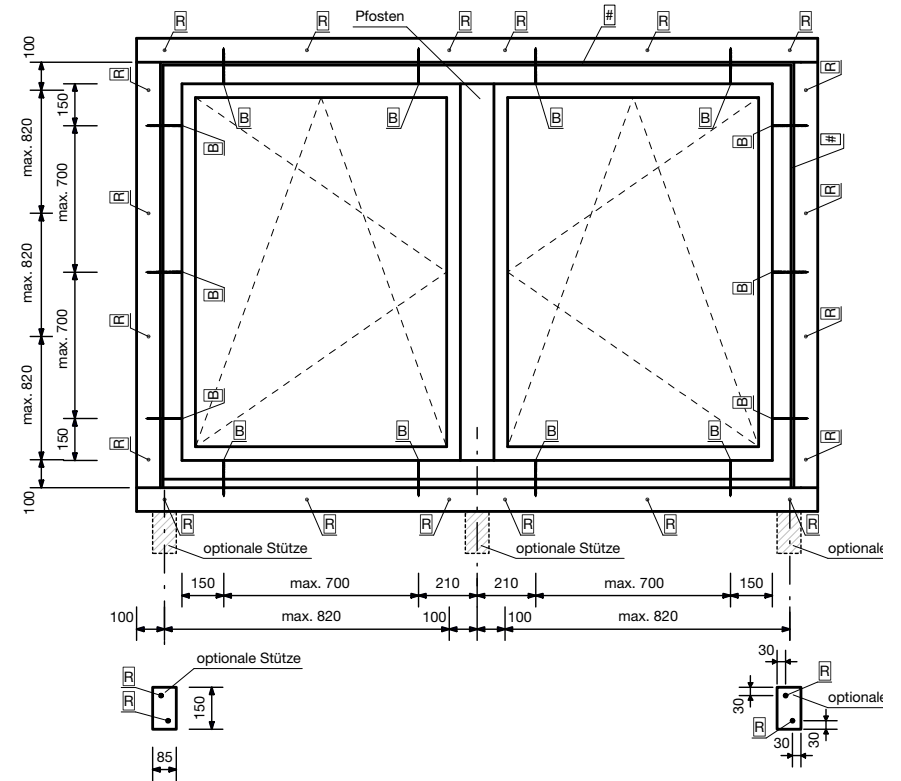


# Fugenmaß entsprechend der Längenänderung ( $\Delta T$ ) des Rahmenmaterials

R = blaugelb Rahmenfixschraube FK Ø 7,5

B = Befestigung in den Verankerungsgrund mit blaugelb Rahmenfixschrauben FK/ZK Ø 7,5 x L  
L = **Einschraubtiefe ins Trio**therm**<sup>+</sup> mind. 60mm**

X Fensterbank Anschlussprofil direkt auf Trio**therm**<sup>+</sup> aufgesetzt



R = blaugelb Rahmenfixschraube FK Ø 7,5

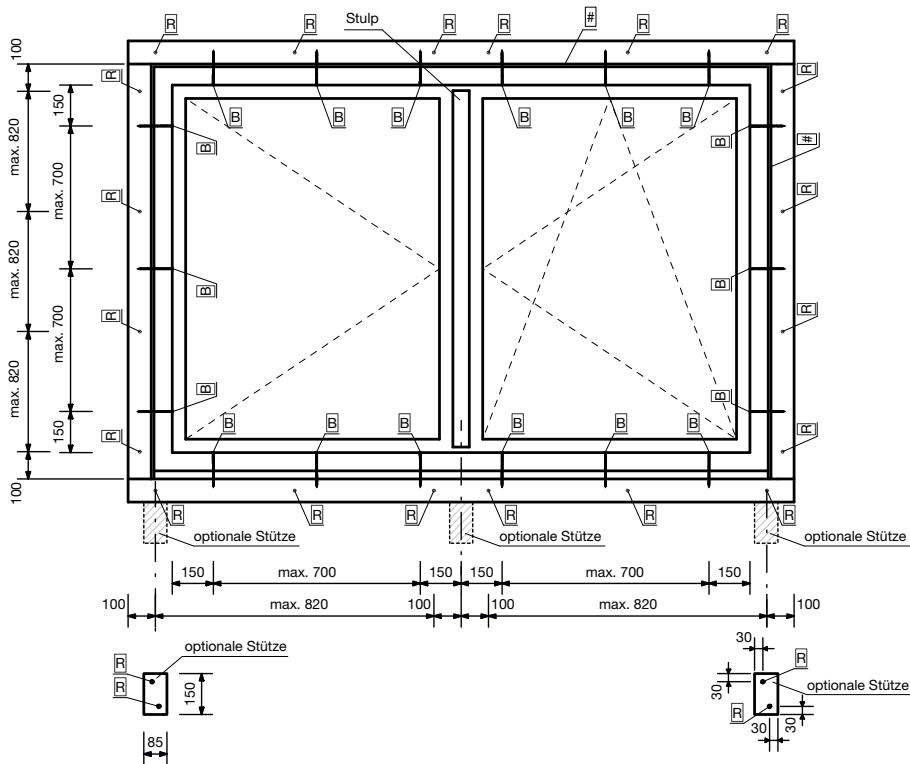
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**Schraubenlängen und optionale Stützen**  
abhängig von Wandaufbau und Lasten  
siehe Tabelle Lastwerte und Einschraubtiefen

X Fensterbank Anschlussprofil direkt auf Trio**therm**<sup>+</sup> aufgesetzt

# Fugenmaß entsprechend der Längenänderung ( $\Delta T$ ) des Rahmenmaterials

## Appendix III: blaugelb Trio**therm**<sup>+</sup> system Installation drawings incl. window element



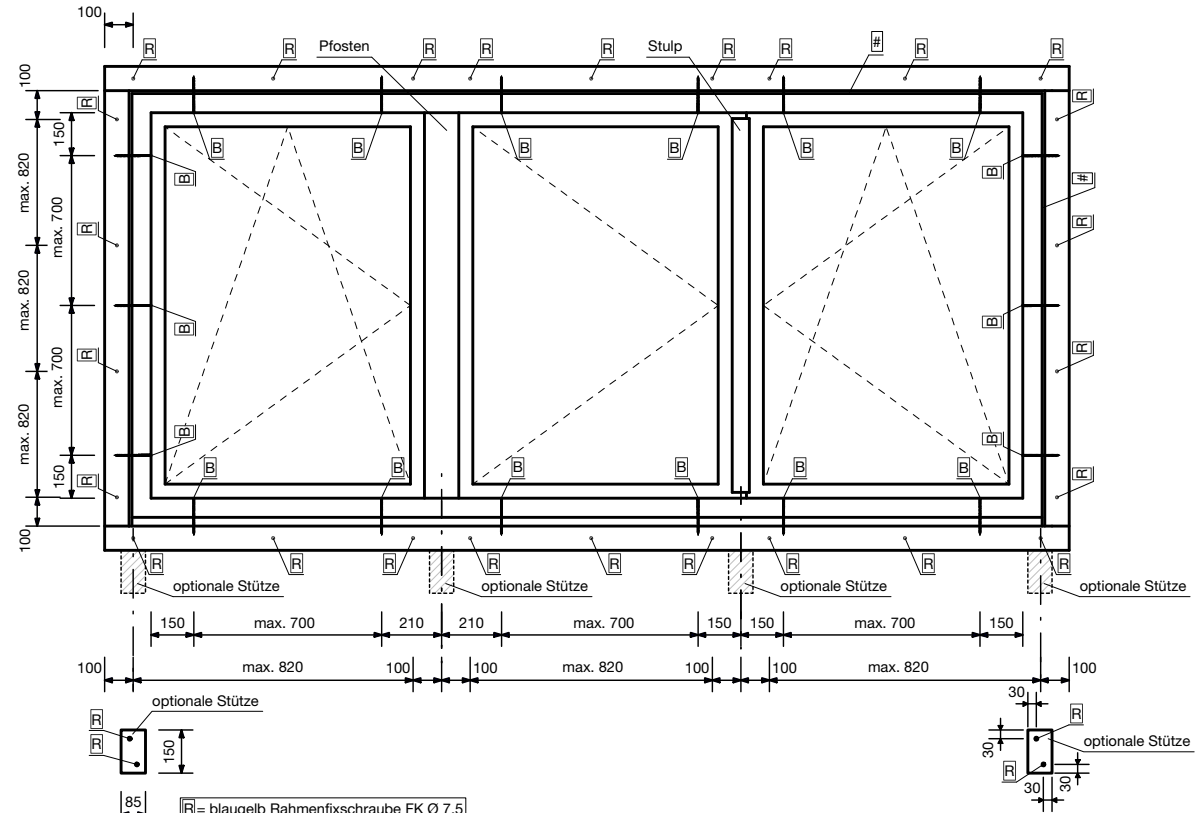
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X Fensterbank Anschlußprofil  
 direkt auf Trio**therm**<sup>+</sup> aufgesetzt

# Fugenmaß entsprechend  
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