

## National technical approval / General construction technique permit

Zulassungsstelle für Bauprodukte und Bauarten

Bautechnisches Prüfamt

Eine vom Bund und den Ländern  
gemeinsam getragene Anstalt des öffentlichen Rechts

Mitglied der EOTA, der UEAtc und der WFTAO

Date:

Reference:

7 January 2019 | 26-1.21.8-33/16

**Number:**

**Z-21.8-2088**

**Applicant:**

**Wessendorf Systembeschichtungen GmbH**

Wilhelm-Bunsen-Straße 5

49685 Emstek, Germany

**Validity**

from: **7 January 2019**

to: **7 January 2024**

**Subject of decision:**

**ISOrocket® scaffold anchor**

The subject named above is herewith granted a national technical approval (*allgemeine bauaufsichtliche Zulassung*)/general construction technique permit (*allgemeine Bauartgenehmigung*). This decision contains seven pages and six annexes.

Translation authorised by DIBt

DIBt

## I GENERAL PROVISIONS

- 1 This decision confirms the fitness for use and application of the subject concerned within the meaning of the Building Codes of the federal states (*Landesbauordnungen*).
- 2 This decision does not replace the permits, approvals and certificates required by law for carrying out building projects.
- 3 This decision is granted without prejudice to the rights of third parties, in particular private property rights.
- 4 Notwithstanding further provisions in the 'Special Provisions', copies of this decision shall be made available to the user and installer of the subject concerned. The user and installer of the subject concerned shall also be made aware that this decision must be made available at the place of use or place of application. Upon request, copies of the decision shall be provided to the authorities involved.
- 5 This decision shall be reproduced in full only. Partial publication requires the consent of DIBt. Texts and drawings in promotional material shall not contradict this decision. In the event of a discrepancy between the German original and this authorised translation, the German version shall prevail.
- 6 This decision may be revoked. The provisions contained therein may subsequently be supplemented and amended, in particular if this is required by new technical findings.
- 7 This decision is based on the information and documents provided by the applicant. Alterations to this basis are not covered by this decision and shall be notified to DIBt without delay.
- 8 The general construction technique permit included in this decision also serves as a national technical approval for the construction technique.

## II SPECIAL PROVISIONS

### 1 Subject concerned and field of use and application

#### 1.1 Subject concerned

The scaffold anchor ISOrocket® mini, medi, maxi, mega (hereinafter referred to only as 'anchor') is a thermal separating element for temporary scaffolding anchorages which remains permanently on the structure (permanent anchor).

The anchor consists of an anchor body, the 'rocketbody', made of steel coated with glass fibre-reinforced polyamide, and a connecting plate, the 'rocketbase concrete' (for concrete substrates) or 'rocketbase masonry' (for masonry substrates), made of galvanised steel with an M18 connecting thread on to which the anchor body is screwed.

The anchor body consists of a sleeve with an internal thread for fastening the associated eyebolt, the 'rocketbolt', made of steel with a zinc flake coating and an organic topcoat. Following removal of the eyebolt, the opening is sealed with the 'rocketseal' plastic sealing plug.

The installed anchor is shown in Annex 1.

#### 1.2 Field of use and application

The anchor may be used as a single fixing for temporary anchoring of safety and facade scaffolds in accordance with DIN 4426:2017-01.

The 'rocketbase concrete' is fixed to the concrete with an anchoring system with an internal thread in accordance with a European Technical Approval / European Technical Assessment (ETA). The 'rocketbase masonry' is fixed to the masonry or concrete base material with four anchors in accordance with a European Technical Approval / European Technical Assessment (ETA).

The national technical approval included in this decision does not cover anchoring in masonry or concrete. Anchoring in masonry or concrete shall be verified based on the national technical approval (abZ) or European Technical Approval / European Technical Assessment (ETA) for the selected anchor.

The anchor may be used for anchorages under static and quasi-static loads.

After the scaffolding has been dismantled and the eyebolt has been unscrewed and removed, the cone is sealed with the supplied sealing plug. The anchor remains in the base material.

This national technical approval does not cover the scaffolding structures to be suspended.

The anchor shall only be used when there are no fire resistance requirements to be met by the entire structure including the anchor.

The anchor body and the connecting plate with the connecting thread shall be permanently situated in the thermal insulation after installation (see Annex 1).

## 2 Provisions for the construction product

### 2.1 Properties and composition

The anchor, the eyebolt and the sealing plug shall correspond to the specifications in the annexes in terms of their dimensions and material properties.

The material characteristics, dimensions and tolerances not given in this national technical approval shall comply with the information deposited with DIBt, the certification body and the external surveillance body.

### 2.2 Packaging, storage and marking

#### 2.2.1 Packaging and storage

The fixing system is supplied in a packaging unit containing the anchor body, the eyebolt with the required length, the sealing plug, the connecting plates for masonry and concrete, and the anchoring system in accordance with the national technical approval or ETA.

The anchor shall be stored under normal climate conditions. It shall not be extremely dry or frozen prior to installation.

#### 2.2.2 Marking

The packaging, instruction sheet or delivery note for the anchor, the eyebolt and the sealing plug shall be marked by the manufacturer with the national conformity mark (*Ü-Zeichen*) in accordance with the Conformity Marking Ordinances (*Übereinstimmungszeichen-Verordnungen*) of the federal states. The factory identifying mark, the approval number and the complete designation of the anchor shall also be stated on the packaging.

The mark shall only be applied if the requirements given in Section 2.3 are met.

The anchor's designation is made up of the product name and the size of the plastic cone, e.g. 'ISOrocket® medi'.

The manufacturer's mark, the size and the number of the national technical approval in accordance with Annex 2 shall be stamped on to each cone. The sealing plug shall be stamped with the manufacturer's mark and the number of the national technical approval in accordance with Annex 3.

### 2.3 Confirmation of conformity

#### 2.3.1 General requirements

The manufacturer shall confirm for each manufacturing plant that the anchor, the eyebolt and the sealing plug comply with the provisions of the national technical approval included in this decision by way of a declaration of conformity based on factory production control and a certificate of conformity issued by a certification body recognised for these purposes as well as on regular external surveillance carried out by a recognised inspection body in accordance with the following provisions.

To issue the certificate of conformity and for external surveillance, including the associated product testing to be carried out in the process, the manufacturer of the anchor shall use an appropriately recognised certification body and an appropriately recognised inspection body.

The declaration of conformity shall be submitted by the manufacturer through marking of the construction product with the national conformity mark including statement of the intended use.

The certification body shall send a copy of the certificate of conformity issued by it to DIBt.

### 2.3.2 Factory production control

A factory production control system shall be set up and implemented in each manufacturing plant. Factory production control shall be understood to be continuous surveillance of production by the manufacturer to ensure that the manufactured construction products satisfy the provisions of the national technical approval included in this decision.

The factory production control shall at least include the measures listed below.

Scope, type and frequency of factory production control shall be in accordance with the test plan deposited with DIBt and the external surveillance body.

The results of factory production control shall be recorded and evaluated. The records shall include at least the following information:

- designation of the construction product or the starting material and the components,
- type of check or test,
- date of manufacture and testing of the construction product or the starting material or the components,
- results of check and tests and, where applicable, comparison with the requirements,
- signature of the person responsible for factory production control.

The records shall be kept for at least five years and submitted to the inspection body used for external surveillance. They shall be submitted to DIBt and the competent supreme building authority upon request.

If the test result is unsatisfactory, the manufacturer shall immediately take the necessary measures to resolve the defect. Construction products which do not meet the requirements shall be handled in such a way that they cannot be confused with compliant products. After the defect has been remedied, the relevant test shall be repeated immediately – where technically feasible and necessary to show that the defect has been eliminated.

### 2.3.3 External surveillance

The factory production control system shall be inspected regularly, i.e. at least once a year, by means of external surveillance at each manufacturing plant.

Initial type-testing of the anchor shall be carried out within the scope of external surveillance. Samples for random testing shall also be taken. Sampling and testing shall be the responsibility of the recognised inspection body.

Scope, type and frequency of factory production control shall be in accordance with the test plan deposited with DIBt and the external surveillance body.

The results of certification and external surveillance shall be kept for at least five years. They shall be presented by the certification or inspection body to DIBt and the competent supreme building authority upon request.

### 3 Provisions for planning, design and execution

#### 3.1 Planning and design

##### 3.1.1 General

The anchorages shall be planned in line with good engineering practice. Verifiable calculations and design drawings shall be prepared in consideration of the loads to be anchored, the dimensions of the members and the tolerances.

The design drawings shall contain the exact positions of the anchors.

##### 3.1.2 Design

The resistance of the anchor (anchor components described in 1.1) is given in Annexes 5 and 6.

The transfer of the loads to be anchored in the anchoring system and in the member shall be provided in each individual case.

The anchoring system shall be designed in accordance with the applicable national technical approval or ETA.

The anchor may be regularly subjected to tension and shear loads.

The installation conditions (embedment depth, minimum thickness of member, minimum spacing and edge distances) for the anchoring system used in the base material shall be observed.

The scaffold anchor shall be dimensioned with partial safety factors in line with good engineering practice in accordance with the method described below.

For all possible load combinations, it shall be verified that the design value of the action effects  $E_d$  does not exceed the design value of resistance  $R_d$ .

$$E_d \leq R_d \quad (3.1)$$

$E_d$  = design value of the action effects (actions  $N_{Ed}$ ,  $V_{Ed}$ )

$R_d$  = design value of resistance (resistance  $N_{Rd}$ ,  $V_{Rd}$  in accordance with Annexes 5 and 6)

$$E_d = \gamma_F \cdot E_k \quad (3.2)$$

$E_k$  = characteristic value of the actions

$\gamma_F$  = partial safety factor of the actions

The required verification of the resistance under tension load is:

$$N_{Ed} \leq N_{Rd} \quad (3.3)$$

The required verifications of resistance under shear load are:

$$V_{Ed} \leq V_{Rd} \quad (3.4)$$

With the simultaneous action of tension and shear loads, the action of the shear load shall be converted to a tension load via the factor  $k$  (Annex 5, Table 3 and Annex 6, Table 5) and added to the action of the tension load. The following verifications shall be provided:

anchorage with 'rocketbase concrete':

$$N_{Ed} + V_{Ed} \times k \leq N_{Rd} \quad (3.5)$$

anchorage with 'rocketbase masonry':

$$0.25 N_{Ed} + (0.5 V_{Ed}) \times k \leq N_{Rd} \quad (3.6)$$

### 3.1.3 Displacements

Under the given tension and shear loads, the following displacements should be expected for short-term loading ( $\delta_{F0}$ ):

Axial tension: see national technical approval or ETA for the anchoring system used in the base material.

Shear load: see Annexes 5 and 6; the deformations of the employed anchoring system in accordance with the national technical approval or ETA shall additionally be taken into account.

A linear relationship between the displacements and the applied load can be assumed. For combined tension and shear loads, the displacements for the tension and shear components of the resultant load shall be determined separately and superimposed.

## 3.2 Provisions for execution

### 3.2.1 General requirements

The anchor shall only be used as a mass-produced fixing unit (as described in Section 2.2.1).

The anchor shall remain in the base material and may be used as an anchor point several times. If the eyebolt is reused at a new attachment point, it shall be treated with particular care during installation, disassembly and storage. Before it is used for a new attachment point, the eyebolt shall be checked for the purposes of ensuring it is in good condition; this also includes checking of the corrosion protection. Damaged, rusty or bent bolts shall not be (re)used. An example of damage is thread galling.

After the eyebolt has been unscrewed and removed, the cone shall be sealed with the supplied sealing plug.

### 3.2.2 Installation

Hole drilling, cleaning and installation of the anchor shall be carried out in accordance with the national technical approval or ETA.

The installation of the anchor shall be carried out in accordance with the design drawings prepared in accordance with Section 3.1.1 and the manufacturer's installation instructions (see Annex 4).

The concrete or masonry surface shall be flat at the attachment point. The anchor shall be lying flat against the base material following installation. The employed rocketglue bonding adhesive ensures the transfer of the compressive forces into the structure.

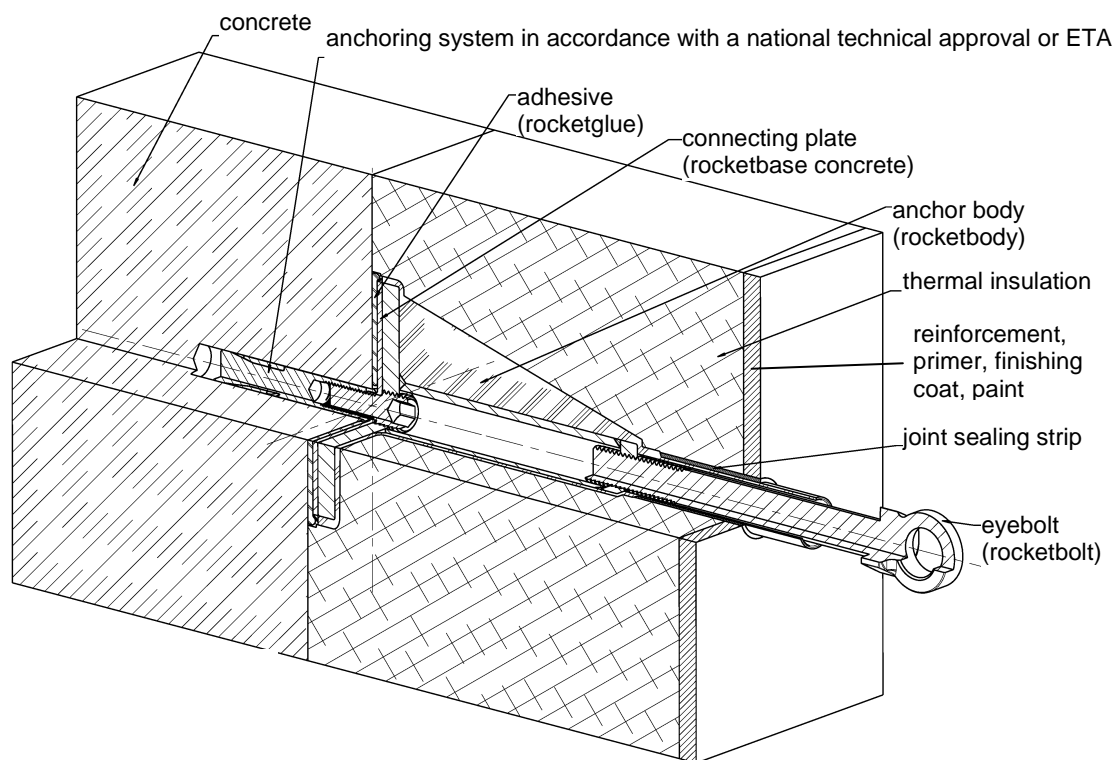
### 3.2.3 Inspection of execution

During the installation of the anchoring system and the anchor as well as during the attachment of a scaffold, the contractor commissioned to do so or the site manager assigned by him or her or a competent representative of the site manager shall be present on the construction site. He or she shall ensure that the work is carried out properly.

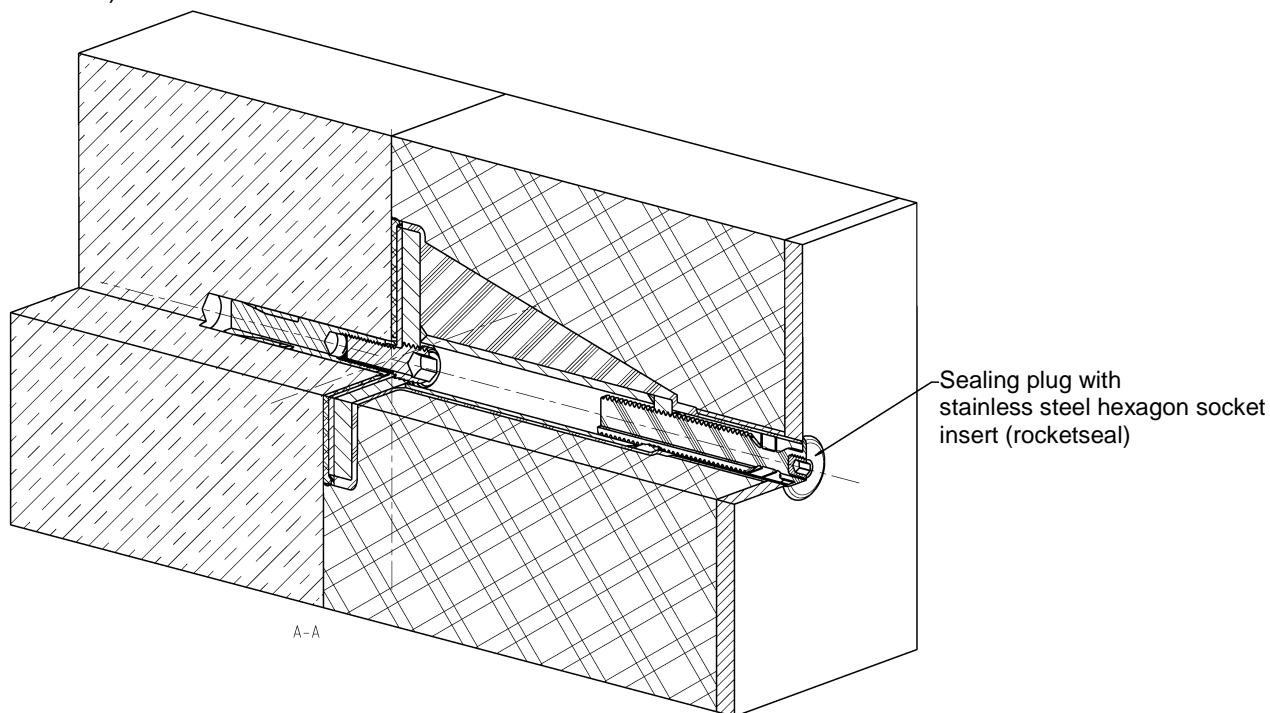
Records on the verification of the existing concrete strength, verification of the temperature in the base material and the proper installation of the anchorage shall be kept by the site manager or his or her representative.

The records shall be available at the construction site during the construction period and shall be handed over to the construction site supervisor upon request.

**Installed condition with eyebolt (ISOrocket® Medi for concrete shown in figure)**



**Installed condition without eyebolt  
 (with rocketseal)**



ISOrocket® scaffold anchor

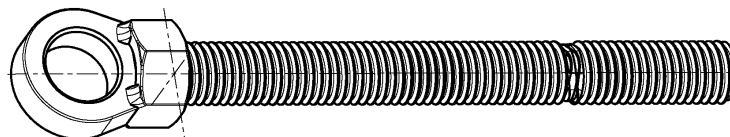
Installed condition

Annex 1



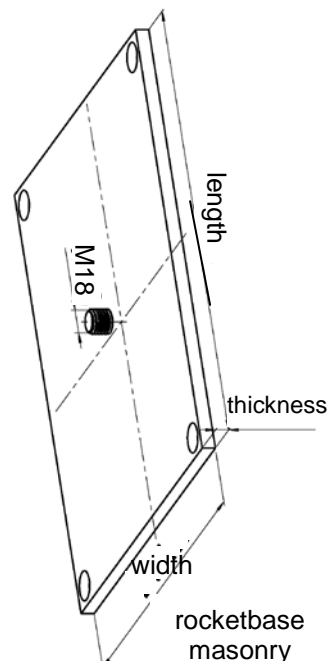
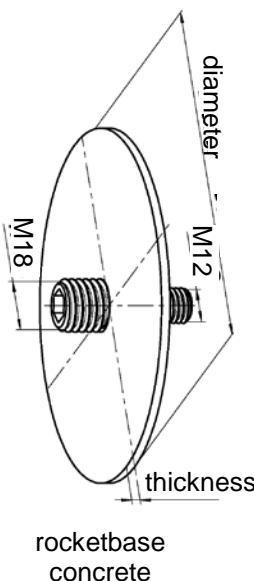
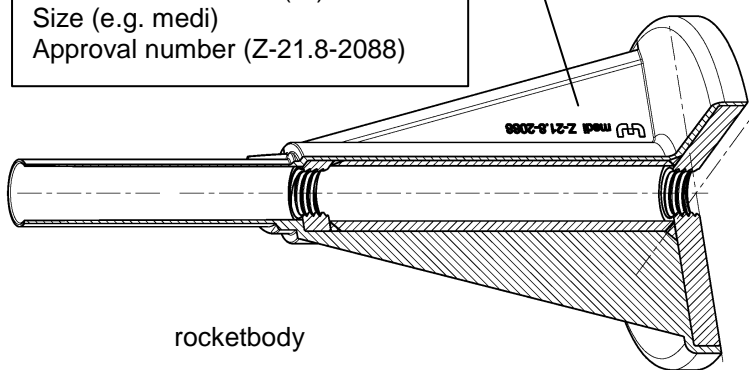
**Components of the ISOrocket® scaffold anchor**

**Eyebolt (rocketbolt)**



**Anchor body (rocketbody)  
 with connecting plate for concrete (rocketbase concrete)  
 or masonry (rocketbase masonry)**

Stamp:  
 Manufacturer's mark (W)  
 Size (e.g. medi)  
 Approval number (Z-21.8-2088)



**Table 1: ISOrocket® scaffold anchor dimensions**

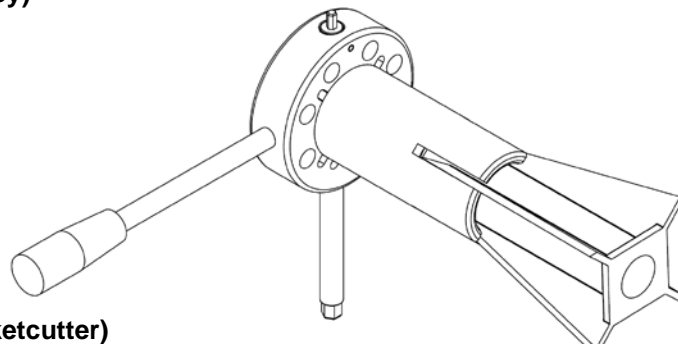
Name	Description	Size			
		mini	medi	maxi	mega
Colour		green	yellow	red	blue
rocketbase concrete	Diameter	90 mm	120 mm	150 mm	180 mm
	Thickness	3 mm	3 mm	3 mm	3 mm
	Connecting thread	M12 / M18			
rocketbase masonry	Length x width	280 x 280	330 x 280	420 x 280	500 x 280
	Thickness	10 mm	10 mm	10 mm	10 mm
	Connecting thread	M18	M18	M18	M18
rocketbody	Diameter at base	90 mm	120 mm	150 mm	180 mm
	Thickness at base	10 mm	10 mm	10 mm	10 mm
rocketbolt	Length of eyebolt	224 mm			
	Size	M18			

ISOrocket® scaffold anchor

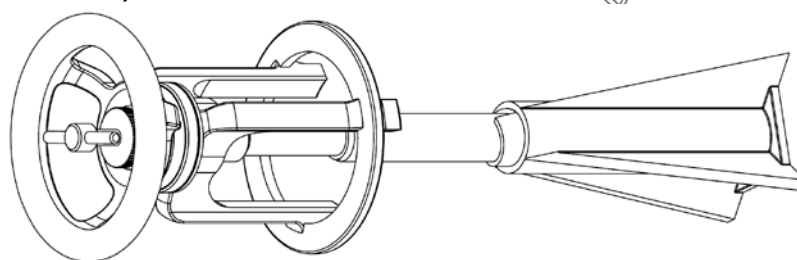
Scaffold anchor components and dimensions

Annex 2

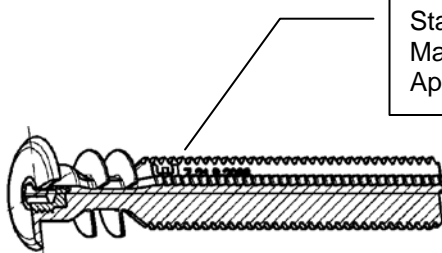
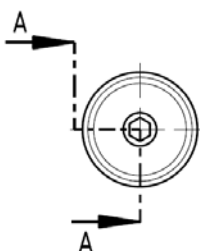
**Assembly tool (rocketkey)**



**Shortening device (rocketcutter)**



**Sealing plug (rocketseal)**



Stamp:  
 Manufacturer's mark (W)  
 Approval number (Z-21.8-2088)

**Table 2: Material characteristics**

Name	Description	Material
rocketbase concrete	Connecting plate	sheet metal DC01 in accordance with DIN EN 10130:2007-02, galvanised $\geq 5 \mu\text{m}$
	Connecting thread	steel, strength class 8.8, galvanised $\geq 5 \mu\text{m}$
rocketbase masonry	Connecting plate	steel S235JR in accordance with DIN EN 10025-2:2005-04, galvanised $\geq 5 \mu\text{m}$
	Connecting thread	steel, strength class 4.6, galvanised $\geq 5 \mu\text{m}$
rocketbody	Connecting plate	steel S355MC in accordance with DIN EN 10149-2:2013-12
	Sleeve with internal thread	steel, S355
	Anchor body	glass fibre-reinforced polyamide PA6 GF30; colour: green, yellow, red or blue
rocketbolt	Eyebolt	steel, strength class 10.9, zinc flake coating with organic topcoat
rocketseal	Sealing plug	polyamide PA6.6 colour: natural
	Socket insert	stainless steel in accordance with EN 10088-3:2014

ISOrocket® scaffold anchor

Accessories, materials

Annex 3

### Installation instructions

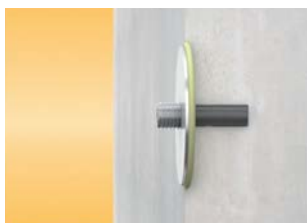
#### Concrete



Drill hole, clean hole and insert the anchoring system in accordance with the national technical approval or ETA.

Take the conditions from the national technical approval or ETA into account.

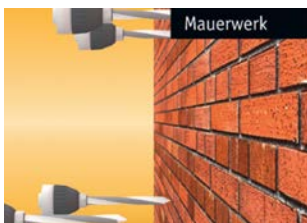
Install the internally threaded anchor (see approval) such that it is flush with the base material.



Completely wet the 'rocketbase concrete' connecting plate on the rear side with rocketglue bonding adhesive to saturation until the adhesive exits again from the side and ensures the full support of the connecting plate.

Screw the rocketbase concrete into the anchor and tighten using the rocketkey assembly key.

#### Masonry



Drill and clean the hole in accordance with the national technical approval or ETA.

Take the conditions from the national technical approval or ETA into account.



Completely wet the 'rocketbase masonry' connecting plate on the rear side with rocketglue bonding adhesive to saturation until the adhesive exits again from the side and ensures the full support of the connecting plate.

Install the anchor in accordance with the national technical approval or ETA.

#### Installation of the anchor body



Apply the thread-locking fluid rocketfix to the connecting thread.

Screw on the rocketbody anchor body using the rocketkey assembly key.



Screw the rocketbolt eyebolt all the way into the rocketbody plastic body and tighten hand-tight.

When dismantling the scaffolding, shorten the plastic sleeve of the anchor body to the upper edge of the final facade (e.g. render, facade panel, clinker) using the rocketcutter shortening device.

ISOrocket® scaffold anchor

Installation instructions

Annex 4

**Design resistances for ISOrocket® permanent scaffold anchor with eyebolt**

**Table 3: Resistance for use of 'rocketbase concrete'**

ISOrocket® size		mini	medi	maxi	mega
<b>Tension resistance</b>					
ISOrocket®	$N_{Rd}^{1)}$ [kN]	43.4			
<b>Shear resistance</b>					
ISOrocket®	$V_{Rd}^{1)}$ [kN]	2.56	2.56	2.07	1.71
<b>Interaction for tension and shear loads</b>					
ISOrocket® size		mini	medi	maxi	mega
Factor for ISOrocket®	k [-]	5.11	5.17	5.20	5.22

<sup>1)</sup> The resistance of the anchoring system used in the concrete shall additionally be verified.

**Table 4: Displacements  $\delta_{F0}$  [mm] under service loads for use in concrete**

ISOrocket® size		mini	medi	maxi	mega
Tension load F	[kN]	27.6	27.6	27.6	27.6
Displacements under tension load	[mm]	<sup>1)</sup>	<sup>1)</sup>	<sup>1)</sup>	<sup>1)</sup>
Shear load F	[kN]	1.83	1.83	1.48	1.22
Displacements under shear load	[mm]	7.2 <sup>2)</sup>	9.1 <sup>2)</sup>	9.5 <sup>2)</sup>	9.9 <sup>2)</sup>

<sup>1)</sup> The displacements of the anchoring system used in the base material are the relevant values.

<sup>2)</sup> The displacements of the anchoring system used in the base material shall additionally be taken into account.

ISOrocket® scaffold anchor	Annex 5
Resistance and displacements of the anchor in concrete	

**Design resistances for ISOrocket® permanent scaffold anchor with eyebolt**

**Table 5: Resistance for use of 'rocketbase masonry'**

ISOrocket® size		mini	medi	maxi	mega
<b>Tension resistance</b>					
ISOrocket®	$N_{Rd}^{1)}$ [kN]	11.00	9.70	8.00	6.80
<b>Shear resistance</b>					
ISOrocket®	$V_{Rd}^{1)}$ [kN]	2.56	2.56	2.07	1.71
<b>Interaction for tension and shear loads</b>					
Factor for ISOrocket®	k [-]	0.86	0.97	0.96	0.96

<sup>1)</sup> The resistance of the anchoring system used in the masonry shall additionally be verified.

**Table 6: Displacements  $\delta_{F0}$  [mm] under service loads for use in masonry**

ISOrocket® size		mini	medi	maxi	mega
Tension load F	[kN]	7.9	6.9	5.7	4.9
Displacements under tension load	[mm]	<sup>1)</sup>	<sup>1)</sup>	<sup>1)</sup>	<sup>1)</sup>
Shear load F	[kN]	1.83	1.83	1.48	1.22
Displacements under shear load	[mm]	7.2 <sup>2)</sup>	9.1 <sup>2)</sup>	9.5 <sup>2)</sup>	9.9 <sup>2)</sup>

<sup>1)</sup> The displacements of the anchoring system used in the base material are the relevant values.

<sup>2)</sup> The displacements of the anchoring system used in the base material shall additionally be taken into account.

ISOrocket® scaffold anchor	Annex 6
Resistance and displacements of the anchor in masonry	