Deutsches Institut für Bautechnik

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Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment ETA-16/0789 of 30 September 2020

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	Personal Fall-Protection System Primo 2 AD, Primo 3 AD-10, Primo 3 AD-12, Primo 3 SP-HO, Primo 6 AD
Product family to which the construction product belongs	Anchor Devices for Fastening Personal Fall Protection Systems to Concrete Structures
Manufacturer	Sicherheitskonzepte Breuer GmbH Broekhuysener Straße 40 47638 Straelen DEUTSCHLAND
Manufacturing plant	Sicherheitskonzepte Breuer GmbH Broekhuysener Straße 40 47638 Straelen Germany
This European Technical Assessment contains	15 pages including 11 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	EAD 331072-00-0601
This version replaces	ETA-16/0789 issued on 1 November 2018

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Specific part

1 Technical description of the product

The fall protection system Primo is made of stainless steel. It is fastened to reinforced normal concrete (cracked or uncracked), strength classes C20/25 to C50/60 and pre-stressed concrete with at least the strength class C45/55 according to EN 206.

The fall protection system Primo is fastened to the concrete with the different fasteners which can be seen in the annexes.

This ETA includes the products listed in the following **Table 1**:

Table 1: Products of this ETA

Annex No.	Trade Name (Product of this ETA)	Fastener	Note
2	Primo 2 AD	FAZ II 12/10 R	
3	Primo 3 AD-10	FAZ II 10/10 K R	only uncracked concrete
4	Primo 3 AD-12	FAZ II 12/10 K R	
5	Primo 3 SP-HO	FHY M10 A4	only pre-stressed concrete
6	Primo 6 AD	FAZ II 16/25 R	

The components and the system setup of the product are given in Annex (1-6).

2 Specification of the intended use in accordance with the applicable European Assessment Document 331072-00-0601

The fall protection system Primo is used to protect operators working at height (max. 3 persons at once), by arresting them in a fall. The operators attach themselves to the eye using e.g. ropes and karabiners. In the case of a fall the fall protection system Primo prevents the fall and resulting physical damage assuming the correct usage by the operator. The fall protection system Primo is designed for use in all areas of industry, construction and maintenance.

The fall protection system Primo is intended to be used, fastened or inserted on flat roofs or other flat planes made of concrete only. The direction of force therefore shall be perpendicular (90° ±5 %) to the fastening element. Thus use at a (concrete-) wall is intended only when the direction of force still applies at a 90 ° angle to the fastening axis.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the fall protection system Primo of at least 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1

3.2 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Static loading	see Annexes 2-6
Dynamic loading	see Annexes 2-6
Check of deformation capacity in case of constraining forces	deformation capacity at 0.7 kN see Annexes 2-6
Durability	No performance assessed

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD No. 331072-00-0601, the applicable European legal act is: Decision (EU) 2018/771.

The system to be applied is: 1+

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 30 September 2020 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow
Head of Department

beglaubigt:
Hahn

This ETA includes the product variants listed in Table 1:

Table 1: Product variants included in this ETA

Annex	Tradename (Product in this ETA)	Fastener	Substructure
2	Primo 2 AD	Bolt Anchor FAZ II 12/10 R[b]	reinforced concrete C20/25 to C50/60[a] (cracked and uncracked))
3	Primo 3 AD-10	Bolt Anchor FAZ II 10/10 K R[b]	reinforced concrete C20/25 to C50/60[a] (uncracked)
4	Primo 3 AD-12	Bolt Anchor FAZ II 12/10 K R[b]	reinforced concrete C20/25 to C50/60[a] (cracked and uncracked))
5	Primo 3 SP-HO	Hollow-ceiling anchor FHY M10 A4	hollow-core slabs of C45/55[a]
6	Primo 6 AD	Bolt Anchor FAZ II 16/25 R[b]	reinforced concrete C20/25 to C50/60[a] (cracked and uncracked))

Annexes 2 to 6 show the components and the system structure of the products.

Design values of actions

$F_{Ed} = F_{Ek} \cdot \gamma_F$

The recommended partial factor γ_F is 1,5.

The recommended partial factor is used in order to determine the corresponding design actions, provided no partial factor is given in national regulations or national Annexes to Eurocode 0. That leads to the following values:

Example:

For one User: $F_{Ed} = F_{Ek} \cdot \gamma_F = 6\ kN \cdot 1{,}5 = 9\ kN$
For two Users: $F_{Ed} = F_{Ek} \cdot \gamma_F = (6+1)\ kN \cdot 1{,}5 = 10{,}5\ kN$
For three Users: $F_{Ed} = F_{Ek} \cdot \gamma_F = (6+2)\ kN \cdot 1{,}5 = 12\ kN$

a EN 206:2013+A1:2016 Concrete - Specification, performance, production and conformity
b ETA-05/0069 fischer Bolt Anchor FAZ II, FAZ II R, FAZ II HCR

Fallprotection Primo	Annex 1
Design Values	

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Table 2: Substructure reinforced concrete C20/25 to C50/60 (cracked and uncracked)

Anchor Device	Bar height [mm]	Fastener	Edge distance C_{min} [mm]	Minimum substructure thickness h_{min} [mm]
Primo 2 AD	200-1000	FAZ II 12/10 R	200	120

All components can be used in weathered outdoor areas.

Regulations for Primo 2 AD on concrete
The concrete substructure is to be pre-drilled with a borehole diameter of 12mm and a borehole depth of ≥ 95mm. The installation is carried out with a torque of 60Nm.

The installation of all connecting elements and concrete anchors hast to be performed with an examined torque wrench. The concrete anchors are only allowed to be applied with loading if the required torque is applied.

Static loading / design resistance

$$F_{R,d} = \frac{F_{R,k}}{\gamma_M} = \frac{18{,}0}{1{,}5} = 12{,}0\ kN$$

The recommended partial factor γ_M is 1,5, provided no partial factor is given in national regulations or national Annexes to Eurocode 2.

Dynamic loading / design resistance
Three users

Deformation capacity
9 mm

Fallprotection Primo	Annex 2.1
Primo 2 AD for cracked and uncracked concrete	

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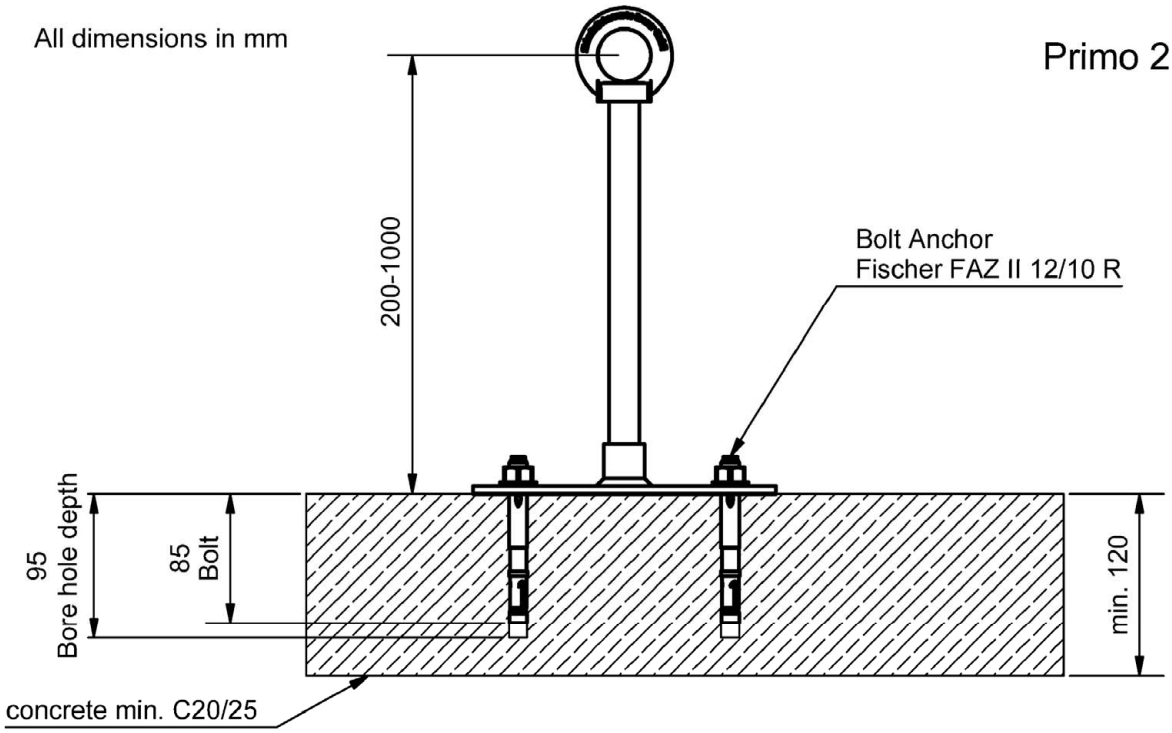
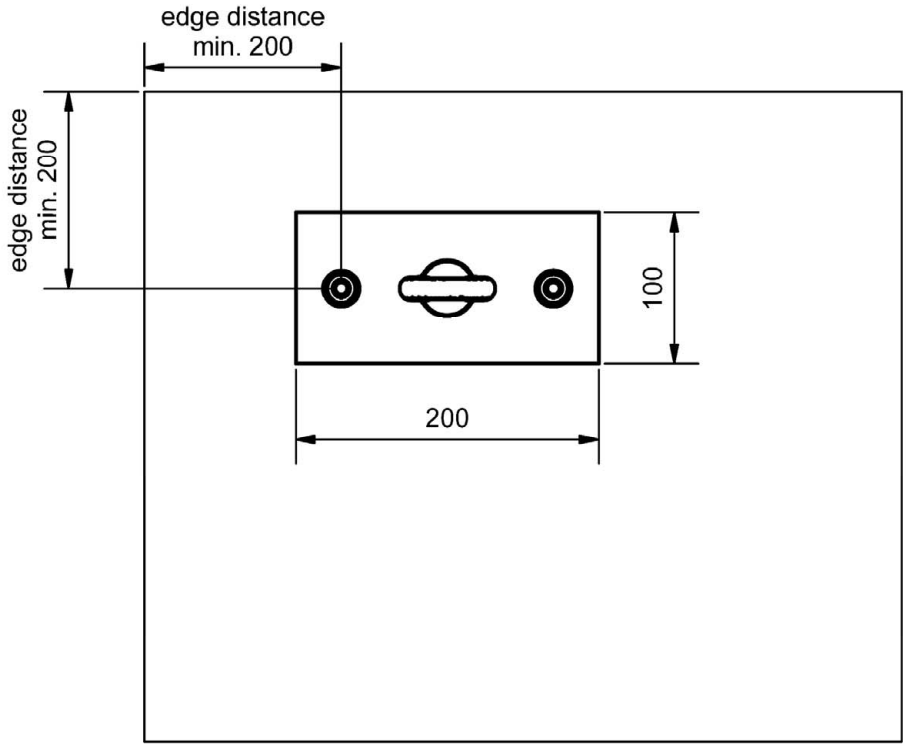
All dimensions in mm

Primo 2 AD





Fallprotection Primo	
Primo 2 AD for cracked and uncracked concrete	Annex 2.2

Table 3: Substructure reinforced concrete C20/25 to C50/60 (uncracked)

Anchor Device	Bar height [mm]	Fastener	Edge distance C_{min} [mm]	Minimum substructure thickness h_{min} [mm]
Primo 3 AD-10	200-1000	FAZ II 10/10 K R	200	80

The Primo 3 AD-10 may only be installed in non-cracked concrete (pressure zone). All components can be used in weathered outdoor areas.

Regulations for Primo 3 AD-10 on concrete
The concrete substructure is to be pre-drilled with a borehole diameter of 10mm and a borehole depth of ≥ 63mm. The installation is carried out with a torque of 45Nm.

The installation of all connecting elements and concrete anchors hast to be performed with an examined torque wrench. The concrete anchors are only allowed to be applied with loading if the required torque is applied.

Static loading / design resistance

$$F_{R,d} = \frac{F_{R,k}}{\gamma_M} = \frac{28{,}7}{1{,}5} = 19{,}1\ kN$$

The recommended partial factor γ_M is 1,5, provided no partial factor is given in national regulations or national Annexes to Eurocode 2.

Dynamic loading / design resistance
Three users

Deformation capacity
9 mm

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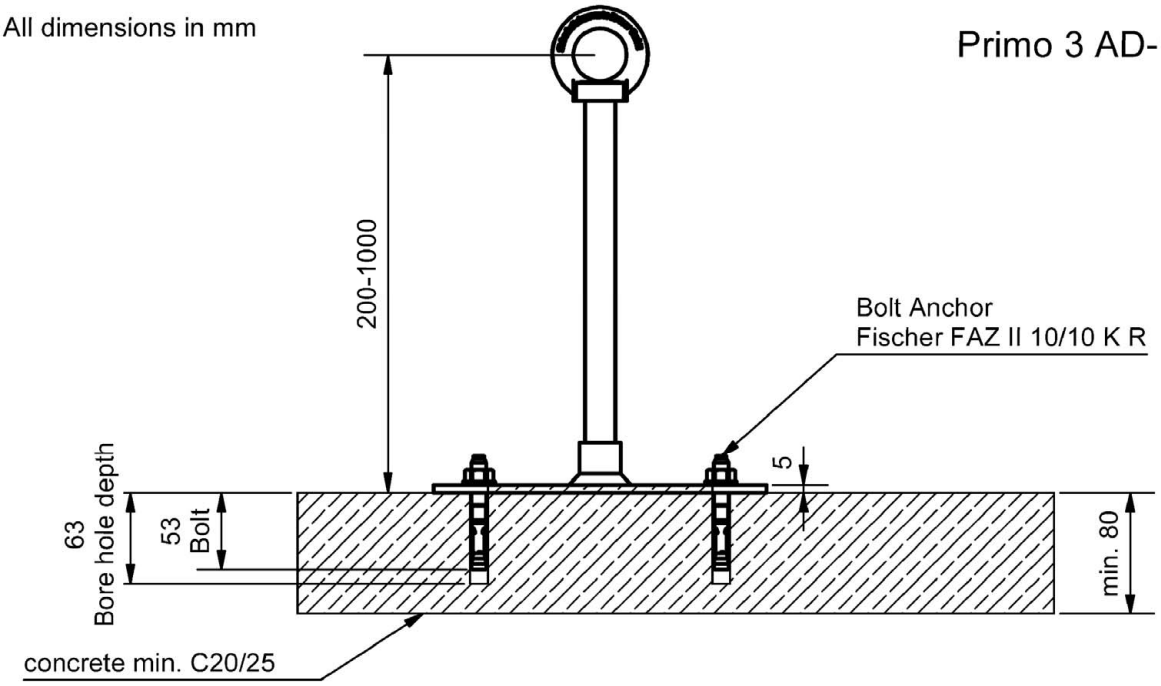
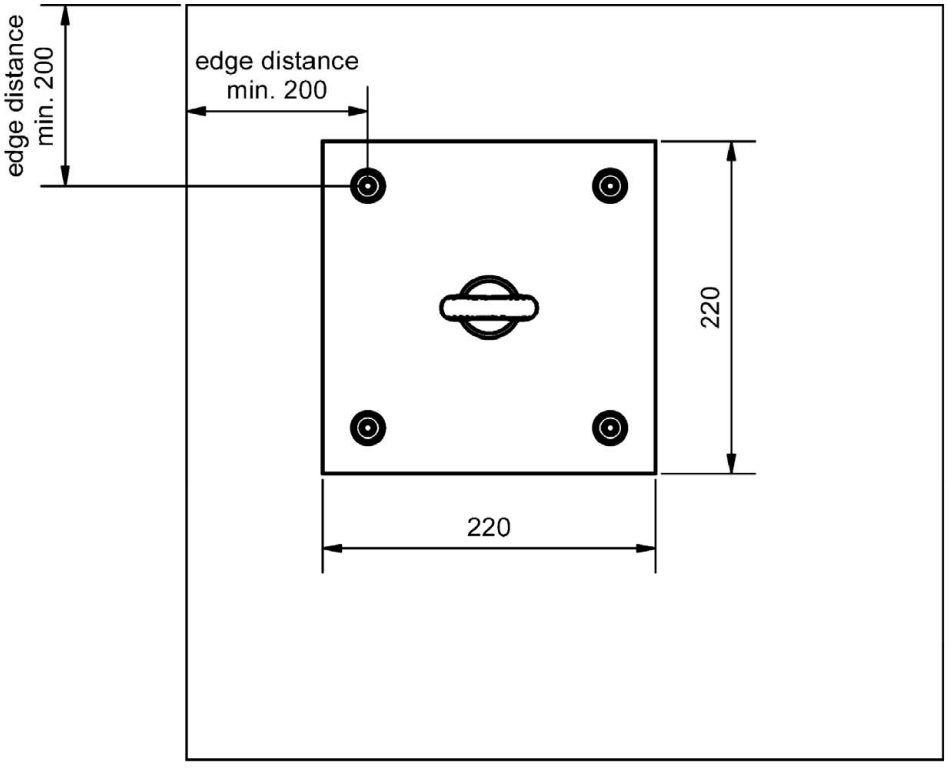
All dimensions in mm

Primo 3 AD-10





Fallprotection Primo	Annex 3.2
Primo 3 AD-10 for uncracked concrete	

Table 4: Substructure reinforced concrete C20/25 to C50/60 (cracked and uncracked)

Anchor Device	Bar height [mm]	Fastener	Edge distance C_{min} [mm]	Minimum substructure thickness h_{min} [mm]
Primo 3 AD-12	200-1000	FAZ II 12/10 K R	200	100

All components can be used in weathered outdoor areas.

Regulations for Primo 3 AD-12 on concrete
The concrete substructure is to be pre-drilled with a borehole diameter of 12mm and a borehole depth of ≥ 75mm. The installation is carried out with a torque of 60Nm.

The installation of all connecting elements and concrete anchors hast to be performed with an examined torque wrench. The concrete anchors are only allowed to be applied with loading if the required torque is applied.

Static loading / design resistance

$$F_{R,d} = \frac{F_{R,k}}{\gamma_M} = \frac{18{,}3}{1{,}5} = 12{,}2\ kN$$

The recommended partial factor γ_M is 1,5, provided no partial factor is given in national regulations or national Annexes to Eurocode 2.

Dynamic loading / design resistance
Three users

Deformation capacity
9 mm

Fallprotection Primo	Annex 4.1
Primo 3 AD-12 for cracked and uncracked concrete	

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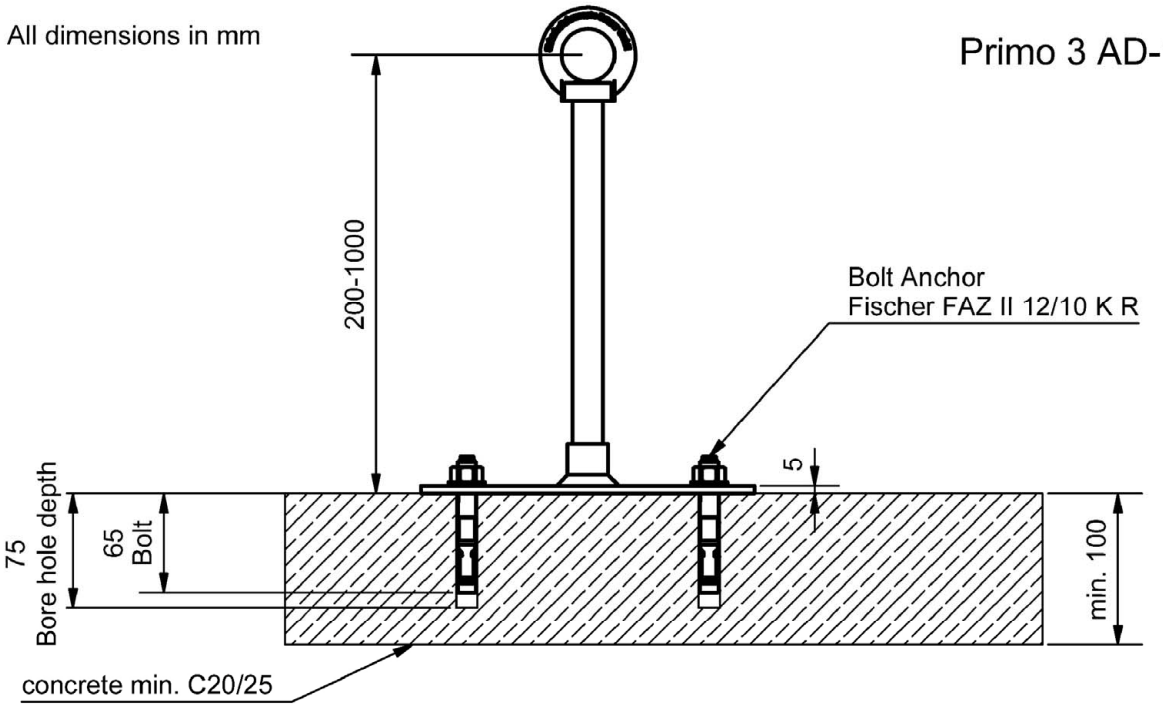
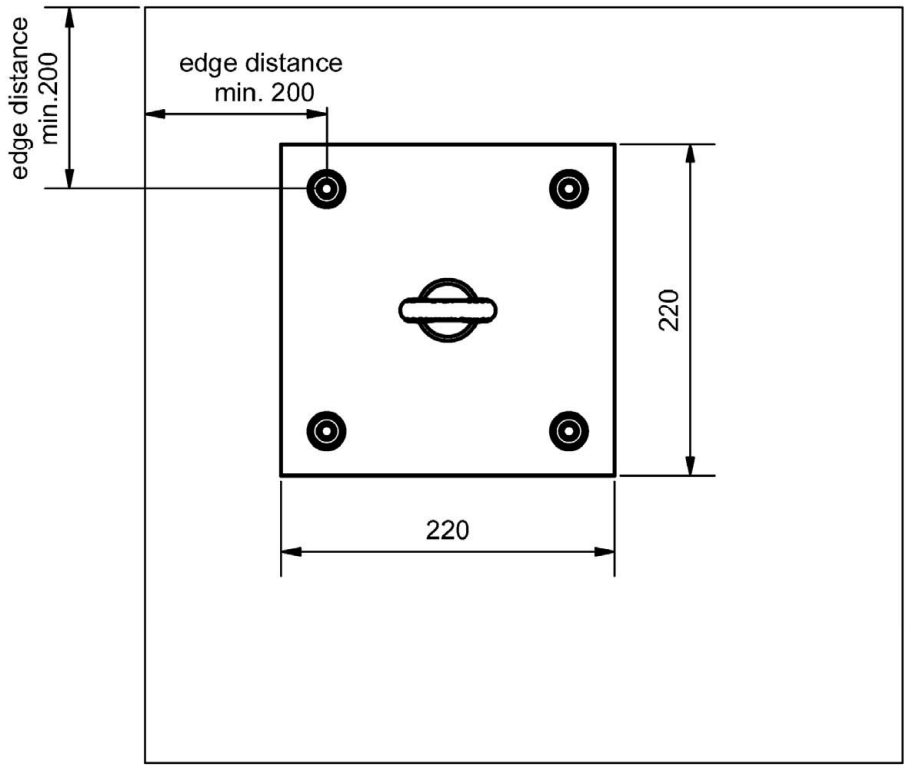
All dimensions in mm

Primo 3 AD-12





Fallprotection Primo	
Primo 3 AD-12 for cracked and uncracked concrete	Annex 4.2

Table 5: Substructure hollow-core slabs min. C45/55

Anchor Device	Bar height [mm]	Fastener	Edge distance C_{min} [mm]	Minimum substructure thickness h_{min} [mm]
Primo 3 SP-HO	200-1000	FHY M10 A4	300	27,5

All components can be used in weathered outdoor areas.

Regulations for Primo 3 SP-HO on hollow-core slabs
The concrete substructure is to be pre-drilled with a borehole diameter of 16mm and a borehole depth of ≥ 65mm. The installation is carried out with a torque of 20Nm.

The installation of all connecting elements and concrete anchors hast to be performed with an examined torque wrench. The concrete anchors are only allowed to be applied with loading if the required torque is applied.

Static loading / design resistance

$$F_{R,d} = \frac{F_{R,k}}{\gamma_M} = \frac{18{,}0}{1{,}5} = 12{,}0\ kN$$

The recommended partial factor γ_M is 1,5, provided no partial factor is given in national regulations or national Annexes to Eurocode 2.

Dynamic loading / design resistance
Three users

Deformation capacity
9 mm

Fallprotection Primo	Annex 5.1
Primo 3 SP-HO for hollow-core slabs	

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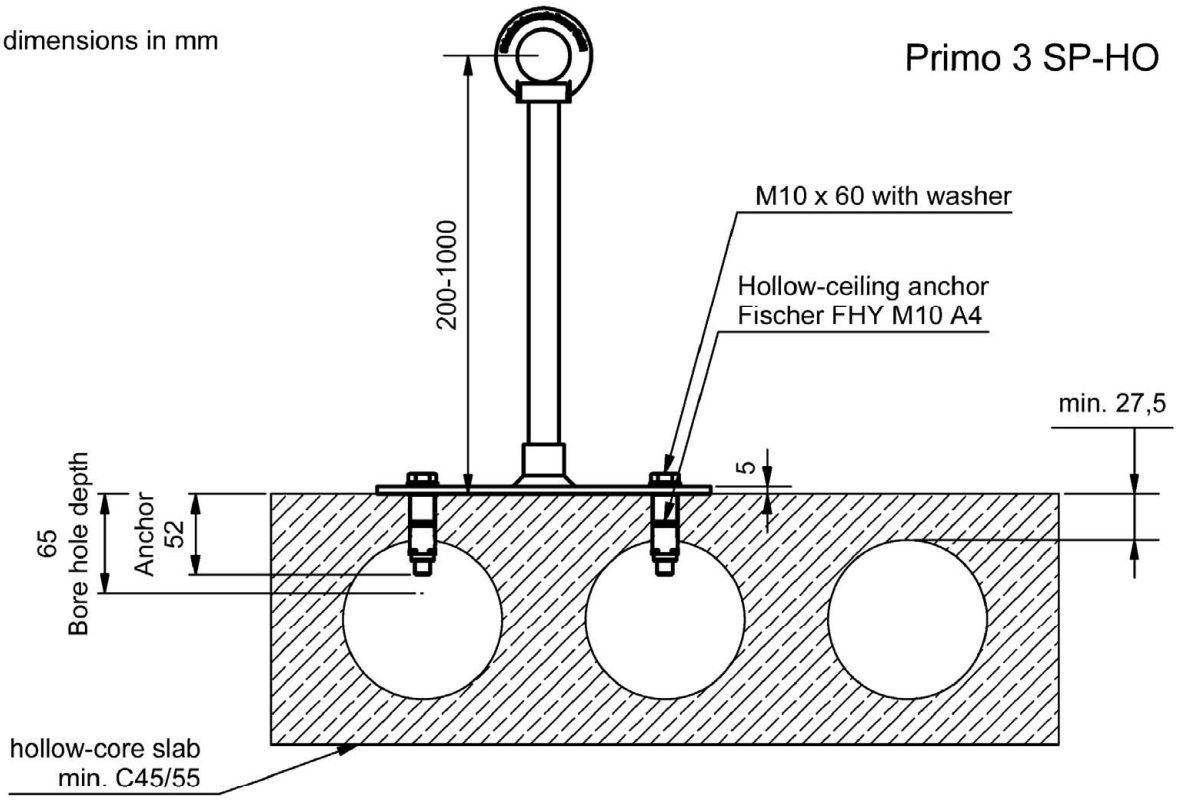
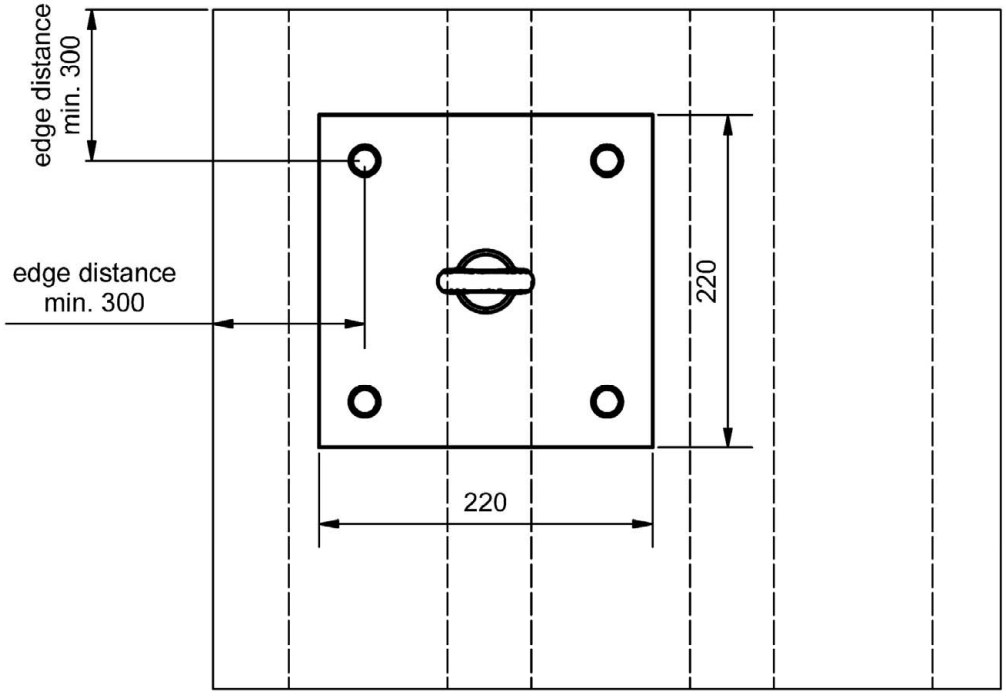
All dimensions in mm

Primo 3 SP-HO





Fallprotection Primo	
Primo 3 SP-HO for hollow-core slabs	Annex 5.2

Table 6: Substructure reinforced concrete C20/25 to C50/60 (cracked and uncracked)

Anchor Device	Bar height [mm]	Fastener	Edge distance C_{min} [mm]	Minimum substructure thickness h_{min} [mm]
Primo 6 AD	200-1000	FAZ II 16/25 R	300	140

All components can be used in weathered outdoor areas.

Regulations for Primo 6 AD on concrete
The concrete substructure is to be pre-drilled with a borehole diameter of 16mm and a borehole depth of ≥ 110mm. The installation is carried out with a torque of 110Nm. The thread of the anchor bolt must reach at least 45mm out of the concrete surface before installing the anchor device.

The installation of all connecting elements and concrete anchors hast to be performed with an examined torque wrench. The concrete anchors are only allowed to be applied with loading if the required torque is applied.

Static loading / design resistance

$$F_{R,d} = \frac{F_{R,k}}{\gamma_M} = \frac{22,7}{1,5} = 15,1\ kN$$

The recommended partial factor γ_M is 1,5, provided no partial factor is given in national regulations or national Annexes to Eurocode 2.

Dynamic loading / design resistance
Three users

Deformation capacity
6 mm

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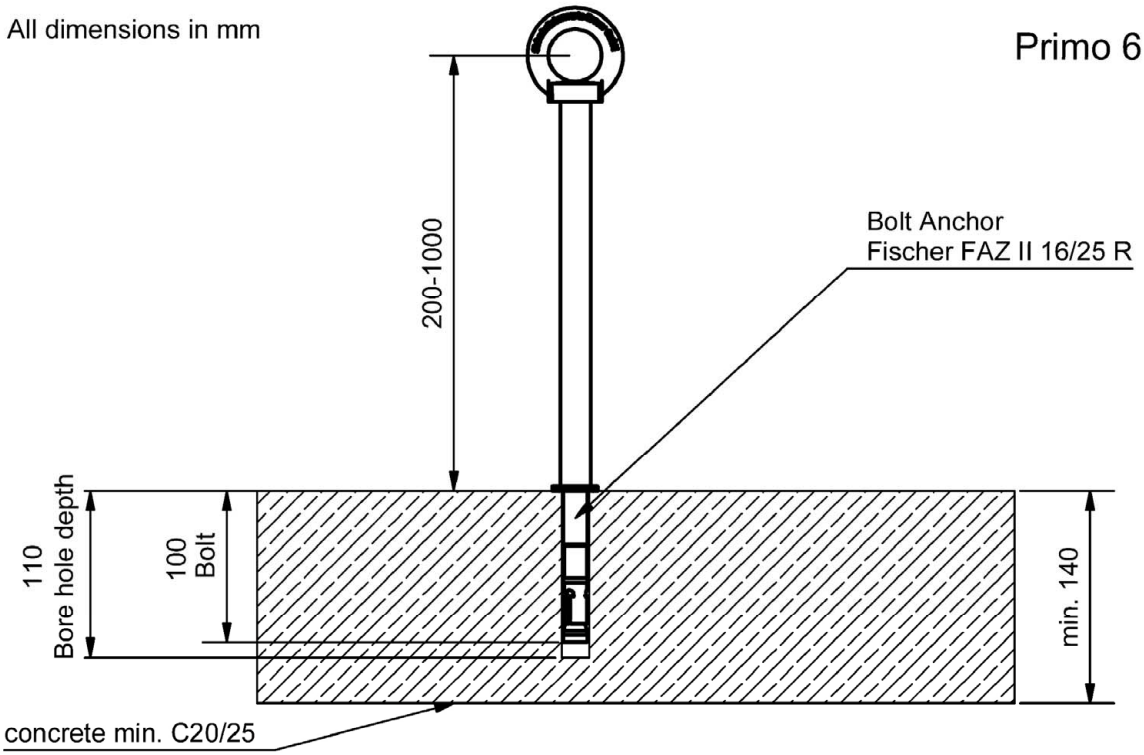
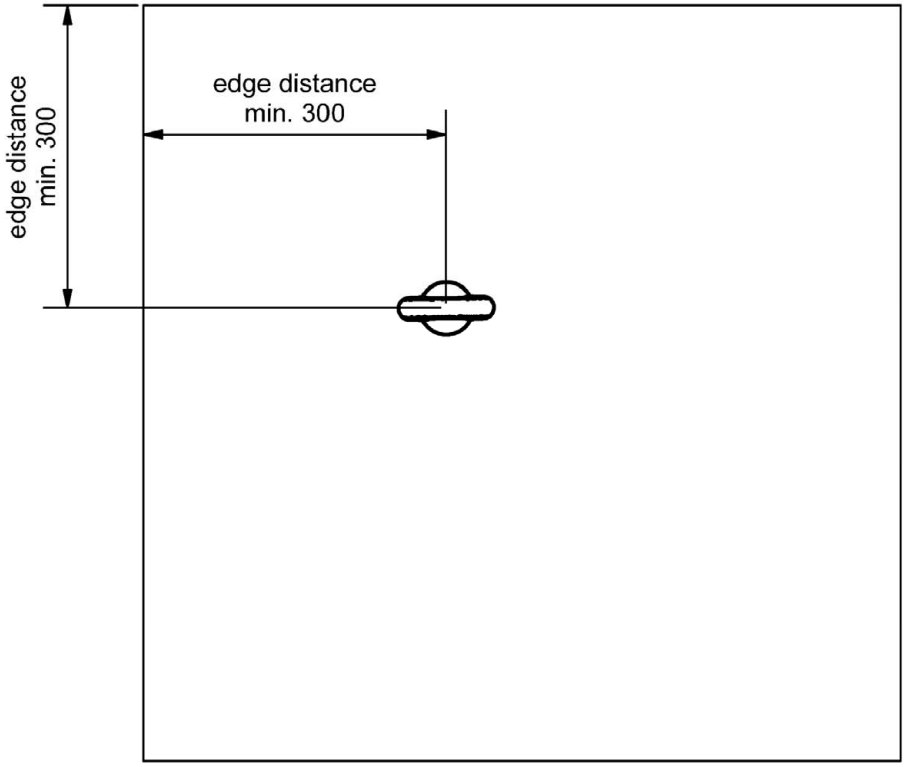
All dimensions in mm

Primo 6 AD





Fallprotection Primo	
Primo 6 AD for cracked and uncracked concrete	Annex 6.2