

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-20/0956
of 9 April 2021

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

Anchor Devices "S-CO"

Product family
to which the construction product belongs

Anchor Devices for Fastening Personal Fall Protection
Systems to Concrete Structures

Manufacturer

Adolf Würth GmbH & Co. KG
Reinhold-Würth-Straße 12-17
74653 Künzelsau
DEUTSCHLAND

Manufacturing plant

plant 12

This European Technical Assessment
contains

46 pages including 42 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

European Technical Assessment

ETA-20/0956

English translation prepared by DIBt

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Specific part**1 Technical description of the product**

The subject of this assessment is the fall protection system "S-CO". The fall protection system "S-CO" is made of stainless steel. The eyelet of the fall protection devices S-CO300 to S-CO390, S-CO400/401/402 and S-CA360/361/362 is made of stainless steel 1.4301 / 1.4307. 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 "S-CO" 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	Material
2	S-CO320/321/322/323	Würth Concrete screw W-BS A4 SW15-5-35-10x90	1.4307
3	S-CO330/331/332/333/334	Würth Concrete screw W-BS A4 SW15-5-35-10x90	1.4307
4	S-CO340/341/342/343	Würth Fixanchor W-FAZ/A4 M10x90	1.4307
5	S-CO350/351/352/353/354	Würth Fixanchor W-FAZ/A4 M10x90	1.4307
6	S-CA360/361/362	Kunkel K 55 M10/0-10 D A4	1.4307
7	S-CO380/382/384	Würth WIT-PE 500, WIT-PE 1000, WIT-VM 250 oder WIT-UH 300	1.4571
8	S-CO390	Würth WIT-VM 100 or WIT-VIZ	1.4307
9	S-CO312	Würth WIT-VM 100 or WIT-VIZ	1.4307
10	S-CO400/401/402	Würth WIT-PE 1000, WIT-VM 250 oder WIT-UH 300	1.4307
11	S-CO300/301/302/303	S-CO300/301/302/303	1.4401 1.4404
12	S-CO403	Würth WIT-PE 500, WIT-PE 1000, WIT-VM 250 oder WIT-UH 300	1.4571
13	S-CO396/397	Würth W-VIZ	1.4401
14	S-CO398/399	Würth W-VIZ-IG	1.4401
15	S-CO395	Würth Fixanchor W-FAZ/A4 M10x90	1.4401
16	S-CO394	Würth Concrete screw W-BS A4 SW15-5-35-10x90	1.4401

The components and the system setup of the product are given in Annex (1-16).

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

The fall protection system "S-CO" 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 eyelet using e.g. ropes and karabiners. In the case of a fall the fall protection system "S-CO" prevents the fall and resulting physical damage assuming the correct usage by the operator. The fall protection system "S-CO" is designed for use in all areas of industry, construction and maintenance.

The intended use of the fall protection systems listed in Table 1 is the attachment to flat roofs or other flat surfaces (e.g. concrete walls) made of concrete. The force applied should usually be perpendicular ($90^\circ \pm 5\%$) to the fastener. Another load direction is possible if this is specified in the annexes to this ETA.

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 "S-CO" 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	Annexes 2-16
Dynamic loading	Annexes 2-16
Check of deformation capacity in case of constraining forces	Annexes 2-16
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 9 April 2021 by Deutsches Institut für Bautechnik

Dr.-Ing. Ronald Schwuchow
Head of Department

beglaubigt:
Hahn

This ETA includes the products listed in Table 1:

Table 1: Products

Annex	Trade name (Product of this ETA)	Fasteners	Substructure
2	S-CO320/321/322/323	Würth concrete screw W-BS A4 SW15-5-35- 10x90 c.)	Reinforced normal- weight concrete C20/25 to C50/60 (cracked or non-cracked) e.)
3	S-CO330/331/332/333/334	Würth concrete screw W-BS A4 SW15-5-35- 10x90 c.)	Reinforced normal- weight concrete C20/25 to C50/60 (cracked or non-cracked) e.)
4	S-CO340/341/342/343	Würth Fixanchor W-FAZ/A4 M10x90 d.)	Reinforced normal- weight concrete C20/25 to C50/60 (cracked or non-cracked) e.)
5	S-CO350/351/352/353/354	Würth Fixanchor W-FAZ/A4 M10x90 d.)	Reinforced normal- weight concrete C20/25 to C50/60 (cracked or non-cracked) e.)
6	S-CA360/361/362	Kunkel K 55 M10/0-10 D A4	Prestressed hollow core slabs min. C45 /55 e.)
7	S-CO380/382/384	Würth WIT-PE 500, WIT-PE 1000, WIT-VM 250 or WIT-UH 300 a.)	Reinforced normal- weight concrete C20/25 to C50/60 (cracked or non-cracked) e.)
8	S-CO390	Würth WIT-VM 100 or WIT-VIZ b.)	Reinforced normal- weight concrete C20/25 to C50/60 (cracked or non-cracked) e.)
9	S-CO312	Würth WIT-VM 100 or WIT-VIZ b.)	Reinforced normal- weight concrete C20/25 to C50/60 (cracked or non-cracked) e.)
10	S-CO400/401/402	Würth WIT-PE 1000, WIT-VM 250 or WIT-UH 300 a.)	Reinforced normal- weight concrete C20/25 to C50/60 (cracked or non-cracked) e.)
11	S-CO300/301/302/303	S-CO300/301/302/303	Reinforced normal- weight concrete C20/25 to C50/60 (cracked or non-cracked) e.)
12	S-CO403	Würth WIT-PE 500, WIT-PE 1000, WIT-VM 250 or WIT-UH 300 a.)	Reinforced normal- weight concrete C20/25 to C50/60 (cracked or non-cracked) e.)

Würth Fall Protection Systems

Overview and rated values

Annex 1.1

Continuation of Table 1: Products

Annex	Trade name (product of this ETA)	Fasteners	Substructure
13	S-CO396/397	Würth W-VIZ ^{b.)}	Reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked) ^{e.)}
14	S-CO398/399	Würth W-VIZ-IG ^{b.)}	Reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked) ^{e.)}
15	S-CO395	Würth Fixanchor W-FAZ/A4 M10x90 ^{d.)}	Reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked) ^{e.)}
16	S-CO394	Würth concrete screw W-BS A4 SW15-5-35-10x90 ^{c.)}	Reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked) ^{e.)}

The setup of the system and the components of the products are shown in Annexes 2 to 16.

Design values of the action

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

The recommended safety factor γ_F is 1,5.

The recommended safety factor is used to determine the respective design load capacities unless there is a specification of a partial safety factor in national regulations or national annexes to Eurocode 0. This leads to the following values:

Example:

For one user $F_{Ed} = F_{Ed} \times \gamma_F = 6 \text{ kN} \times 1,5 = 9 \text{ kN}$

For two users $F_{Ed} = F_{Ed} \times \gamma_F = (6 + 1) \text{ kN} \times 1,5 = 10,5 \text{ kN}$

For three users $F_{Ed} = F_{Ed} \times \gamma_F = (6 + 2) \text{ kN} \times 1,5 = 12 \text{ kN}$

^a WIT-PE 500
WIT-PE 1000
WIT-VM 250
WIT-UH 300

^b WIT-VM 100 und WIT-VIZ

^c Würth concrete screw W-BS A4 SW15-5-35-10x90

^d Würth Fixanker W-FAZ/A4 M10x90

^e Concrete definition, properties, manufacture and conformity

ETA-09/0040
ETA-19/0542
ETA-12/0164
ETA-17/0127
ETA-04/0095
ETA-16/0043
ETA-99/0011
EN 206:2016 + A1:2016

Würth Fall Protection Systems

Overview and rated values

Annex 1.2

Table 2: Substrate reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

anchor device	rod height [mm]	fasteners	edge distance c_{min} [mm]	minimum thickness of concrete h_{min} [mm]
S-CO320	300	Würth Concrete screw W-BS A4 SW15-5-35- 10x90	150	130
S-CO321	400			
S-CO322	500			
S-CO323	600			

All components of the personal protection device (fastener and concrete) are applicable in the weathered outdoor area.

The concrete substructure has to be drilled using a drill hole diameter of 10 mm and a drilling depth of ≥ 100 mm.

Design values of the load bearing capacity

Transverse forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{19,51}{1,5} = 13,00 \text{ kN}$$

Tensile forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{17,60}{1,25} = 14,10 \text{ kN}$$

The recommended safety factor γ_M is 1.5 for actions under shear load and 1,25 for tensile actions, unless there is no partial safety factor in national regulations or national annexes to Eurocode 2.

Dynamic strength

3 persons at maximum

Deformation capacity

≤ 10 mm at 0,70 kN

ETA-16/0043

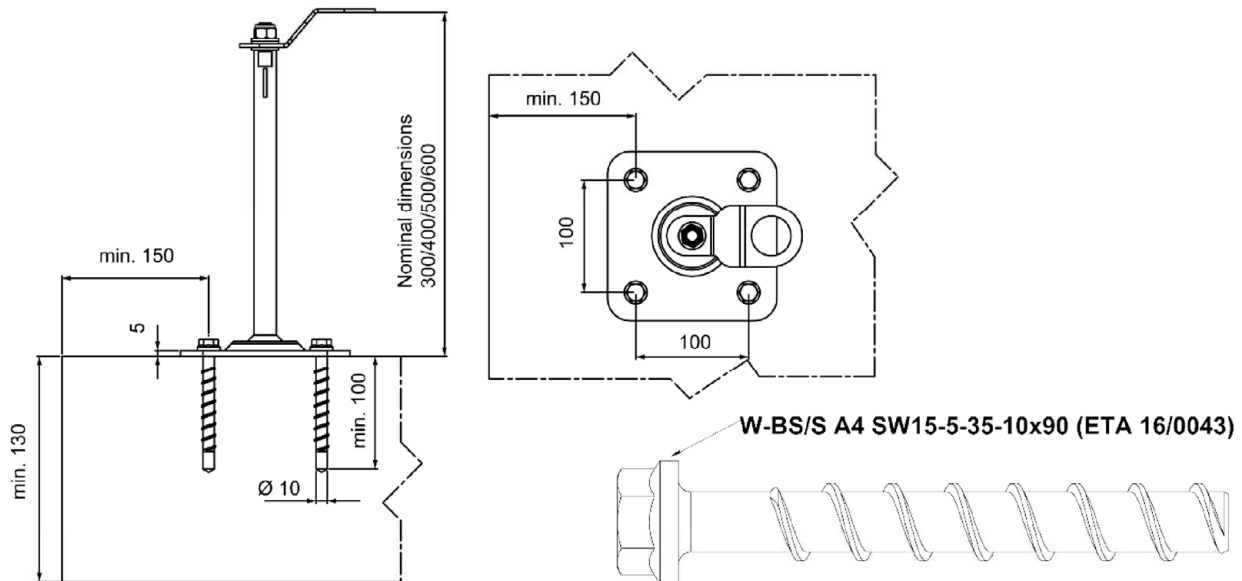
Würth concrete screw W-BS A4 SW15-5-35-10x90

Würth Fall Protection Systems

S-CO320/321/322/323 for reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

Annex 2.1

Würth single anchor point S-CO320/321/322/323 installed with Würth concrete screw W-BS A4 SW15-5-35-10x90



All dimensions in mm.

Installation instructions for Würth single anchor point S-CO320/321/322/323 with Würth concrete screw W-BS A4 SW15-5-35-10x90

1		<p>Pay attention to fixing installation instructions and approval (ETA-16/0043).</p> <p>Using a hammer drill, create a bore hole with a drill nominal diameter of $d_o=10$ mm and bore hole depth of $h_1 \geq 100$ mm vertically to the surface of the anchor base</p>
2		<p>Remove the bore dust, e.g. by blowing it out.</p>
3		<p>Insert the concrete screw in the anchor base through the anchor point's 4 through-holes.</p>
4		<p>Manually, or using a tangential impact wrench, secure the concrete screw until the anchor point's base plate is pressed against the concrete base. Recommended torque: 55 Nm.</p>

Würth Fall Protection Systems

**S-CO320/321/322/323 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Fitted state/ System components / Installation instructions**

Annex 2.2

Table 3: Substrate reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

anchor device	rod height [mm]	fasteners	edge spacing c_{min} [mm]	minimum thickness of concrete h_{min} [mm]
S-CO330	300	Würth concrete screw W-BS A4 SW15-5-35- 10x90	150	130
S-CO331	400			
S-CO332	500			
S-CO333	600			
S-CO334	800			

All components of the personal protection device (fastener and concrete) are applicable in the weathered outdoor area.

The concrete substructure has to be drilled using a drill hole diameter of 10 mm and a drilling depth of ≥ 100 mm.

Design values of the load bearing capacity

Transverse forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{19,51}{1,5} = 13,00 \text{ kN}$$

Tensile forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{17,60}{1,25} = 14,10 \text{ kN}$$

The recommended safety factor γ_M is 1.5 for actions under shear load and 1,25 for tensile actions, unless there is no partial safety factor in national regulations or national annexes to Eurocode 2.

Dynamic strength

3 persons at maximum

Deformation capacity

≤ 10 mm at 0,70 kN

ETA-16/0043

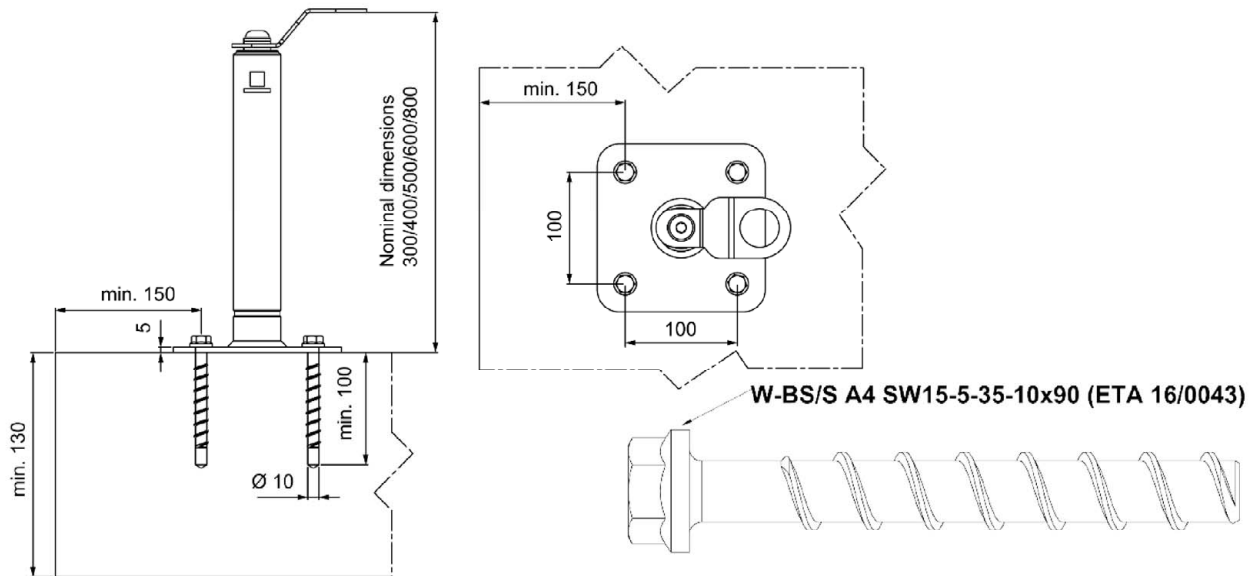
Würth concrete screw W-BS A4 SW15-5-35-10x90

Würth Fall Protection Systems

S-CO330/331/332/333/334 for reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

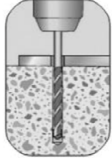
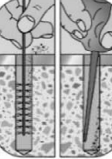
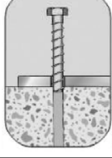
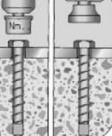
Annex 3.1

Würth single anchor point S-CO330/331/332/333/334 installed with Würth concrete screw W-BS A4 SW15-5-35-10x90



All dimensions in mm.

Installation instructions for Würth single anchor point S-CO330/331/332/333/334 with Würth concrete screw W-BS A4 SW15-5-35-10x90

1		Pay attention to fixing installation instructions and approval (ETA-16/0043). Using a hammer drill, create a bore hole with a drill nominal diameter of $d_0=10$ mm and bore hole depth of $h_1 \geq 100$ mm vertically to the surface of the anchor base
2		Remove the bore dust, e.g. by blowing it out.
3		Insert the concrete screw in the anchor base through the anchor point's 4 through-holes.
4		Manually, or using a tangential impact wrench, secure the concrete screw until the anchor point's base plate is pressed against the concrete base. Recommended torque: 55 Nm.

Würth Fall Protection Systems

**S-CO330/331/332/333/334 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Fitted state/ System components / Installation instructions**

Annex 3.2

Table 4: Substrate reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

Anchor device	Rod height [mm]	Fasteners	Edge distance c_{min} [mm]	Minimum component thickness h_{min} [mm]
S-CO340	300	Würth Fixanchor W-FAZ/A4 M10x90	150	120
S-CO341	400			
S-CO342	500			
S-CO343	600			

All components of the personal protection device (fastener and concrete) are applicable in the weathered outdoor area.

The concrete substructure has to be drilled using a drill hole diameter of 10 mm and a drilling depth of ≥ 75 mm.

Design values of the load bearing capacity

Transverse forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{19,51}{1,5} = 13,00 \text{ kN}$$

Tensile forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{17,60}{1,25} = 14,10 \text{ kN}$$

The recommended safety factor γ_M is 1.5 for actions under shear load and 1,25 for tensile actions, unless there is no partial safety factor in national regulations or national annexes to Eurocode 2.

Dynamic strength

3 persons at maximum

Deformation capacity

≤ 10 mm at 0,70 kN

ETA-99/0011

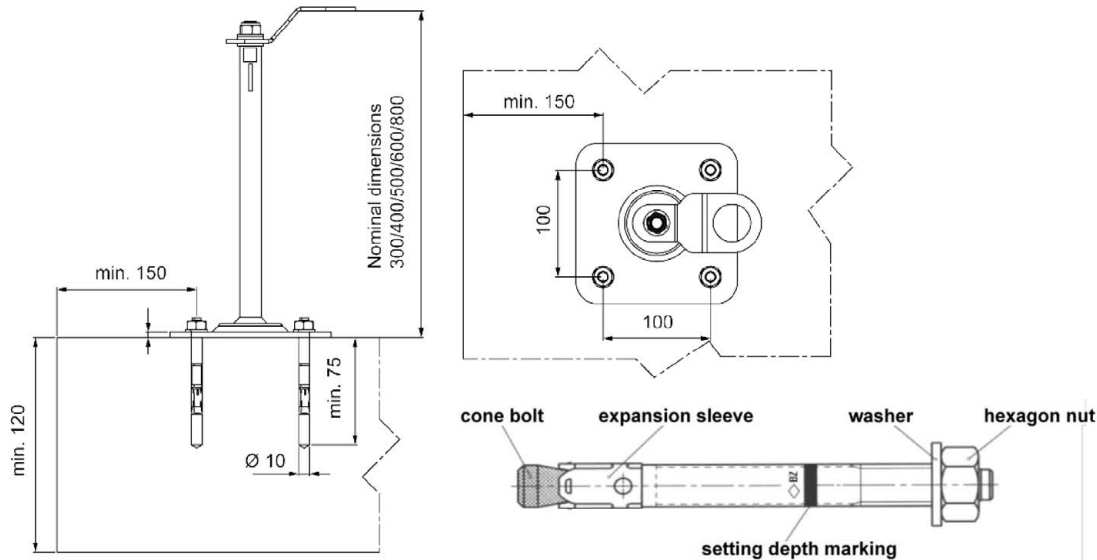
Würth Fixanchor W-FAZ/A4 M10x90

Würth Fall Protection Systems

S-CO340/341/342/343 for reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

Annex 4.1

Würth single anchor point S-CO340/341/342/343 installed with Würth Fixanchor W-FAZ/A4 M10x90



All dimensions in mm.

Installation instructions for Würth single anchor point S-CO340/341/342/343 with Würth Fixanchor W-FAZ/A4 M10x90

1		<p>Pay attention to fixing installation instructions and approval (ETA-99/0011).</p> <p>Create a bore hole with a drill nominal diameter of $d_o=10$ mm and bore hole depth of $h_1 \geq 75$ mm vertically to the surface of the anchor base.</p>
2		<p>Remove the bore dust, e.g. by blowing it out.</p>
3		<p>Using a hammer or machine setting tool, insert the anchor in the anchor base through the anchor point's 4 designated through-holes</p>
4		<p>Apply torque of 35 Nm with a calibrated torque wrench</p>

Würth Fall Protection Systems

**S-CO340/341/342/343 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Fitted state/ System components / Installation instructions**

Annex 4.2

Table 5: Substrate reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

anchor device	rod height [mm]	fasteners	edge distance c_{min} [mm]	minimum thickness of concrete h_{min} [mm]
S-CO350	300	Würth Fixanchor W-FAZ/A4 M10x90	150	120
S-CO351	400			
S-CO352	500			
S-CO353	600			
S-CO354	800			

All components of the personal protection device (fastener and concrete) are applicable in the weathered outdoor area.

The concrete substructure has to be drilled using a drill hole diameter of 10 mm and a drilling depth of ≥ 75 mm.

Design values of the load bearing capacity

Transverse forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{19,51}{1,5} = 13,00 \text{ kN}$$

Tensile forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{17,60}{1,25} = 14,10 \text{ kN}$$

The recommended safety factor γ_M is 1.5 for actions under shear load and 1,25 for tensile actions, unless there is no partial safety factor in national regulations or national annexes to Eurocode 2.

Dynamic strength

3 persons at maximum

Deformation capacity

≤ 10 mm at 0,70 kN

ETA-99/0011

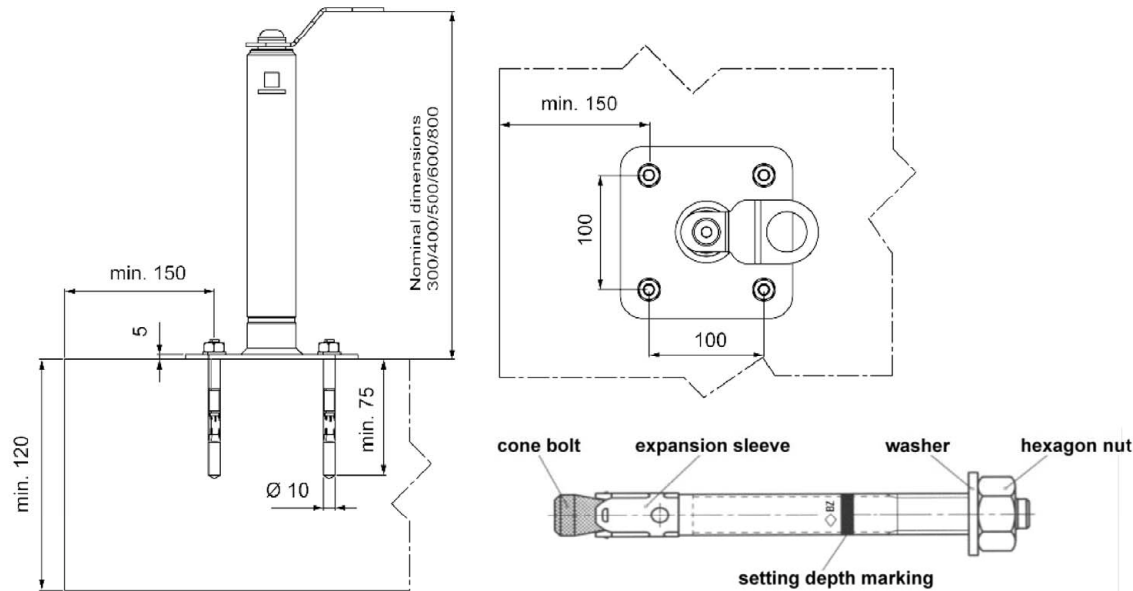
Würth Fixanchor W-FAZ/A4 M10x90

Würth Fall Protection Systems

S-CO350/351/352/353/354 for reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

Annex 5.1

**Würth single anchor point S-CO350/351/352/353/354 installed
with Würth Fixanchor W-FAZ/A4 M10x90**



All dimensions in mm.

**Installation instructions for Würth single anchor point S-CO350/351/352/353/354
with Würth Fixanchor W-FAZ/A4 M10x90**

1		Pay attention to fixing installation instructions and approval (ETA-99/0011).
		Create a bore hole with a drill nominal diameter of $d_o=10$ mm and bore hole depth of $h_1 \geq 75$ mm vertically to the surface of the anchor base.
2		Remove the bore dust, e.g. by blowing it out.
3		Using a hammer or machine setting tool, insert the anchor in the anchor base through the anchor point's 4 designated through-holes
4		Apply torque of 35 Nm with a calibrated torque wrench.

Würth Fall Protection Systems

**S-CO350/351/352/353/354 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Fitted state/ System components / Installation instructions**

Annex 5.2

Table 6: Prestressed hollow core slabs min. C45/55

anchor device	rod height [mm]	fasteners	edge distance c_{min} [mm]	minimum thickness of lower surface h_{min} [mm]
S-CA360	300	Kunkel K 55 M10/0-10 D A4	150	40
S-CA361	400			
S-CA362	500			

All components of the personal protection device (fastener and concrete) are applicable in the weathered outdoor area.

The concrete substructure has to be drilled using a drill hole diameter of 10 mm.

Design values of the load bearing capacity

Transverse forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{17,0}{1,8} = 9,44 \text{ kN}$$

Tensile forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{16,60}{1,8} = 9,20 \text{ kN}$$

The recommended safety factor γ_M is 1,8, unless there is no partial safety factor in national regulations or national annexes to Eurocode 2.

Dynamic strength

1 person at maximum

Deformation capacity

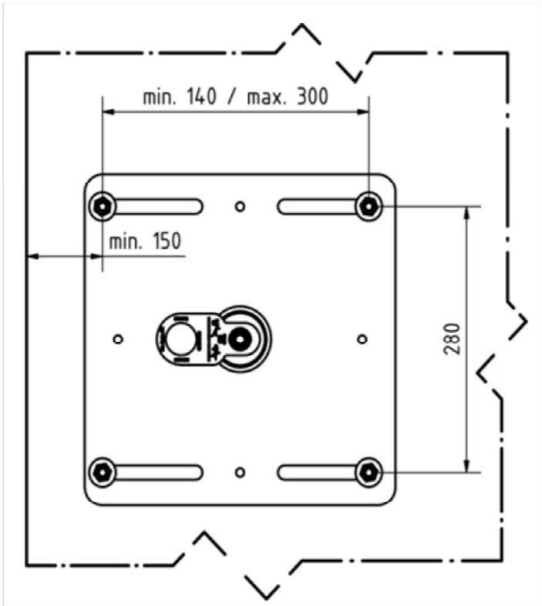
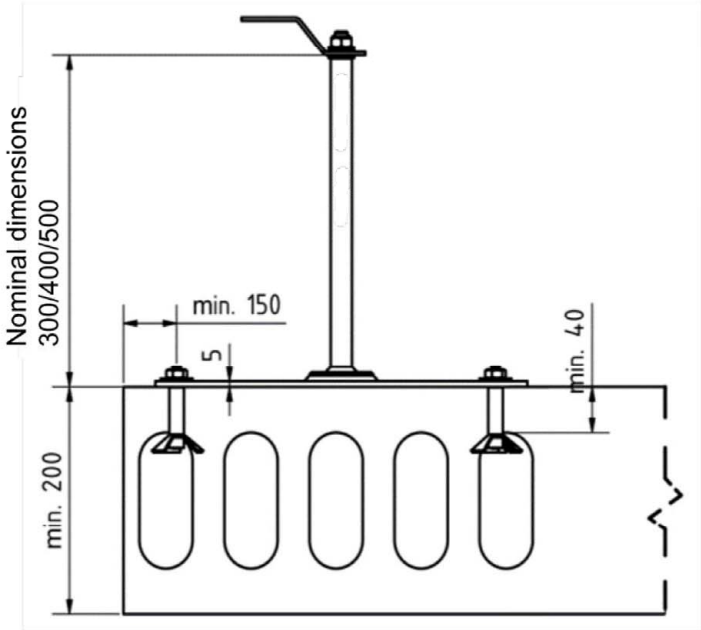
≤ 10 mm at 0,70 kN

Würth Fall Protection Systems

S-CA360/361/362 for Prestressed hollow core slabs min. C45/55

Annex 6.1

Würth single anchor point S-CA360/361/362 installed
with cavity anchor K 55 M10/0-10 D A4



All dimensions in mm.

Installation instructions for Würth single anchor point S-CA360/361/362
with cavity anchor K 55 M10/0-10 D A4

1		Pay attention to fixing installation instructions.
		Create a bore hole with a drill nominal diameter of $d_o=14$ mm.
2		Insert the anchor and knock in flush with the setting tool.
3		Mount the anchor point S-CA360/361/362 and apply a torque of 20 Nm with a calibrated torque wrench.
4		Prestressed concrete anchor in the expanded state.

Würth Fall Protection Systems

S-CA360/361/362 for prestressed hollow core slabs min. C45/55
Fitted state/ System components / Installation instructions

Annex 6.2

Table 7: Substrate reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

anchor device	rod height [mm]	fasteners	edge distance c_{min} [mm]	minimum thickness of concrete h_{min} [mm]
S-CO380	300	Würth injection system WIT-PE 500 WIT-PE 1000 WIT-VM 250 WIT-UH 300	120	130
S-CO382	400		125	150
S-CO384	500		125	155

All components of the personal protection device (fastener and concrete) are applicable in the weathered outdoor area.

The concrete substructure has to be drilled using a drill hole diameter of 18 mm for S-CO380 and S-CO382 of 24mm and for S-CO384 of 28mm and a drilling depth of ≥ 110 mm.

Design values of the load bearing capacity

anchor device	transverse forces	tensile forces
S-CO380	$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{13,7}{1,5} = 9,0 \text{ kN}$	$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{20,1}{1,8} = 11,2 \text{ kN}$
S-CO382	$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{13,7}{1,5} = 9,0 \text{ kN}$	$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{20,0}{2,1} = 9,5 \text{ kN}$
S-CO384	$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{13,6}{1,5} = 9,0 \text{ kN}$	$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{20,0}{2,1} = 9,5 \text{ kN}$

The recommended safety factor γ_M is 1.5 for WIT-PE 1000 and WIT-UH 300 in all directions and for WIT-PE 500 and WIT-VM 250 in the transverse direction, 1.8 for WIT-VM 250 and WIT-PE 500 to Size M16 in the direction of pull and 2.1 for WIT-PE 500 from size M20 in the direction of pull, unless a partial safety factor is specified in national regulations or national annexes to Eurocode 2.

Dynamic strength

1 person at maximum

Deformation capacity

≤ 10 mm at 0,70 kN

ETA-09/0040, ETA-19/0542,
ETA-12/0164 and ETA-17/0127

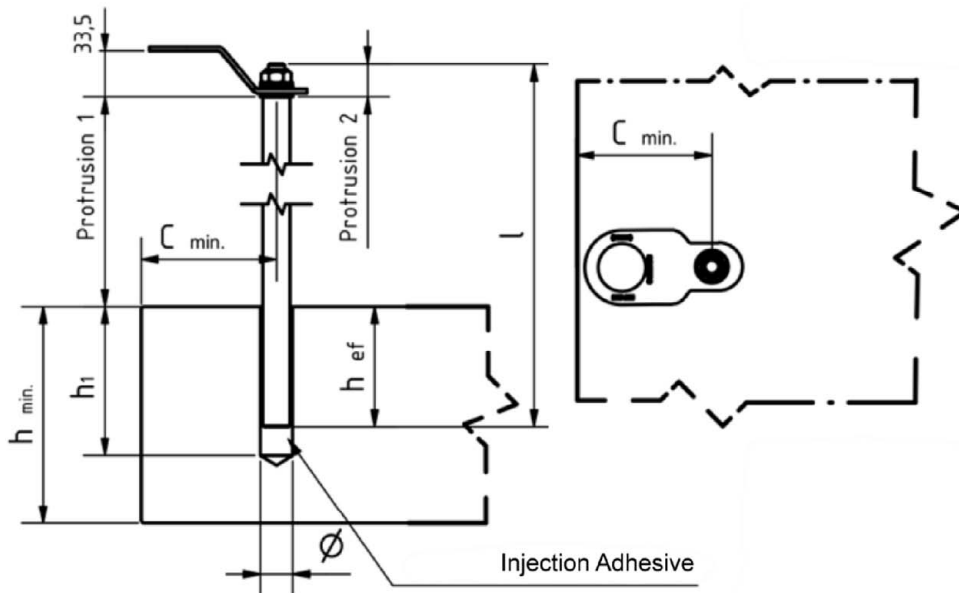
WIT-PE 500, WIT-PE 1000, WIT-VM 250 and WIT-UH 300

Würth Fall Protection Systems

S-CO380/382/384 for reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

Annex 7.1

Würth single anchor point S-CO380/382/384, installed, with Würth injection adhesive WIT-PE 500, WIT-PE 1000, WIT-VM 250 or WIT-UH 300



All dimensions in mm.

Anchor point SPA-TYP-33/34/35-XXX characteristics

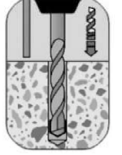
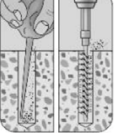
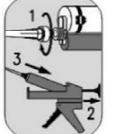
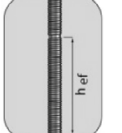

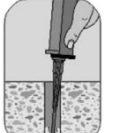
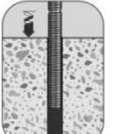
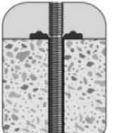
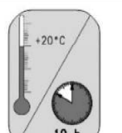
Type	S-CO380	S-CO382	S-CO384
Diameter Ø [mm]	16	20	24
Overall length l [mm]	424	624	874
Effective anchoring depth h_{ef} [mm] ≥	100	100	100
Nominal Ø, drill d_0 [mm]	18	24	28
Bore hole depth h_1 [mm] ≥	110	110	110
Protrusion 1 [mm]	300	500	750
Protrusion 2 [mm]	24	24	24
Total protrusion [mm]	324	524	774
Edge distance c_{min} [mm]	120	125	125
Spacing s_{min} [mm]	650	678	706
Minimum component thickness h_{min} [mm]	130	150	155

Würth Fall Protection Systems

**S-CO380/382/384 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Fitted state/ System components**

Annex 7.2

Installation instructions for Würth single anchor point S-CO380/382/384 with Würth injection adhesive WIT-PE 500, WIT-PE 1000, WIT-VM 250 or WIT-UH 300

1		<p>Pay attention to fixing installation instructions and approval (ETA-09/0040, ETA-19/0542, ETA-12/0164 und ETA-17/0127).</p> <p>Using a hammer drill, make a bore hole vertically to the anchor base surface.</p>
2		<p>Clean drill hole, the corresponding ETA or the manufacturers installation instructions have to be considered.</p>
3		<p>Attach the mixer to the cartridge using the dispenser.</p>
4		<p>Pay attention to the setting depth.</p>
5		<p>Before use, dispense a strand of around 10 cm but do not inject it into the bore hole.</p>
6		<p>Checking the temperature of the anchor base: The minimum temperature acc. to the ETA has to be considered. Starting from the base of the bore hole, fill the hole with injection adhesive. The filling quantity has to be chosen acc. to the corresponding ETA.</p>
7		<p>Push in the single anchor point S-CO380/382/384 with a slight turning movement down to the setting depth marking.</p>
8		<p>Visually check the amount of adhesive or setting depth marking respectively. The adhesive must reach the surface. If no adhesive is visible at the surface, the single anchor point S-CO380/382/384 must be removed immediately and injection adhesive injected again.</p>
9		<p>Comply with the curing time of the injection adhesive. See the processing notes on the cartridge and the installation instructions.</p>

Würth Fall Protection Systems

**S-CO380/382/384 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Installation instructions**

Annex 7.3

Table 8: Substrate reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

anchor device	rod height [mm]	fasteners	edge distance c_{min} [mm]	minimum thickness of concrete h_{min} [mm]
S-CO390	300	Würth WIT-VM 100 or WIT-VIZ	120	150

All components of the personal protection device (fastener and concrete) are applicable in the weathered outdoor area.

The concrete substructure has to be drilled using a drill hole diameter of 18 mm and a drilling depth of ≥ 120 mm.

Design values of the load bearing capacity

Transverse forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{18,26}{1,5} = 12,2 \text{ kN}$$

Tensile forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{17,6}{1,25} = 14,1 \text{ kN}$$

The recommended safety factor γ_M is 1.5 for actions under shear load and 1,25 for tensile actions, unless there is no partial safety factor in national regulations or national annexes to Eurocode 2.

Dynamic strength

3 persons at maximum

Deformation capacity

≤ 10 mm at 0,70 kN

ETA-04/0095

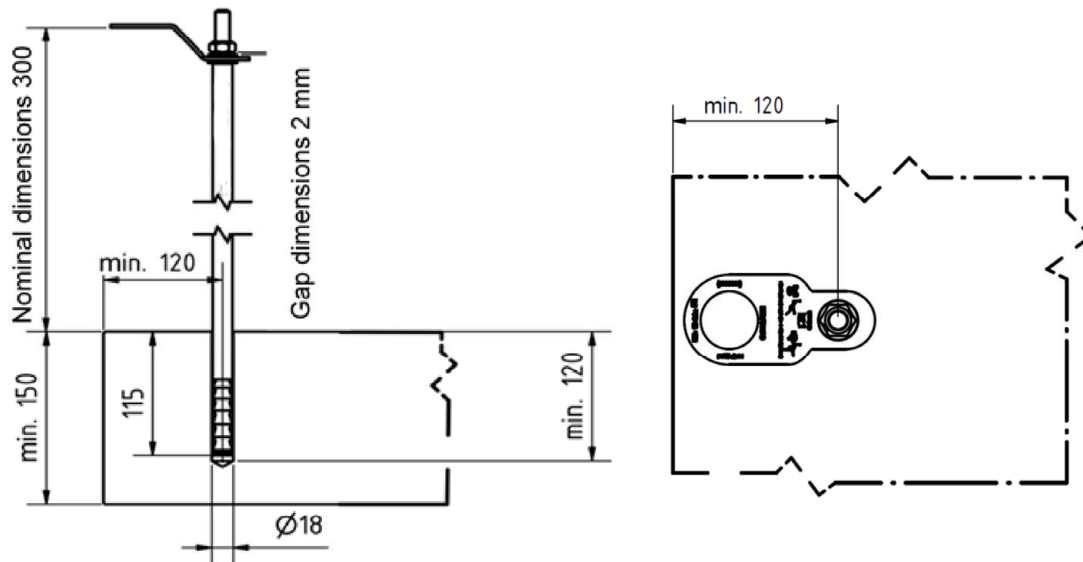
WIT-VM 100 and WIT-VIZ

Würth Fall Protection Systems

S-CO390 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked)

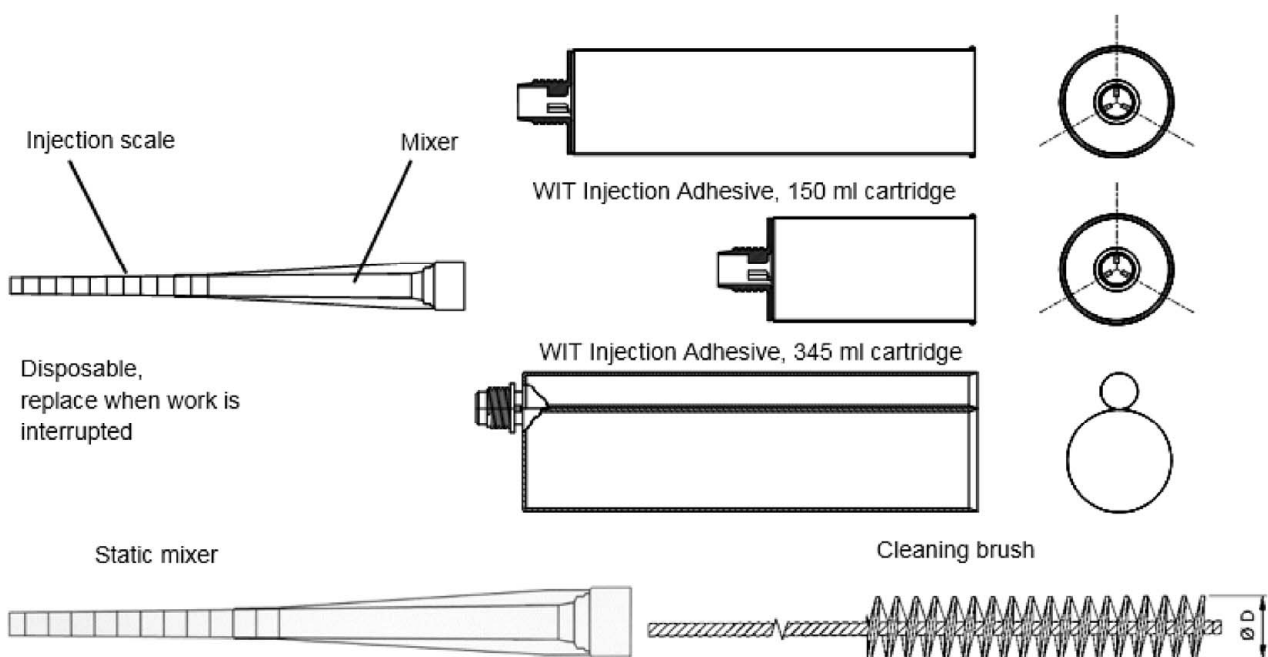
Annex 8.1

**Würth single anchor point S-CO390, installed,
with Würth injection adhesive WIT-VM 100 or WIT-VIZ**



All dimensions in mm.

Würth injection adhesive WIT-VM 100 and WIT-VIZ (different container sizes)
WIT injection adhesive cartridge (different container sizes)



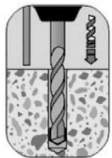
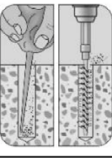
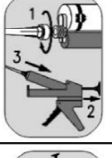
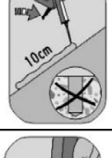
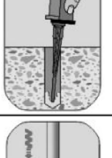
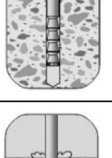
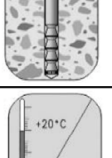
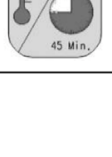
Cartridge imprint: processing data, storage life, batch no.,
hazard code, travel scale, curing and processing time

Würth Fall Protection Systems

**S-CO390 for Reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Fitted state/ System components**

Annex 8.2

Installation instructions for Würth single anchor point S-CO390 with Würth injection adhesive WIT-VM 100 or WIT-VIZ

1		Pay attention to fixing installation instructions and approval (ETA-04/0095).
		Using a hammer drill, create a bore hole with a drill nominal diameter of $d_o=18$ mm and bore hole depth of $h_1 \geq 120$ mm vertically to the surface of the anchor base.
2		Clean drill hole, the corresponding ETA or the manufacturers installation instructions have to be considered.
3		Attach the mixer to the cartridge using the dispenser.
4		Before use, dispense a strand of around 10 cm but do not inject it into the bore hole.
5		Checking the temperature of the anchor base: The minimum temperature acc. to the ETA has to be considered. Starting from the base of the bore hole, fill the hole with injection adhesive. The filling quantity has to be chosen acc. to the corresponding ETA.
6		Push in the single anchor point S-CO390 with a slight turning movement down to the bore hole base.
7		Visually check the amount of adhesive or setting depth marking respectively. The adhesive has to reach the surface. If no adhesive is visible at the surface, the anchor point must be removed immediately and injection adhesive injected again.
8		Comply with the curing time of the injection adhesive. Processing is possible only from a temperature of $\geq +5^\circ\text{C}$. See the processing notes on the cartridge and the installation instructions.

Würth Fall Protection Systems

**S-CO390 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Installation instructions**

Annex 8.3

Table 9: Substrate reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

anchor device	rod height [mm]	fasteners	edge distance c_{min} [mm]	minimum thickness of concrete h_{min} [mm]
S-CO312	500	Würth WIT-VM 100 oder WIT-VIZ	120	160

All components of the personal protection device (fastening system and concrete) are applicable in the weathered outdoor area.

The concrete substructure has to be drilled using a drill hole diameter of 24 mm and a drilling depth of ≥ 120 mm.

Design values of the load bearing capacity

Transverse forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{18,4}{1,5} = 12,3 \text{ kN}$$

Tensile forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{17,60}{1,25} = 14,10 \text{ kN}$$

The recommended safety factor γ_M is 1.5 for actions under shear load and 1,25 for tensile actions, unless there is no partial safety factor in national regulations or national annexes to Eurocode 2.

Dynamic strength

3 persons at maximum

Deformation capacity

≤ 10 mm at 0.70 kN

ETA-04/0095

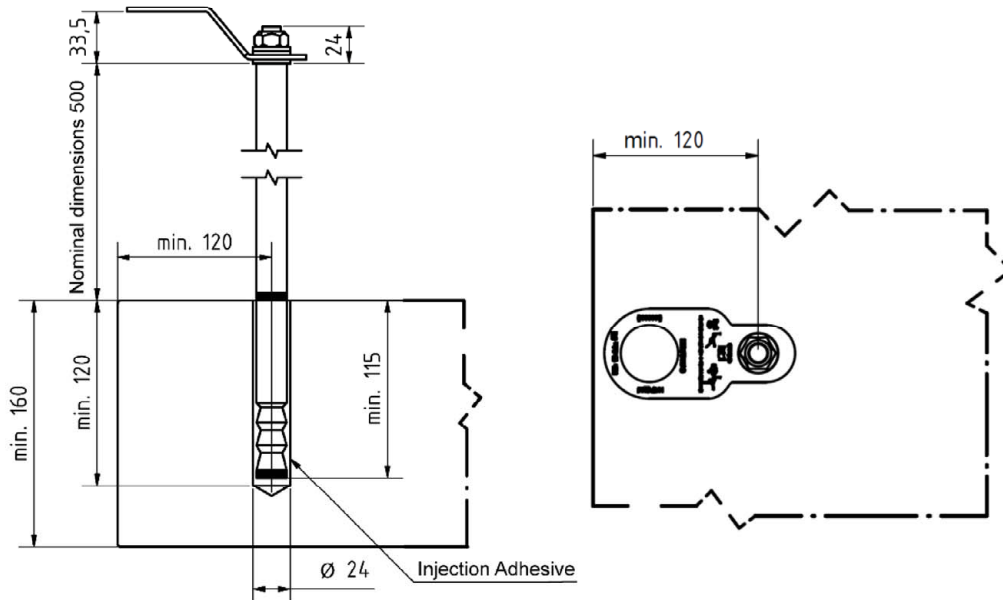
WIT-VM 100 and WIT-VIZ

Würth Fall Protection Systems

S-CO312 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked)

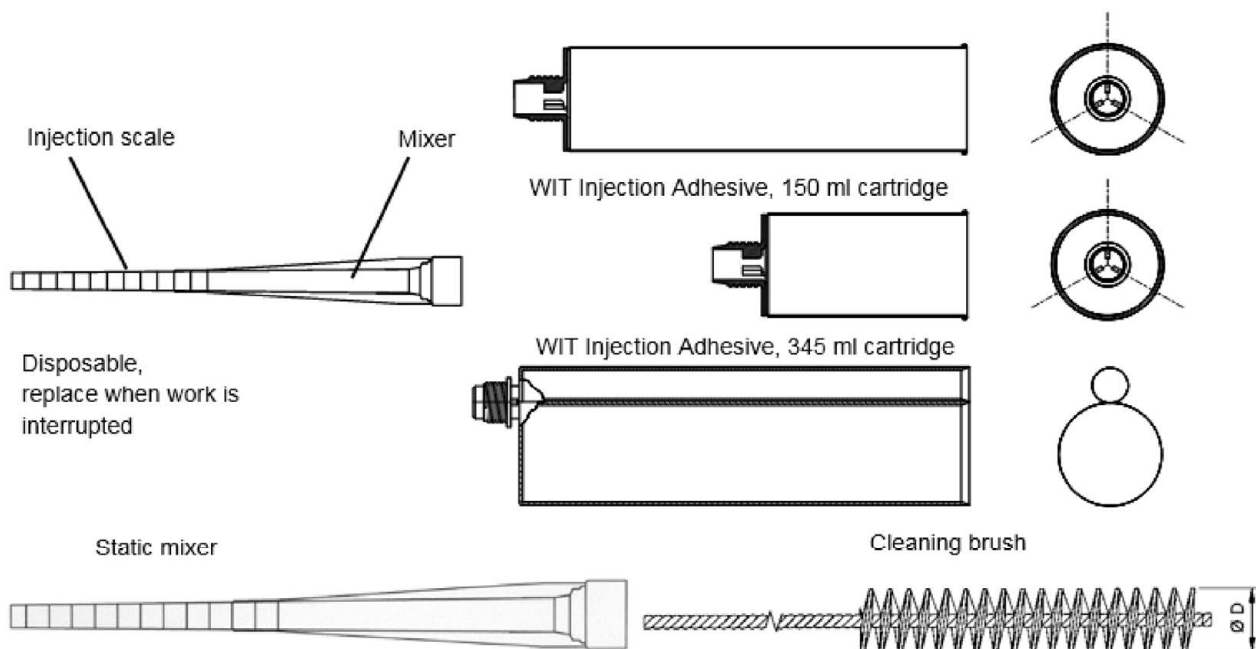
Annex 9.1

Würth single anchor point S-CO312, installed, with Würth injection adhesive WIT-VM 100 or WIT-VIZ



All dimensions in mm.

Würth injection adhesive WIT-VM 100 and WIT-VIZ (different container sizes)



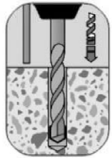

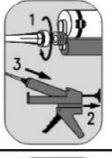
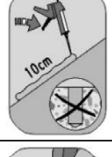

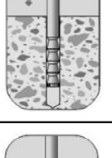
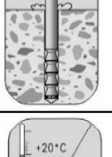

Cartridge imprint: processing data, storage life, batch no.,
hazard code, travel scale, curing and processing time

Würth Fall Protection Systems

S-CO312 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Fitted state/ System components

Annex 9.2

Installation instructions for Würth single anchor point S-CO312 with Würth injection adhesive WIT-VM 100 or WIT-VIZ

1		Pay attention to fixing installation instructions and approval (ETA-04/0095).
		Using a hammer drill, create a bore hole with a drill nominal diameter of $d_o=24$ mm and bore hole depth of $h_1 \geq 120$ mm vertically to the surface of the anchor base.
2		Clean drill hole, the corresponding ETA or the manufacturers installation instructions have to be considered.
3		Attach the mixer to the cartridge using the dispenser.
4		Before use, dispense a strand of around 10 cm but do not inject it into the bore hole.
5		Checking the temperature of the anchor base: The minimum temperature acc. to the ETA has to be considered. Starting from the base of the bore hole, fill the hole with injection adhesive. The filling quantity has to be chosen acc. to the corresponding ETA.
6		Push in the single anchor point S-CO312 with a slight turning movement down to the bore hole base.
7		Visually check the amount of adhesive or setting depth marking respectively. The adhesive has to reach the surface. If no adhesive is visible at the surface, the anchor point must be removed immediately and injection adhesive injected again.
8		Comply with the curing time of the injection adhesive. Processing is possible only from a temperature of $\geq +5^\circ\text{C}$. See the processing notes on the cartridge and the installation instructions.

Würth Fall Protection Systems

**S-CO312 for reinforced normal-weight concrete C20/25 to C5060
(cracked or non-cracked) Installation instructions**

Annex 9.3

Table 10: Substrate reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

anchor device	rod height [mm]	fasteners	edge distance c_{min} [mm]	minimum thickness of concrete h_{min} [mm]
S-CO400	300	Würth injection system, WIT-PE 1000, WIT-VM 250, WIT-UH 300	200	140
S-CO401	400			
S-CO402	500			

All components of the personal protection device (injection system and concrete) are applicable in the weathered outdoor area.

The concrete substructure has a drill hole diameter of 24 mm and a drilling depth pre-drilling of ≥ 110 mm.

Design values of the load bearing capacity

Transverse forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{17,60}{1,25} = 14,1 \text{ kN}$$

Tensile forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{22,6}{1,8} = 12,6 \text{ kN}$$

The recommended safety factor γ_M is 1.5 for WIT-PE 1000 and WIT-UH 300 as well as 1.8 for WIT-VM 250 in tensile direction and for all mortars 1.25 in transverse direction, unless a partial safety factor is specified in national regulations or national annexes to Eurocode 2 is.

Dynamic strength

3 persons at maximum

Deformation capacity

≤ 10 mm at 0.70 kN

ETA-19/0542, ETA-12/0164
and ETA-17/0127

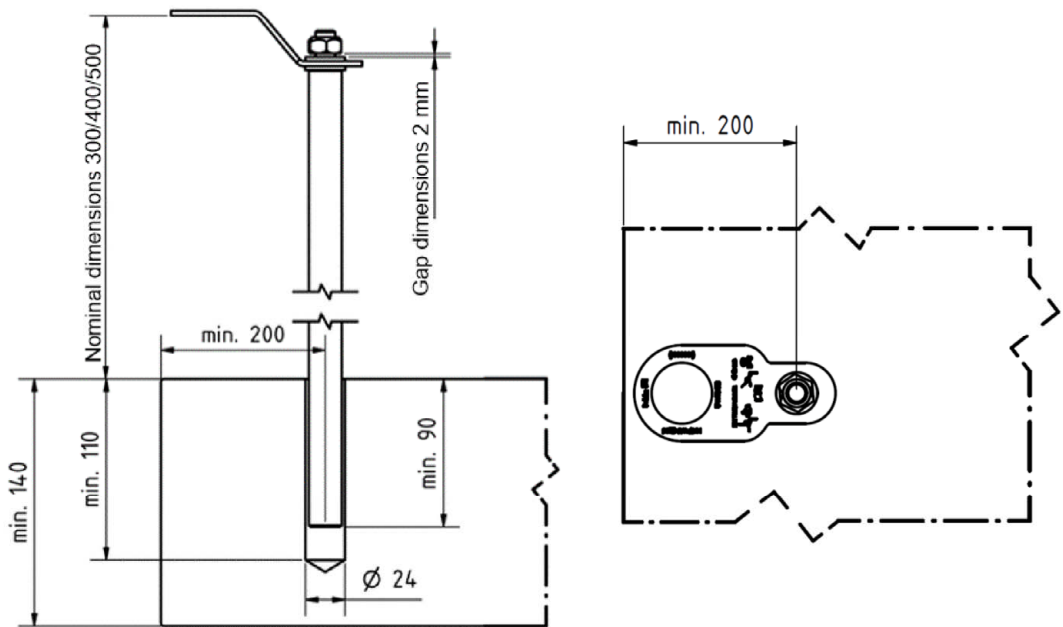
WIT-PE 1000, WIT-VM 250 and WIT-UH 300

Würth Fall Protection Systems

S-CO400/401/402 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked)

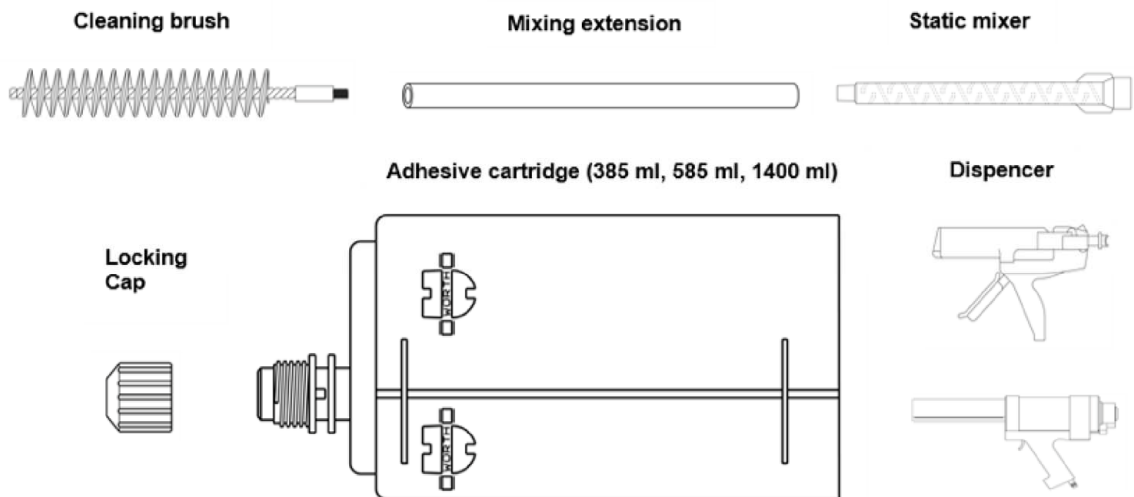
Annex 10.1

**Würth single anchor point S-CO400/401/402, installed, with
Würth injection adhesive WIT-PE 1000, WIT-VM 250 or WIT-UH 300**



All dimensions in mm.

Würth injection adhesive WIT-PE 1000, WIT-VM 250 or WIT-UH 300 (different container sizes)



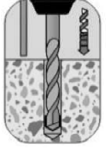
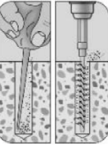
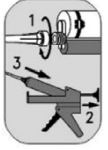

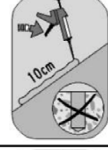
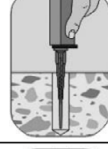
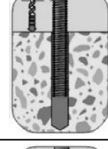


**Cartridge imprint: processing data, storage life, batch no.,
hazard code, travel scale, curing and processing time**

Würth Fall Protection Systems

**S-CO400/401/402 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Fitted state/ System components**

Annex 10.2

Installation instructions for Würth single anchor point S-CO400/401/402 with injection adhesive WIT-PE 1000, WIT-VM 250 or WIT-UH 300

1		<p>Pay attention to fixing installation instructions and approval (ETA-19/0542, ETA-12/0164 und ETA-17/0127).</p> <p>Using a hammer drill, create a bore hole with a drill nominal diameter of $d_o=24$ mm and bore hole depth of $h_1 \geq 110$ mm vertically to the surface of the anchor base.</p>
2		<p>Clean drill hole, the corresponding ETA or the manufacturers installation instructions have to be considered.</p>
3		<p>Attach the mixer to the cartridge using the dispenser.</p>
4		<p>Pay attention to the setting depth.</p>
5		<p>Before use, dispense a strand of around 10 cm but do not inject it into the bore hole.</p>
6		<p>Checking the temperature of the anchor base: The minimum temperature acc. to the ETA has to be considered. Starting from the base of the bore hole, fill the hole with injection adhesive. The filling quantity has to be chosen acc. to the corresponding ETA.</p>
7		<p>Push in the single anchor point S-CO400/401/402 with a slight turning movement down to the bore hole base.</p>
8		<p>Visually check the amount of adhesive or setting depth marking respectively. The adhesive has to reach the surface. If no adhesive is visible at the surface, the anchor point must be removed immediately and injection adhesive injected again.</p>
9		<p>Comply with the curing time of the injection adhesive. Processing is possible only from a temperature of $\geq +5^\circ\text{C}$. See the processing notes on the cartridge and the installation instructions.</p>

Würth Fall Protection Systems

**S-CO400/401/402 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Installation instructions**

Annex 10.3

Table 11: Substrate reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

anchor device	rod height [mm]	fasteners	edge distance c_{min} [mm]	minimum thickness of concrete h_{min} [mm]
S-CO300 _{a.)}	300	S-CO300	135	140
S-CO301 _{a.)}	400	S-CO301	135	140
S-CO302 _{b.)}	500	S-CO302	135	200
S-CO303 _{b.)}	600	S-CO303	135	200

All components of the anchorage device (fastening system and concrete) are in the weathered outdoor area applicable.

The concrete substructure has to be drilled using a drill hole diameter of $a_{16} / 20_b$ mm and a drilling depth of $h_0 \geq a_{110} / 130_b$ mm.

Design values of the load bearing capacity

Transverse forces

$$^a F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{17,60}{1,25} = 14,1 \text{ kN}$$

$$^b F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{17,60}{1,25} = 14,1 \text{ kN}$$

Tensile forces

$$^a F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{18,1}{1,5} = 12,1 \text{ kN}$$

$$^b F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{18,3}{1,5} = 12,2 \text{ kN}$$

The recommended safety factor γ_M is 1.25 for actions under shear load and 1.5 for tensile actions, unless there is no partial safety factor in national regulations or national annexes to Eurocode 2.

Dynamic strength

3 persons at maximum

Deformation capacity

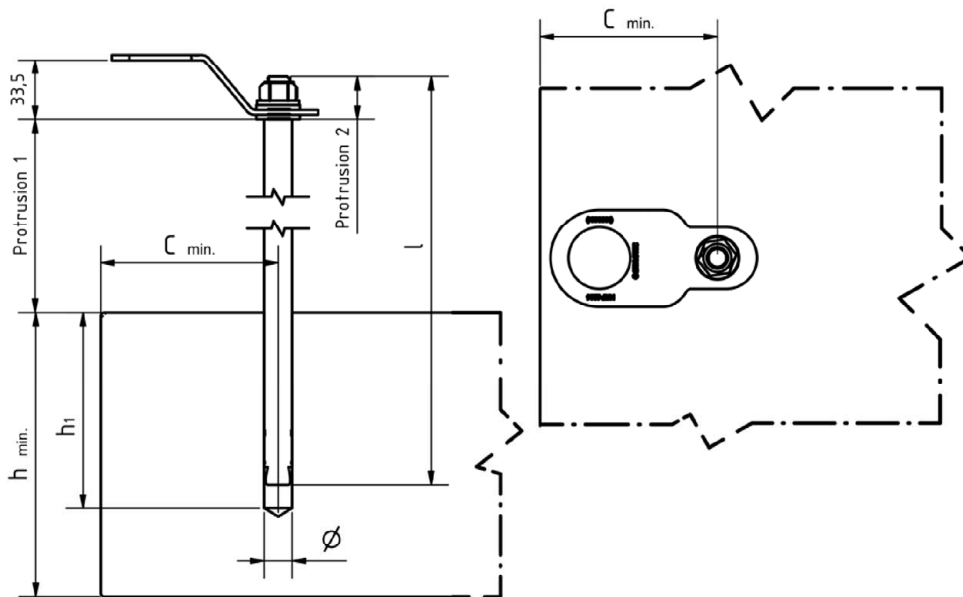
≤ 10 mm at 0.70 kN

Würth Fall Protection Systems

S-CO300/301/302/303 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked)

Annex 11.1

Würth single anchor point S-CO300/301/302/303, installed



All dimensions in mm.

Anchor point S-CO300/301/302/303 characteristics

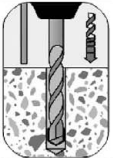
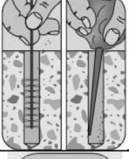

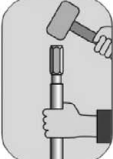
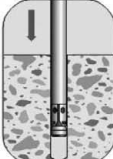
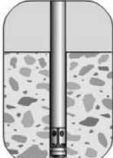

Type	S-CO300	S-CO301	S-CO302	S-CO303
Diameter \varnothing [mm]	16	16	20	20
Overall length l [mm]	421	521	638	738
Nominal \varnothing , drill d_0 [mm]	16	16	20	20
Bore hole depth h_1 [mm] \geq	110	110	130	130
Protrusion 1 [mm]	300	400	500	600
Protrusion 2 [mm]	24	24	24	24
Total protrusion [mm]	324	424	524	624
Edge distance c_{min} [mm]	135	135	135	135
Spacing s_{min} [mm]	255	255	300	300
Minimum component thickness h_{min} [mm]	140	140	200	200

Würth Fall Protection Systems

S-CO300/301/302/303 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Fitted state/ System components

Annex 11.2

Installation instructions Würth single anchor point S-CO300/301/302/303

1		Pay attention to the installation instructions.
		Using a hammer drill, make a bore hole vertically to the anchor base surface.
2		Remove the bore dust, e.g. by blowing it out.
3		Fit the spacer sleeve on anchor point S-CO300/301/302/303. Without the spacer sleeve the thread can become damaged.
4		Hold the S-CO300/301/302/303 with your hand whilst knocking it in.
5		Knock in the S-CO300/301/302/303 anchor point.
6		Visual check: The anchor point has to be inserted down to the setting depth marking.
7		Remove the spacer sleeve by unscrewing it.

Würth Fall Protection Systems

**S-CO300/301/302/303 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Installation instructions**

Annex 11.3

Table 12: Substrate reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

anchor device	rod height [mm]	fasteners	edge distance c_{min} [mm]	minimum thickness of concrete h_{min} [mm]
S-CO403	Mounting part	Würth WIT-PE 500, WIT-PE 1000, WIT-VM 250 or WIT-UH 300	140	170

All components of the personal protection device (injection system and concrete) are applicable in the weathered outdoor area.

The concrete substructure has to be drilled using a drill hole diameter of 24 mm and a drilling depth of ≥ 130 mm.

Design values of the load bearing capacity

Transverse forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{23,0}{1,5} = 15,3 \text{ kN}$$

Tensile forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{24,9}{2,1} = 12,0 \text{ kN}$$

The recommended safety factor γ_M is 1.5 for WIT-PE 1000 and WIT-UH 300 in all directions and for WIT-PE 500 and WIT-VM 250 in the transverse direction, 1.8 for WIT-VM 250 and WIT-PE 500 to Size M16 and 2.1 for WIT-PE 500 from size M20 in tensile direction, unless a partial safety factor is specified in national regulations or national annexes to Eurocode 2.

Dynamic strength

3 persons at maximum

Deformation capacity

≤ 10 mm at 0.70 kN

ETA-09/0040, ETA-19/0542,
ETA-12/0164 and ETA-17/0127

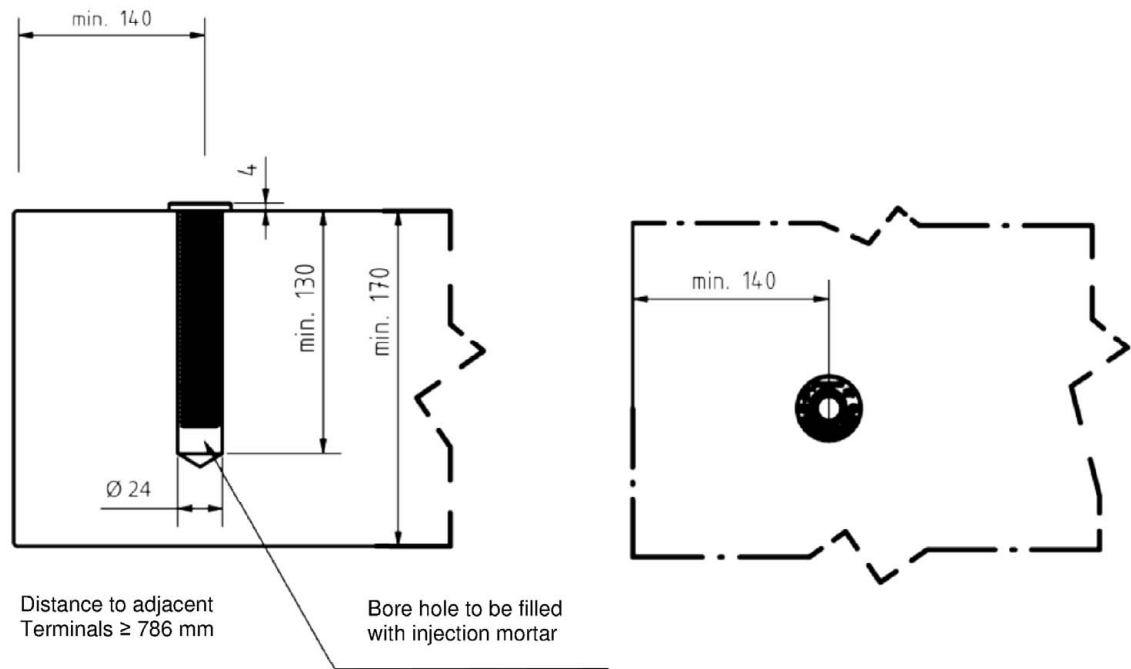
WIT-PE 500, WIT-PE 1000, WIT-VM 250 and WIT-UH 300

Würth Fall Protection Systems

**S-CO403 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked)**

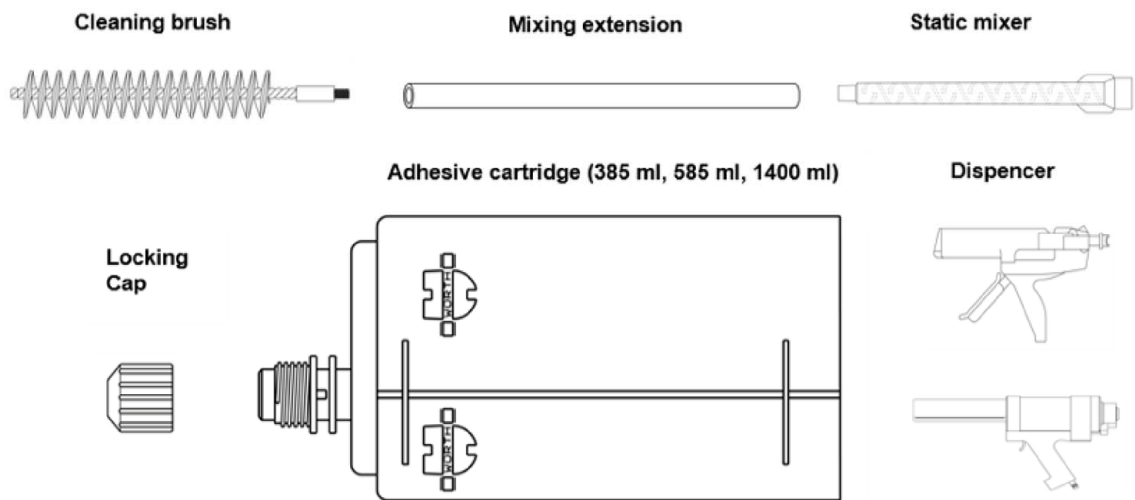
Annex 12.1

**Würth single anchor point S-CO403 installed with
Würth injection adhesive WIT-PE 500, WIT-PE 1000, WIT-VM 250 or WIT-UH 300**



All dimensions in mm.

Würth injection adhesive WIT-PE 500, WIT-PE 1000, WIT-VM 250 or WIT-UH 300 (different container sizes)




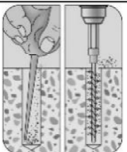
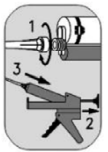

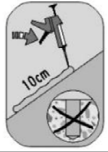
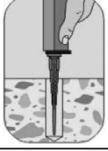

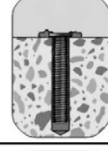
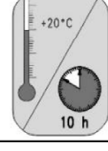
**Cartridge imprint: processing data, storage life, batch no.,
hazard code, travel scale, curing and processing time**

Würth Fall Protection Systems

**S-CO403 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Fitted state/ System components**

Annex 12.2

Installation instructions for Würth single anchor point S-CO403 with injection adhesive WIT-PE 500, WIT-PE 1000, WIT-VM 250 or WIT-UH 300

1		Pay attention to fixing installation instructions and approval (ETA-09/0040, ETA-19/0542, ETA-12/0164 und ETA-17/0127). Using a hammer drill, create a bore hole with a drill nominal diameter of $d_o=24$ mm and bore hole depth of $h_1 \geq 130$ mm vertically to the surface of the anchor base.
2		Clean drill hole, the corresponding ETA or the manufacturers installation instructions have to be considered.
3		Attach the mixer to the cartridge using the dispenser.
4		Pay attention to the setting depth.
5		Before use, dispense a strand of around 10 cm but do not inject it into the bore hole.
6		Checking the temperature of the anchor base: The minimum temperature acc. to the ETA has to be considered. Starting from the base of the bore hole, fill the hole with injection adhesive. The filling quantity has to be chosen acc. to the corresponding ETA.
7		Press in single anchor point S-CO403 while turning slightly until the collar touches the concrete substrate
8		Visually check the amount of adhesive or setting depth marking respectively. The adhesive has to reach the surface. If no adhesive is visible at the surface, the anchor point must be removed immediately and injection adhesive injected again.
9		Comply with the curing time of the injection adhesive. Processing is possible only from a temperature of $\geq +5^\circ\text{C}$. See the processing notes on the cartridge and the installation instructions.

Würth Fall Protection Systems

**S-CO403 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Installation instructions**

Annex 12.3

Table 13: Substrate reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

anchor device	rod height [mm]	fasteners	edge distance c_{min} [mm]	minimum thickness of concrete h_{min} [mm]
S-CO396	Mounting part	Würth W-VIZ	200	170
S-CO396	Mounting part			

All components of the personal protection device (injection system and concrete) are applicable in the weathered outdoor area.

The concrete substructure has to be drilled using a drill hole diameter of 24 mm and a drilling depth of ≥ 130 mm.

Design values of the load bearing capacity

Transverse forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{19,0}{1,5} = 12,7 \text{ kN}$$

Tensile forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{43,9}{1,5} = 29,3 \text{ kN}$$

The recommended safety factor γ_M is 1.5, unless there is no partial safety factor in national regulations or national annexes to Eurocode 2.

Dynamic strength

3 persons at maximum

Deformation capacity

≤ 10 mm at 0,70 kN

ETA-04/0095

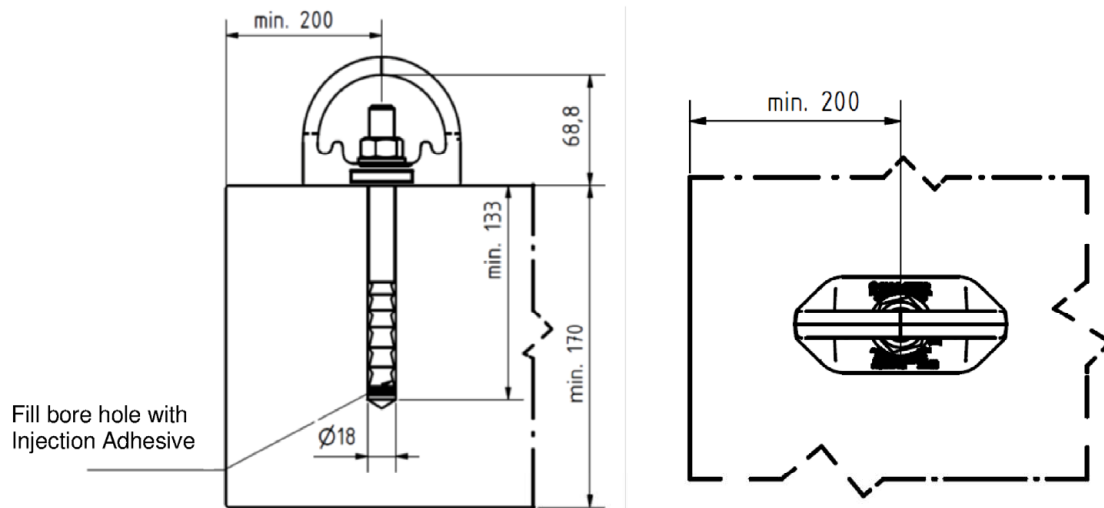
WIT-VM 100 and WIT-VIZ

Würth Fall Protection Systems

S-CO396/397 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked)

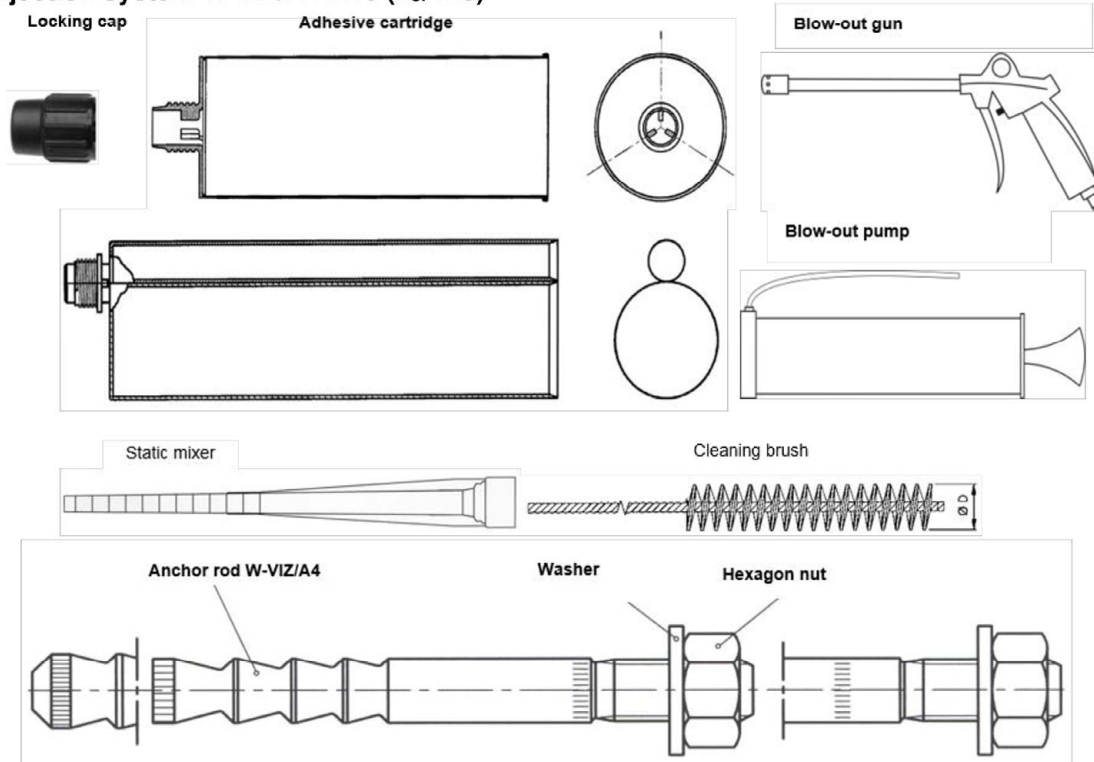
Annex 13.1

Würth single anchor point S-CO396/397 installed, with Würth injection system W-VIZ/A4 M16 (h_{ef} 125)



All dimensions in mm.

Würth injection system W-VIZ/A4 M16 (h_{ef} 125)




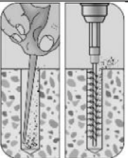
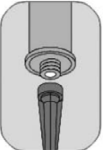

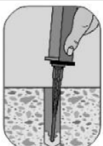




Cartridge imprint processing data, storage life, batch no.,
hazard code, travel scale, curing and processing time

Würth Fall Protection Systems

S-CO396/397 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Fitted state/ System components

Annex 13.2

Installation instructions for Würth single anchor point S-CO396/397 with Würth injection system W-VIZ/A4 M16 (h_{ef} 125)

1		Pay attention to fixing installation instructions and approval (ETA-04/0095).
		Using a hammer drill, create a bore hole with a drill nominal diameter of $d_o=18$ mm and bore hole depth of $h_1 \geq 130$ mm vertically to the surface of the anchor base.
2		Clean drill hole, the corresponding ETA or the manufacturers installation instructions have to be considered.
3		Attach the mixer to the cartridge using the dispenser.
4		Before use, dispense a strand of around 10 cm but do not inject it into the bore hole.
5		Checking the temperature of the anchor base: The minimum temperature acc. to the ETA has to be considered. Starting from the base of the bore hole, fill the hole with injection adhesive. The filling quantity has to be chosen acc. to the corresponding ETA.
6		Push in the anchor rod with a slight turning movement down to the bore hole base.
7		Visually check the amount of adhesive or setting depth marking respectively. The adhesive has to reach the surface. If no adhesive is visible at the surface, the anchor rod must be removed immediately and injection adhesive injected again.
8		Comply with the curing time of the injection adhesive. Processing is possible only from a temperature of $\geq +5^\circ\text{C}$. See the processing notes on the cartridge and the installation instructions.
9		Install the single anchor point S-CO396/397, do not exceed max. torque of 50 Nm.

Würth Fall Protection Systems

**S-CO396/397 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Installation instructions**

Annex 13.3

Table 14: Substrate reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

anchor device	rod height [mm]	fasteners	edge distance c_{min} [mm]	minimum thickness of concrete h_{min} [mm]
S-CO398	Mounting part	Würth W-VIZ-IG	250	160
S-CO399	Mounting part			

All components of the personal protection device (injection system and concrete) are applicable in the weathered outdoor area.

The concrete substructure has to be drilled using a drill hole diameter of 22 mm and a drilling depth of ≥ 120 mm.

Design values of the load bearing capacity

Transverse forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{19,0}{1,5} = 12,7 \text{ kN}$$

Tensile forces

$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{39,9}{1,5} = 26,6 \text{ kN}$$

The recommended safety factor γ_M is 1.5, unless there is no partial safety factor in national regulations or national annexes to Eurocode 2.

Dynamic strength

3 persons at maximum

Deformation capacity

≤ 10 mm at 0,70 kN

ETA-04/0095

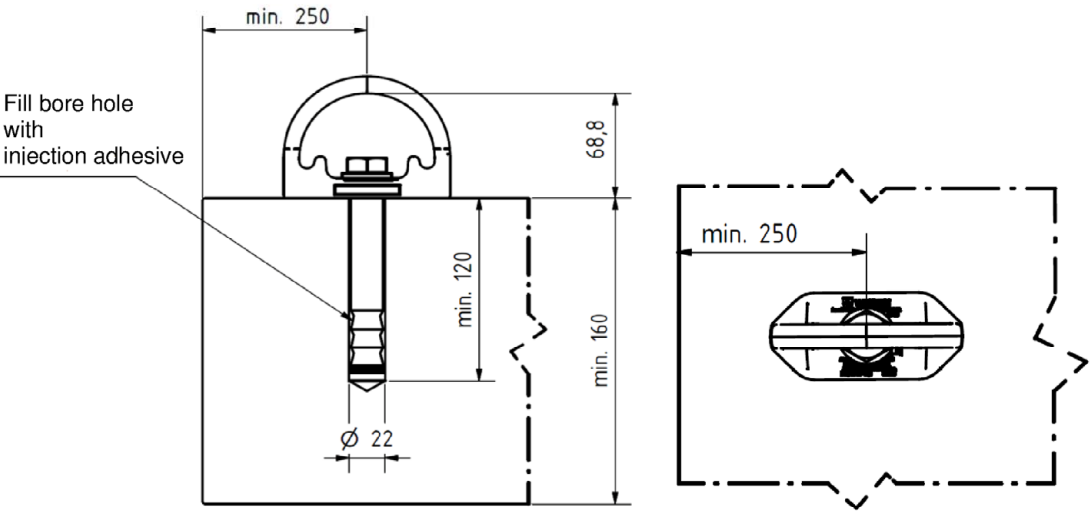
WIT-VM 100 and WIT-VIZ

Würth Fall Protection Systems

S-CO398/399 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked)

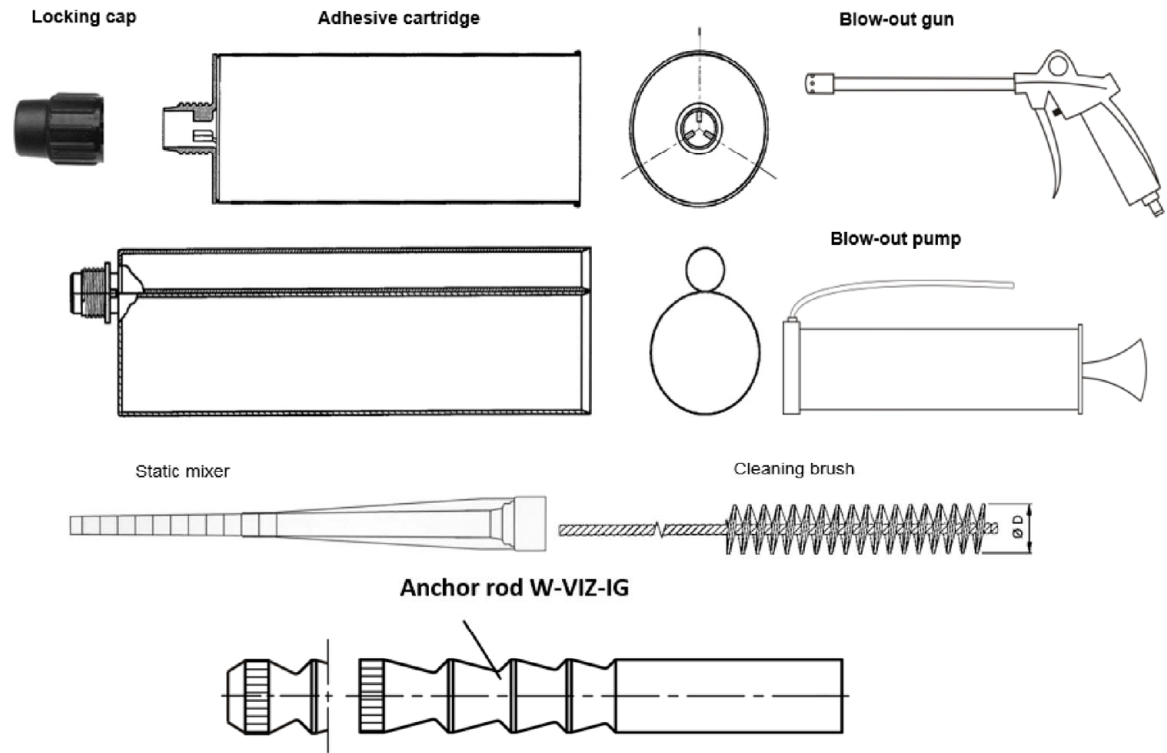
Annex 14.1

Würth single anchor point S-CO398/399 installed with Würth injection system W-VIZ-IG/A4 M16X120



All dimensions in mm.

Würth injection system W-VIZ-IG/A4 M16X120




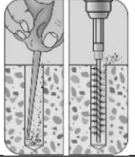
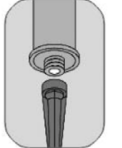

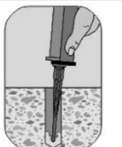



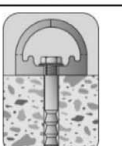
Cartridge imprint: processing data, storage life, batch no., hazard code, travel scale, curing and processing time

Würth Fall Protection Systems

S-CO398/399 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Fitted state/ System components

Annex 14.2

Installation instructions for Würth single anchor point S-CO398/399 with Würth injection system W-VIZ-IG/A4 M16X120

1		Pay attention to fixing installation instructions and approval (ETA-04/0095).
		Using a hammer drill, create a bore hole with a drill nominal diameter of $d_o=22$ mm and bore hole depth of $h_1 \geq 120$ mm vertically to the surface of the anchor base.
2		Clean drill hole, the corresponding ETA or the manufacturers installation instructions have to be considered.
3		Attach the mixer to the cartridge using the dispenser.
4		Before use, dispense a strand of around 10 cm but do not inject it into the bore hole.
5		Checking the temperature of the anchor base: The minimum temperature acc. to the ETA has to be considered. Starting from the base of the bore hole, fill the hole with injection adhesive. The filling quantity has to be chosen acc. to the corresponding ETA.
6		Push in the anchor with internal thread with a slight turning movement down to the bore hole base.
7		Visually check the amount of adhesive or setting depth marking respectively. The adhesive has to reach the surface. If no adhesive is visible at the surface, the anchor with internal thread must be removed immediately and injection adhesive injected again. Comply with the curing time of the injection adhesive.
8		Remove excess adhesive and protective cap.
9		Install the single anchor point S-CO398/399, do not exceed max. torque of 50Nm

Würth Fall Protection Systems

**S-CO398/399 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Installation instructions**

Annex 14.3

Table 15: Substrate reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

anchor device	rod height [mm]	fasteners	edge distance c_{min} [mm]	minimum thickness of concrete h_{min} [mm]
S-CO395	Screw-on part	Würth Fixanchor W-FAZ/A4 M10x90	150	120

All components of the personal protection device (fastener and concrete) are applicable in the weathered outdoor area.

The concrete substructure has to be drilled using a drill hole diameter of 10 mm and a drilling depth of ≥ 75 mm.

Design values of the load capacity

Transverse forces

Longitudinal
$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{21,95}{1,5} = 14,6 \text{ kN}$$

In the transverse direction
$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{20,99}{1,5} = 14,0 \text{ kN}$$

Tensile forces
$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{18,37}{1,5} = 12,2 \text{ kN}$$

The recommended safety factor γ_M is 1.5, unless there is no partial safety factor in national regulations or national annexes to Eurocode 2.

Dynamic strength

3 persons at maximum

Deformation capacity

≤ 10 mm at 0,70 kN

ETA-99/0011

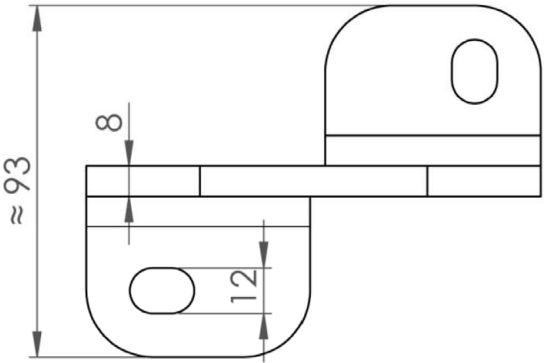
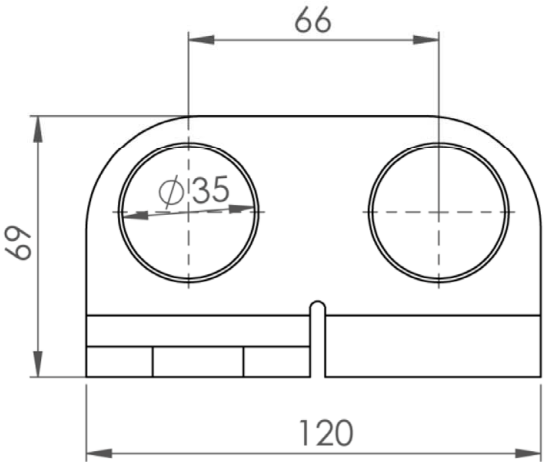
Würth Fixachor W-FAZ/A4 M10x90

Würth Fall Protection Systems

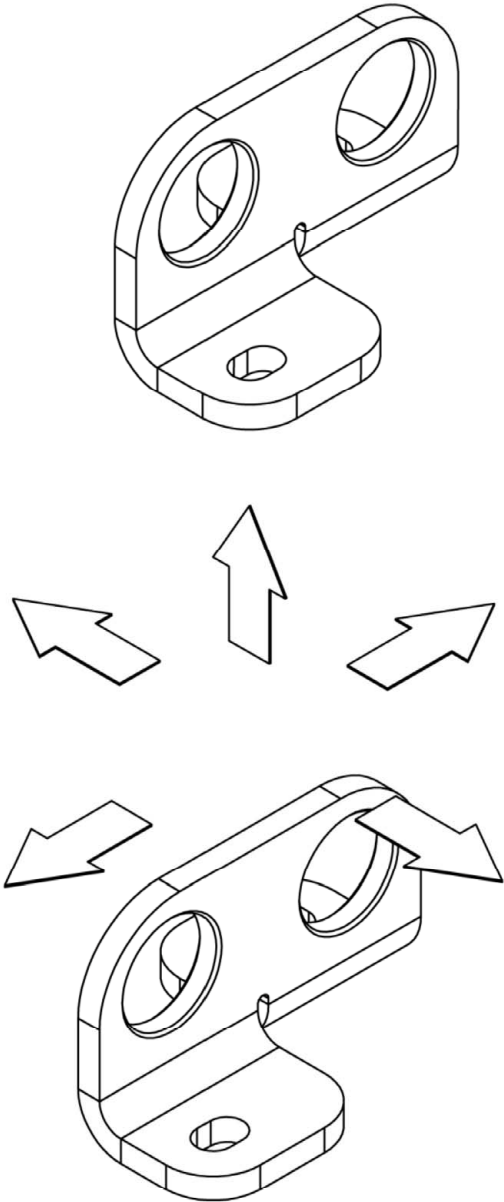
S-CO395 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked)

Annex 15.1

Würth single anchor point S-CO395



All dimensions in mm.



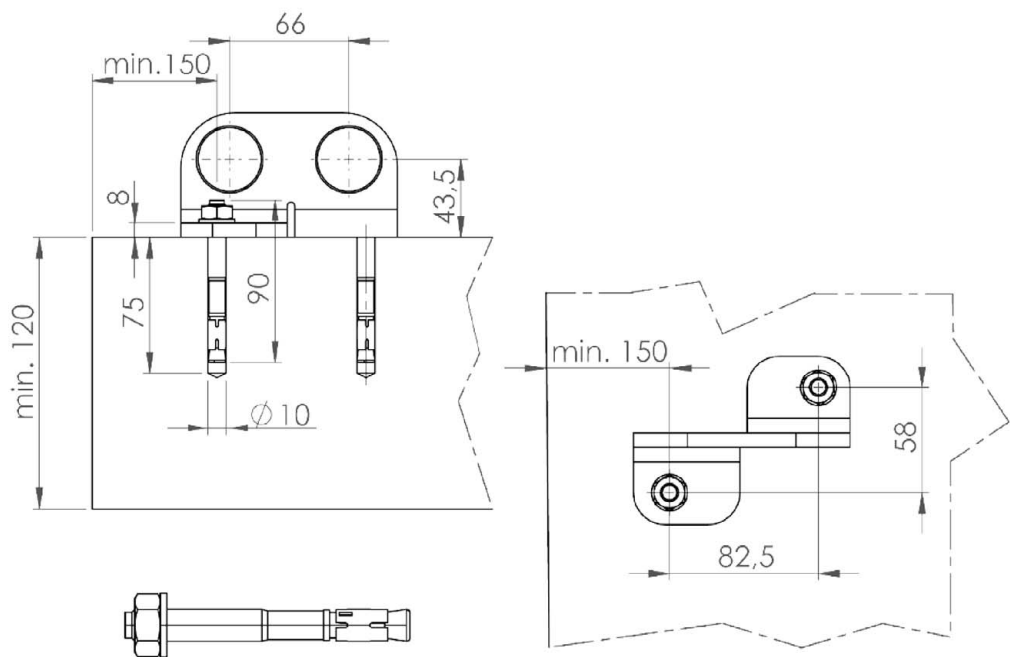
Electronic copy of the ETA by DIBt: ETA-20/0956

Würth Fall Protection Systems

S-CO395 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Dimensions

Annex 15.2

**Würth single anchor point S-CO395 installed with
Würth Fixanchor W-FAZ/A4 M10x90**



All dimensions in mm.

**Installation instructions for Würth single anchor point S-CO395
with Würth Fixanchor W-FAZ/A4 M10x90**

1		Pay attention to fixing installation instructions and approval (ETA-99/0011).
		Create a bore hole with a drill nominal diameter of $d_o=10$ mm and bore hole depth of $h_1 \geq 75$ mm vertically to the surface of the anchor base.
2		Remove the bore dust, e.g. by blowing it out.
3		Using a hammer or machine setting tool, insert the anchor in the anchor base through the anchor point's 2 designated through-holes
4		Apply torque of 35 Nm with a calibrated torque wrench.

Würth Fall Protection Systems

**S-CO395 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Fitted state/ System components / Installation instructions**

Annex 15.3

Table 16: Substrate reinforced normal-weight concrete C20/25 to C50/60 (cracked or non-cracked)

anchor device	rod height [mm]	fasteners	edge distance c_{min} [mm]	minimum thickness of concrete h_{min} [mm]
S-CO394	Screw-on part	Würth concrete screw W-BS A4 SW15-5-35 10x90	150	130

All components of the personal protection device (fastener and concrete) are applicable in the weathered outdoor area.

The concrete substructure has to be drilled using a drill hole diameter of 10 mm and a drilling depth of ≥ 92 mm.

Design values of the load bearing capacity

Transverse forces

Longitudinal
$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{20,84}{1,5} = 13,9 \text{ kN}$$

In the transverse direction
$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{20,87}{1,5} = 13,9 \text{ kN}$$

Tensile forces
$$F_{Rd} = \frac{F_{Rk}}{\gamma_M} = \frac{21,82}{1,5} = 14,5 \text{ kN}$$

The recommended safety factor γ_M is 1.5, unless there is no partial safety factor in national regulations or national annexes to Eurocode 2.

Dynamic strength

3 persons at maximum

Deformation capacity

≤ 10 mm at 0,70 kN

ETA-16/0043

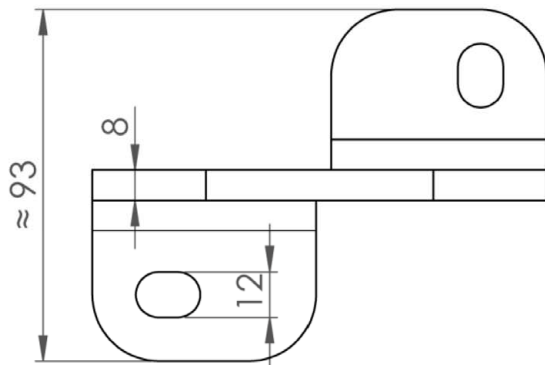
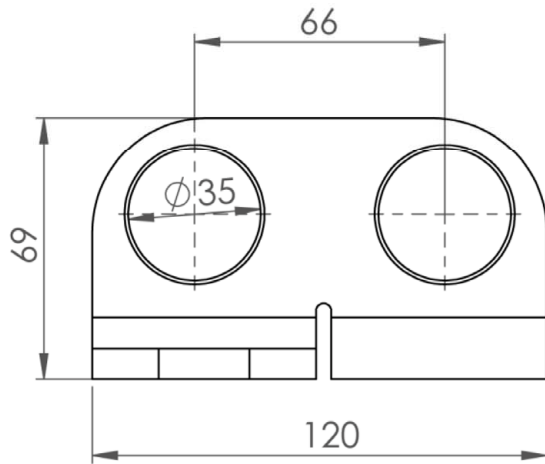
Würth concrete screw W-BS A4 SW15-5-35-10x90

Würth Fall Protection Systems

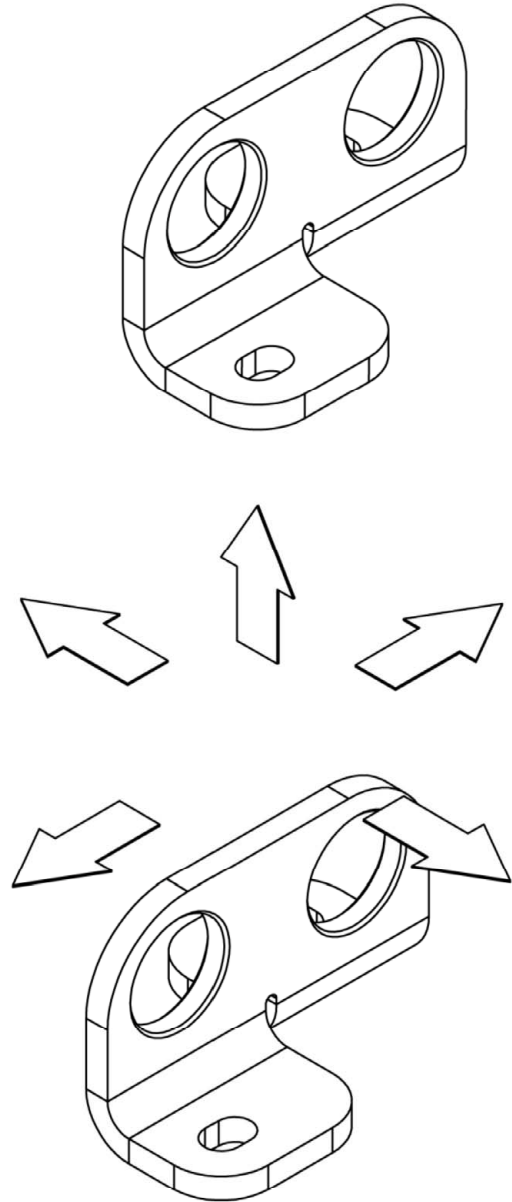
S-CO394 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked)

Annex 16.1

Würth single anchor point S-CO394



All dimensions in mm.

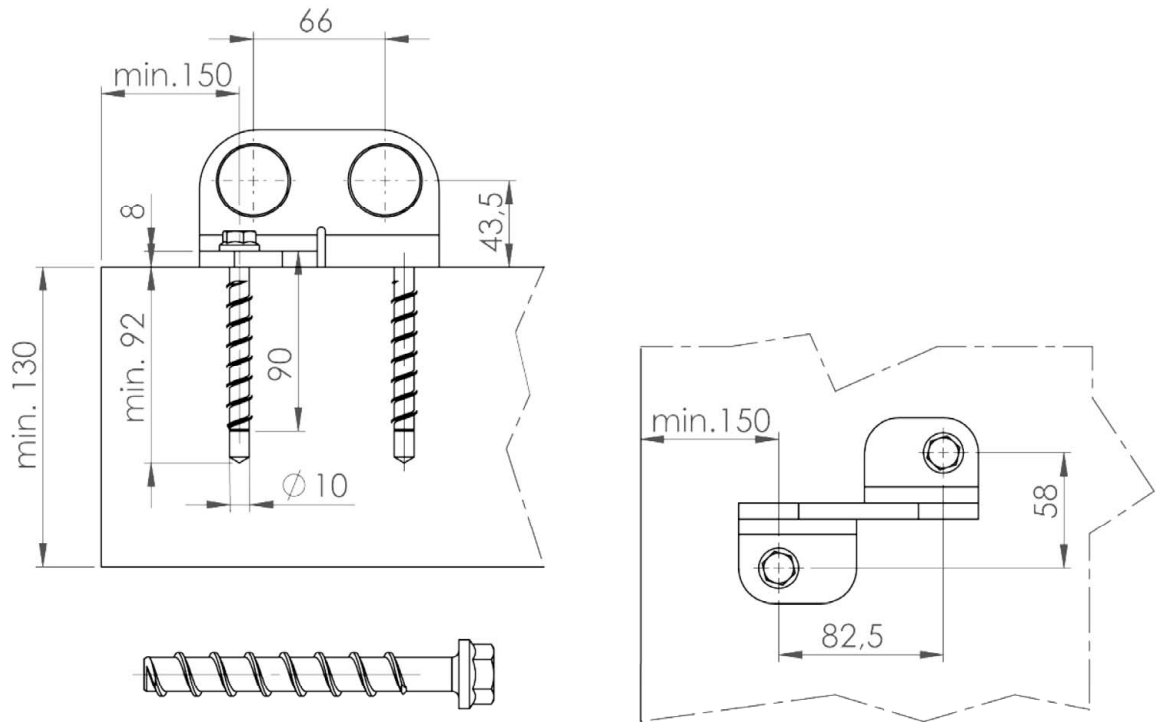


Würth Fall Protection Systems

S-CO394 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Dimensions

Annex 16.2

**Würth single anchor point S-CO394 installed with
Würth concrete screw W-BS A4 SW15-5-35-10x90**



All dimensions in mm.

**Installation instructions for Würth single anchor point S-CO394
with Würth concrete screw W-BS / A4 Typ S 10-35 / 90 2x100/10**

1		Pay attention to fixing installation instructions and approval (ETA-16/0043). Using a hammer drill, create a bore hole with a drill nominal diameter of $d_b=10$ mm and bore hole depth of $h_1 \geq 92$ mm vertically to the surface of the anchor base
2		Remove the bore dust, e.g. by blowing it out.
3		Insert the concrete screw in the anchor base through the anchor point's 2 through-holes.
4		Manually, or using a tangential impact wrench, secure the concrete screw until the anchor point's base plate is pressed against the concrete base. Recommended torque: 55 Nm.

Würth Fall Protection Systems

Annex 16.3

**S-CO394 for reinforced normal-weight concrete C20/25 to C50/60
(cracked or non-cracked) Installation instructions**