



**S-UF** Façade Plug with flat collar and zinc plated hexagon flange screw and SW 13/T40 drive

**S-UF M6** Façade Plug with flat collar and mechanical galvanized hexagon flange screw and SW 13/T40 drive

**S-UF A2** Façade Plug with flat collar and stainless steel (A2) hexagon flange screw and SW 13/T40 drive



**S-UP** Façade Plug with collar and zinc plated countersunk screw and T40 drive

**S-UP M6** Façade Plug with collar and mechanical galvanized countersunk screw and T40 drive



**S-FP** Façade Plug for pre-installation with collar and hexagon flange screw and SW 13/T40 drive

**S-FP** Façade Plug for pre-installation with collar and hexagon flange screw and SW 13/T40 drive

## MATERIAL

Polyamide with zinc plated, mechanical galvanized or stainless steel screws

## BASE MATERIAL

Cracked or non-cracked concrete, natural stone, solid and hollow bricks, aerated concrete, expanded clay aggregated concrete

## TECHNICAL APPROVALS

ETA-12/0003 ETAG 020

Russian Technical Rosstroy Approval

## LOAD RANGE

tension loads:  $N_{Sk} = 0,2 - 5,0$

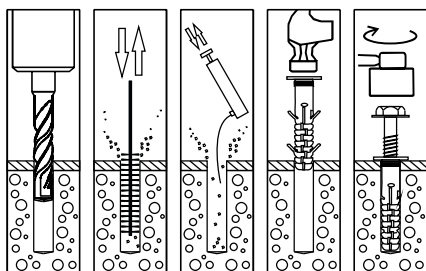
shear loads:  $V_{Sk} = 0,2 - 6,5$

## AVAILABLE RANGE

Plugs are colour coded according to size for easy identification!

	S-FP
S-UF	10x80/20
10 x 80 – 10 x 160 ZN MG	10x80/35
10 x 100 A2	10x80/55
	10x80/80
S-UP	10x100/15
10 x 80 – 10 x 160 ZN MG	10x100/35
	10x100/60
Other stainless steel screws A2 (A4)	10x115/20
possible on request.	10x115/45
	10x135/25

## INSTALLATION PROCEDURE



## APPLICATIONS

- Frames, e.g. windows and doors
- Façade and roof substructures
- Cabinets and wardrobes
- Squared timbers

## BENEFITS

- Safe multipurpose solutions for through (S-UF, S-UP) and pre-installations (S-FP)
- Easy to install
- High permissible loads in hard and porous materials
- Every plug length tested for two variable fixing depths
- No extra washers needed
- Plug collars act as separating plastic washers preventing contact corrosion
- Easy size identification due to colour-coded plugs

## DESCRIPTION OF PRODUCT

- Sormat Universal Plugs anchor by means of friction.

S-UF, S-UP, S-FP

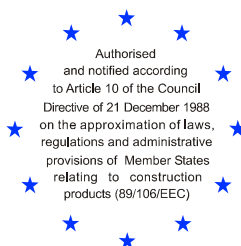
S-UF / S-UP		Fixing details [mm]										Permissible <sup>1)</sup> (recommended <sup>3)</sup> ) loads - only for approved characteristic centre spacings and edge distances - Design Method as per ETAG-020 -																			
Installation mode	Designation Type d <sub>0</sub> x L	Universal Façade Plugs	Anchor and fixture details			Installation data							Base material		Tension load N <sub>s1</sub> <sup>1)</sup> [kN]	Shear load V <sub>sk</sub> <sup>1)</sup> [kN] without bending	Permissible bending moment M <sub>sk</sub> <sup>1)</sup> [Nm]														
			Nominal size	Plug length	Color	Screw length <sup>4)</sup>	Plug collar Ø / height	Hole in fixture Ø	Width across flats Hex-Head	Tonk size	Fixture thickness t <sub>fix</sub>	Drill hole diameter d <sub>0</sub>	Minimum hole depth h <sub>1</sub>	Nominal setting depth h <sub>nom</sub>	Min. concrete thickness h <sub>min</sub>	Charact. centre spacing s <sub>cr,N</sub>	Minimum centre spacing s <sub>min</sub>	... for respective edge distance c	Charact. edge distance c <sub>cr,N</sub>	Minimum edge distance c <sub>min</sub>	... for respective spacing s	TYPE	DESCRIPTION	Service temperature	Material	Material					
STANDARD ANCHORAGE DEPTH	S-UF 10 x 80 S-UP 10 x 80	S-UF 10 x 100 S-UP 10 x 100	S-UF 10 x 115 S-UP 10 x 115	S-UF 10 x 135 S-UP 10 x 135	S-UF 10 x 160 S-UP 10 x 160	10	115	Grey	120	S-UF 16/2 S-UP 14/-	10.5	S-UF SW13 S-UP -	S-UF T40 S-UP T40	10	80	70	150	150	300	CONCRETE	C12/15	CRACKED	1,8	1,6	6,5	4,9	24°C <sup>5)</sup> / 40°C <sup>6)</sup>	Material	Material		
																						NON-CRACKED <sup>2)3)</sup>	3,5	2,8	6,5	4,9				50°C <sup>5)</sup> / 80°C <sup>6)</sup>	
																						C16/20 TO C50/60	CRACKED	2,6	2,2	6,5					4,9
REDUCED ANCHORAGE DEPTH <sup>3)</sup>	S-UF 10 x 80 S-UP 10 x 80	S-UF 10 x 100 S-UP 10 x 100	S-UF 10 x 115 S-UP 10 x 115	S-UF 10 x 135 S-UP 10 x 135	S-UF 10 x 160 S-UP 10 x 160	10	115	Grey	120	S-UF 16/2 S-UP 14/-	10.5	S-UF SW13 S-UP -	S-UF T40 S-UP T40	10	60	50	90	250	360 720	178,6	-	CONCRETE	C12/15	CRACKED	0,7	0,6	3,0	24°C <sup>5)</sup> / 40°C <sup>6)</sup>	Material	Material	
																								NON-CRACKED <sup>2)</sup>	1,4	1,1	3,0				50°C <sup>5)</sup> / 80°C <sup>6)</sup>
																								C16/20 TO C50/60	CRACKED	1,0	0,9				
VALUES REFER TO ALL SIZES	S-UF 16/2 S-UP 14/-	S-UF SW13 S-UP -	S-UF T40 S-UP T40	10	60	50	250	360 720	178,6	-	CONCRETE	C12/15	CRACKED	1,8	1,6	6,5	4,9	24°C <sup>5)</sup> / 40°C <sup>6)</sup>	Material	Material											
													NON-CRACKED <sup>2)3)</sup>	3,5	2,8	6,5	4,9														
													C16/20 TO C50/60	CRACKED	2,6	2,2	6,5				4,9										
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VALUES REFER TO ALL SIZES	S-UF 16/2 S-UP 14/-	S-UF SW13 S-UP -	S-UF T40 S-UP T40	10	60	50	250	360 720	178,6	-	MASONRY	SOLID	CLAY	fb ≥ 12 MPa	1,4	1,4	1,4	11,7	8,7												
														fb ≥ 20 MPa	1,7	1,7	1,7														
														SAND-LIME	fb ≥ 12 MPa	1,7	1,7			1,7											
VALUES REFER TO ALL SIZES	S-UF 16/2 S-UP 14/-	S-UF SW13 S-UP -	S-UF T40 S-UP T40	10	60	50	250	360 720	178,6	-	MASONRY	SOLID	CLAY	fb ≥ 12 MPa	1,7	1,7	1,7	11,7	8,7												
														fb ≥ 20 MPa	2,6	2,6	2,6														
														SAND-LIME	fb ≥ 12 MPa	2,6	2,6			2,6											
VALUES REFER TO ALL SIZES	S-UF 16/2 S-UP 14/-	S-UF SW13 S-UP -	S-UF T40 S-UP T40	10	60	50	250	360 720	178,6	-	MASONRY	HOLLOW	CLAY	fb ≥ 12 MPa	0,3	0,2	0,2	11,7	8,7												
														fb ≥ 20 MPa	0,7	0,7	0,7														
														SAND-LIME	fb ≥ 12 MPa	0,7	0,7			0,7											

1) Load figures include the resistances' partial safety factors as per approvals and a partial safety factor on the action of γ<sub>T1</sub> = 1,4. 2) Concrete is considered non-cracked when the value of tension within the concrete is σ<sub>L</sub> + σ<sub>p</sub> ≤ 0. In the absence of detailed verification σ<sub>p</sub> = 3 H/MPa can be assumed (σ<sub>L</sub> equals the tension within the concrete as a result of external loads, forces on anchor included; σ<sub>p</sub> equals the tension coming from shrinkage or creep of the concrete, as well as displacements of supports or temperature variations). 3) Not part of ETA approval. Values are manufacturer recommendations. 4) Screw length measured below Hex-Head (S-UF) and including head (S-UP). 5) Maximum long term temperature. 6) Maximum long term temperature. 7) Minimum allowable spacing between different anchor groups or single anchors in masonry. 8) Minimum allowable spacing in masonry. Values refer to anchors within one group. Top value: s<sub>1,min</sub> (perpendicular to edge) / Bottom value: s<sub>2,min</sub> (parallel to edge)

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Mitglied der EOTA  
Member of EOTA

## European Technical Approval ETA-12/0003

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung <i>Trade name</i>	Sormat Universal-Rahmendübel S-UF, S-UP und S-FP <i>Sormat Universal Facade Plugs S-UF, S-UP and S-FP</i>
Zulassungsinhaber <i>Holder of approval</i>	Sormat Oy Harjutie 5 21290 RUSKO FINNLAND
Zulassungsgegenstand und Verwendungszweck <i>Generic type and use of construction product</i>	Kunststoffdübel als Mehrfachbefestigung von nichttragenden Systemen zur Verankerung im Beton und Mauerwerk <i>Plastic anchors for multiple use in concrete and masonry for non- structural applications</i>
Geltungsdauer: <i>Validity:</i>	vom <i>from</i> 13 January 2012 bis <i>to</i> 13 January 2017
Herstellwerk <i>Manufacturing plant</i>	Sormat Werk 1 / Sormat Plant 1

Diese Zulassung umfasst  
*This Approval contains*

21 Seiten einschließlich 9 Anhänge  
*21 pages including 9 annexes*



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