

## European Technical Assessment

**ETA-23/0859**  
of 14.04.2026

### General Part

<b>Technical Assessment Body issuing the European Technical Assessment</b>	SINTEF AS by its institute SINTEF Community
<b>Trade name of the construction product</b>	SFS Group flat roof fasteners
<b>Product family to which the construction product belongs</b>	Fasteners for mechanically fastened flexible roof waterproofing sheets
<b>Manufacturer</b>	SFS Group Schweiz AG Segment Fastening Systems Rosenbergsaustrasse 10 CH-9435 Heerbrugg Switzerland, <a href="http://www.sfs.com">www.sfs.com</a>
<b>Manufacturing plants</b>	Factories of SFS Group
<b>This European Technical Assessment contains</b>	38 pages including 2 Annexes which form an integral part of this assessment
<b>This European Technical Assessment is issued in accordance with Article 95(4) of Regulation (EU) 2024/3110, on the basis of</b>	EAD 030351-00-0402, Systems of Mechanically Fastened Flexible Roof Waterproofing Sheets
<b>This version replaces</b>	ETA 23/0859, issued on 19.03.2024

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## Specific parts

### 1. Technical description of the product

*SFS Group flat roof fasteners* are used as mechanical fastening of insulation, bitumen based single/multi-layer or single ply waterproofing membranes, or polymeric single ply waterproofing membranes, for flat roofing. The supporting roof structure may be of profiled steel sheets, aluminium sheets, concrete, aerated concrete, pumice panel or a timber construction as defined in EAD 030351-00-0402, February 2019, *Systems of mechanically fastened flexible roof waterproofing sheets* (MEFAWAS), paragraph 1.1.

The range of fasteners consists of washers, washers with integrated sleeve, screws, nails, and plugs as illustrated in Annex 1.

The fasteners are introduced to the market separately from the other components of roof waterproofing membrane kits, and this ETA covers only the performance characteristics of the *SFS Group flat roof fasteners*. A separate ETA according to EAD 030351-00-0402 is necessary in order to cover an entire kit for mechanically fastened roof waterproofing sheets.

### 2. Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

#### Installation and design:

#### 2.1. General

The fasteners must be installed according to the manufacturer's instructions. It is the manufacturer's responsibility to provide correct information about the application of the products to the users.

Fastening with steel washers may be applied on stiff substrates, i.e. on timber roof substrate, concrete or on suitable insulation.

Plastic fasteners with integrated sleeve or step secured steel washers (steel washers together with screws equipped with a separate threading which avoid the washer to be pressed down) are recommended on thermal insulation.

Measures should be taken during design to ensure that galvanic corrosion between metal parts, especially between substrate and screw, does not occur. Likewise, use of insulation materials containing substances which can affect the performance of the fasteners must be avoided.

#### 2.2. Fastening in steel sheets

Characteristic pull-out values and fixing details for the different fasteners, as well as material properties for steel substrates are given in table 1 found in annex 2 of this ETA. A site pull-out test is recommended if the properties of the steel sheet substrate are unknown.

#### 2.3. Fastening in aluminium sheets

Characteristic pull-out values and fixing details for the different fasteners, as well as material properties for aluminium substrates are given in table 1 found in annex 2 of this ETA. A site pull-out test is recommended if the properties of the aluminium sheet substrate are unknown.

#### **2.4. Fastening in timber constructions**

Characteristic pull-out values and fixing details for the different fasteners, as well as material properties for timber construction substrates are given in table 2 found in annex 2 of this ETA. A site pull-out test is recommended if the properties of the timber substrate are unknown.

#### **2.5. Fastening in concrete**

Characteristic pull-out values and fixing details for the different fasteners, as well as material properties for concrete substrates are given in table 2 found in annex 2 of this ETA. A site pull-out test is recommended if the properties of the concrete substrate are unknown.

#### **2.6. Fastening in aerated/light weight concrete**

Characteristic pull-out values and fixing details for the different fasteners, as well as material properties for aerated/light-weight concrete substrates are given in table 2 found in annex 2 of this ETA. A site pull-out test is recommended if the properties of the aerated/light weight concrete substrate are unknown.

#### **2.7. Fastening in pumice panel**

Characteristic pull-out values and fixing details for the different fasteners, as well as material properties for pumice panel substrates are given in table 2 found in annex 2 of this ETA. A site pull-out test is recommended if the properties of the pumice panel substrate are unknown.

#### **2.8. Working life/durability**

The provisions made in this ETA are based on an assumed working life of the component of at least 10 years. The actual working life is also dependent on the design of the roof and the waterproofing systems.

The indications given on the working life cannot be interpreted as a guarantee given by the producer but has 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**

No performance determined.

#### **3.2. Hygiene, health, and environment**

The manufacturer declares that raw material, components, production processes and surface treatment are in accordance with current, relevant national and international regulations and laws.

#### **3.3. Safety in use**

The fasteners have been tested for axial pull out performance from substrates and pull through performance between fasteners and washers, see Annex 2. The fasteners have been tested for wind uplift according to EN-16002:2010, ETA Guideline No. 006 edition March 2000, amended November 2012 and EAD 030351-00-0402. The wind uplift performance of roof waterproofing kits is mainly determined by the roofing membranes. Several full-scale wind load tests with bituminous and polymeric membranes have been executed.

The membranes are fixed with washers, washers with integrated sleeves and barbed washers in combination with fixings to substrates of steel sheets, aluminium sheets, timber, concrete, aerated

concrete, and pumice panel. The complete test reports may be obtained from SFS Group Schweiz AG.

The screws are considered safe against unwinding.

### **3.4. Aspects of durability**

The SFS Group tube washers produced of polypropylene and polyamide satisfy the aspects of durability and have acceptable resistance to brittleness according to EAD 030351-00-0402, chapter 2.2.3.3 and A.2.3.

All metallic *SFS Group flat roof fasteners* components correspond to corrosion protection according to EAD 030351-00-0402, chapter A.2.4, see Annex 2. Test-procedure for these products is 15 exposure cycles (humid atmosphere 2 litres of sulphur dioxide). Carbon steel fasteners have a corrosion protection of Chrome 6 free Durocoat®. Stainless steel fasteners are made in grade SS304/A2 or SS316/A4.

### **3.5. Identification**

*SFS Group flat roof fasteners* components are identified by dimensions, designation, drawings, performances, as given in annex 1 and 2 in this ETA. The components belonging to *SFS Group flat roof fasteners* are marked with the designation according to figures in annex 1. All packaging is marked with product type and batch number, including CE marking.

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

According to Decision 98/143/EC by the European Commission, the system 2+ of assessment and verification of constancy of performance applies. See Annex V to Regulation (EU) No. 305/2011.

## **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 at SINTEF AS.

Issued in Oslo on 14.04.2026

By

SINTEF AS by its institute SINTEF Community



Anne-Jorunn Enstad

Certification Manager

## Annex 1

### List of products <sup>1)</sup>

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SP-70-DX,SX	24
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Sarnafast DT-70×70	25
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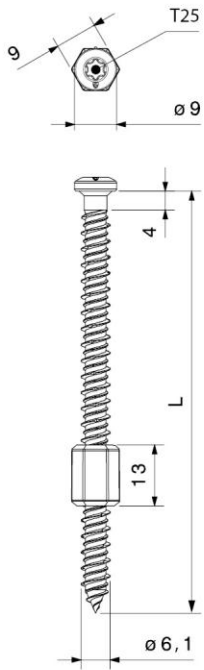
<sup>1)</sup> Single products without combinations

<sup>2)</sup> For product drawing

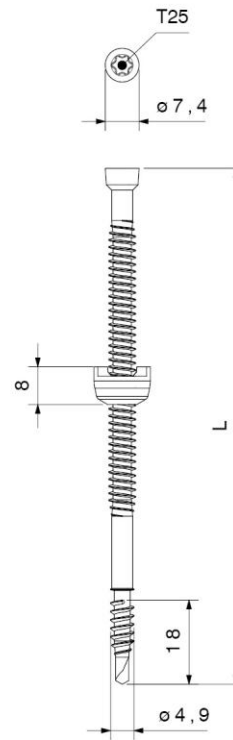
<sup>3)</sup> Plastic plug or nail (fastener) incl. sleeve

# Fasteners

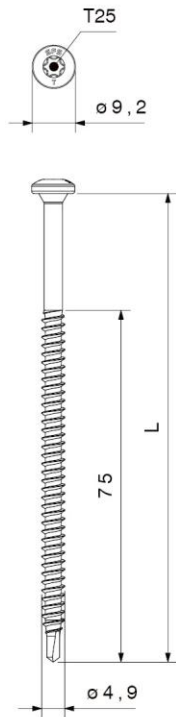
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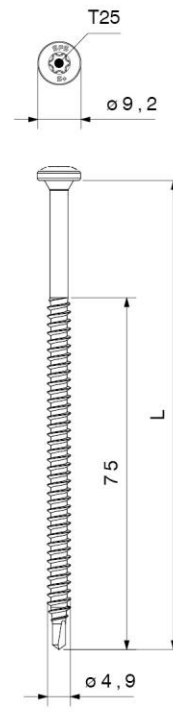
## BSA-N-4,8



## BS-4,8



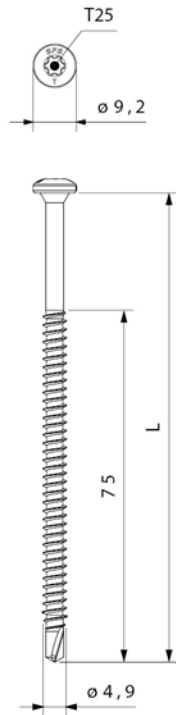
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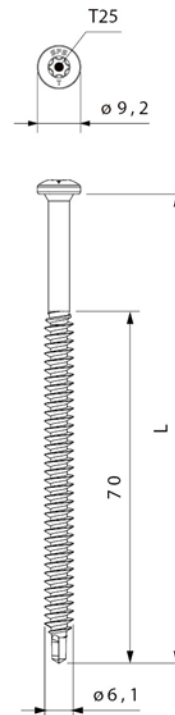
SFS Group flat roof fasteners

# Fasteners

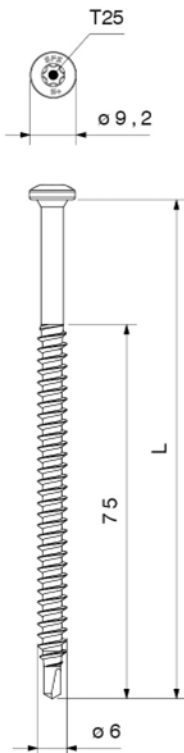
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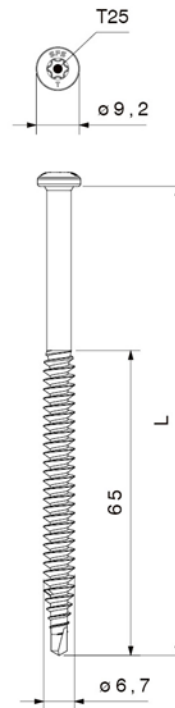
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## BS-S-6,1



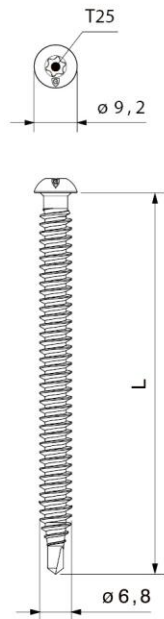
## BS-6,7



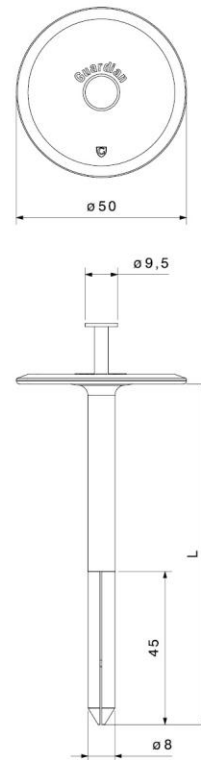
SFS Group flat roof fasteners

# Fasteners

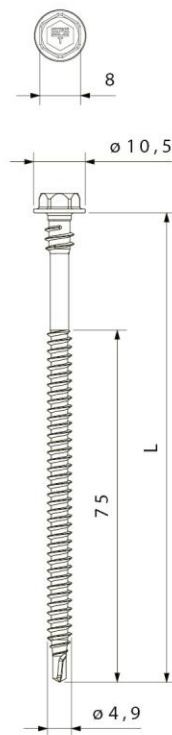
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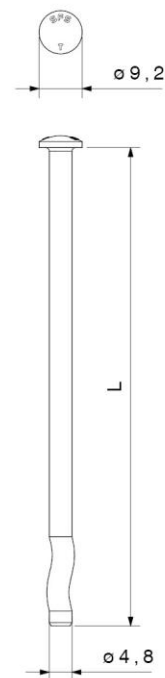
## CP50



## DBT-4,8



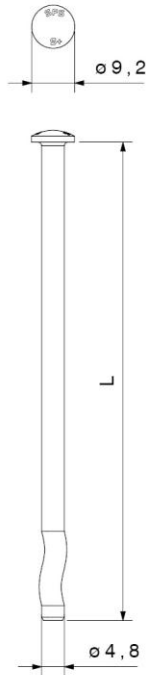
## DT-4,8



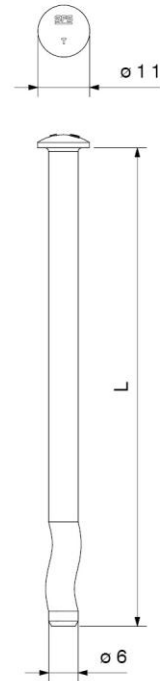
SFS Group flat roof fasteners

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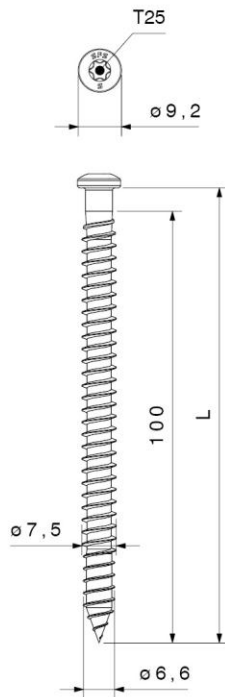
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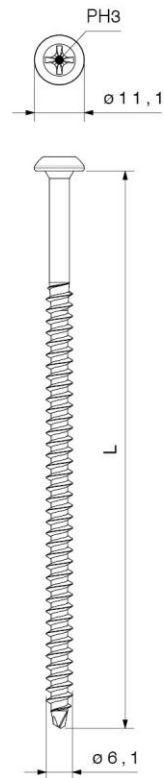
**DT-6,3**



**FB-S-T25-7,5**



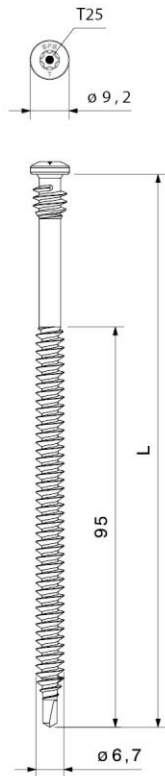
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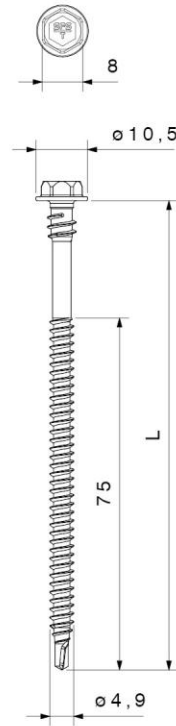
SFS Group flat roof fasteners

# Fasteners

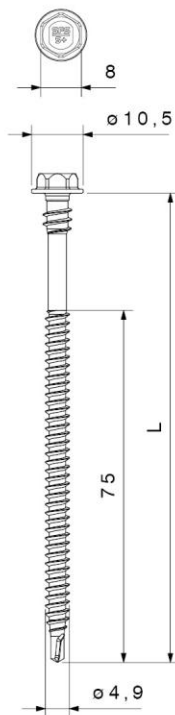
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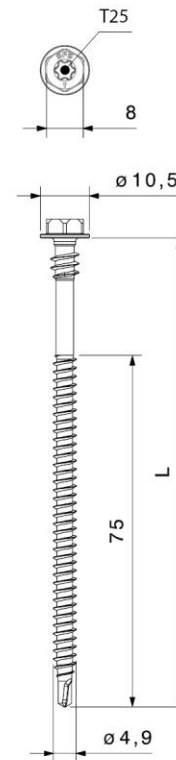
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## IR2-S-4,8



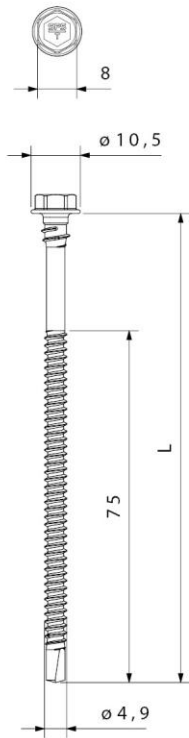
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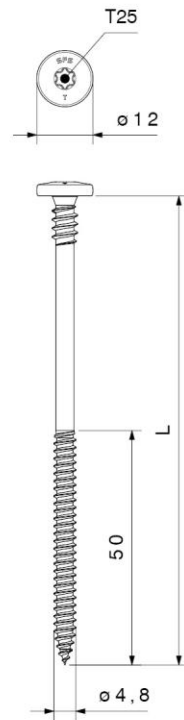
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# Fasteners

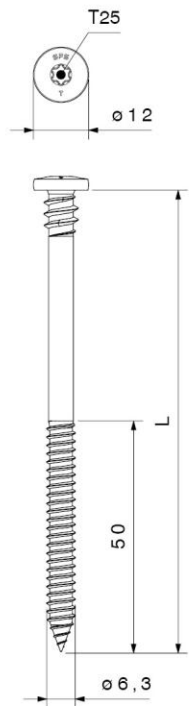
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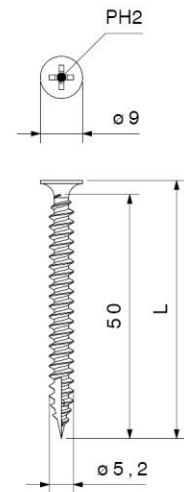
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## IRFP-6,3



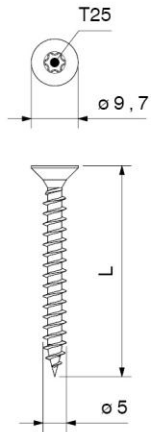
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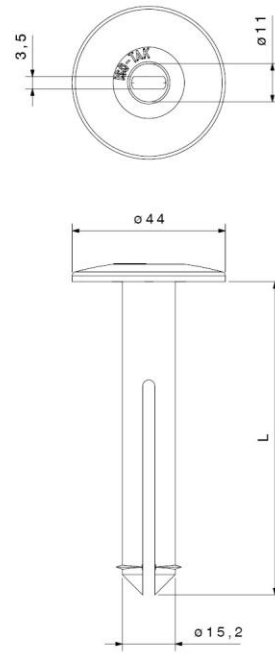
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# Fasteners

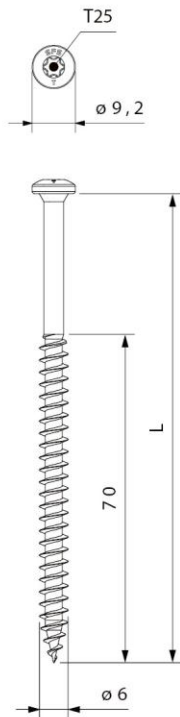
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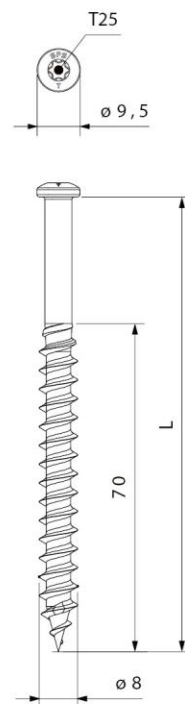
## LB-45



## LBS-6,0



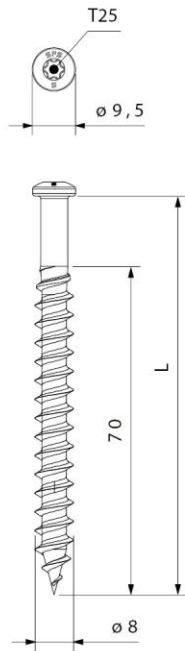
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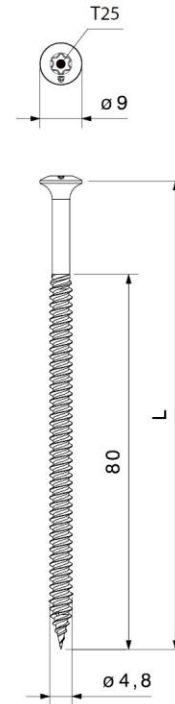
SFS Group flat roof fasteners

# Fasteners

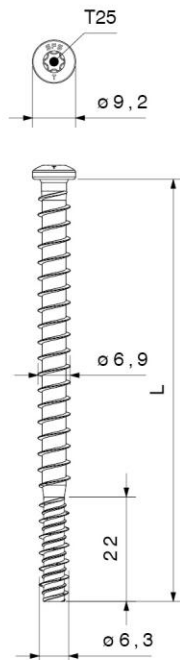
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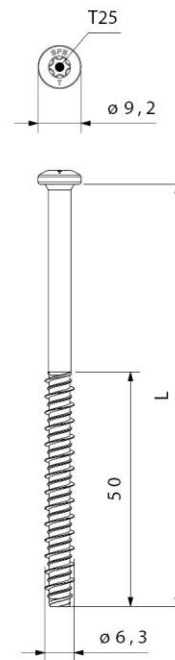
## PS-4,8



## TIA-T25-6,3



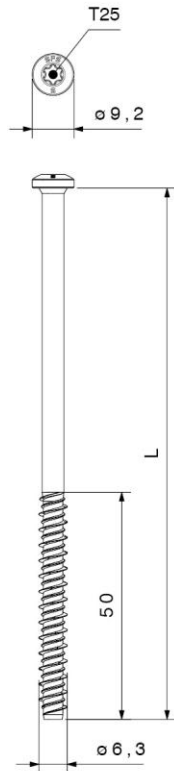
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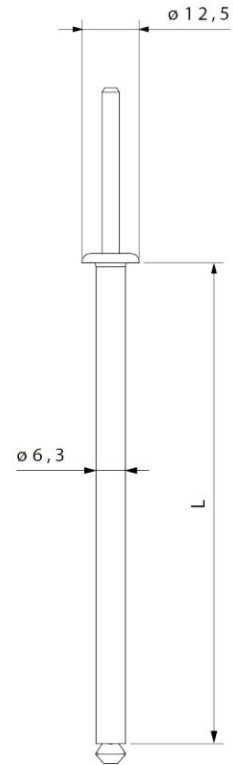
SFS Group flat roof fasteners

# Fasteners

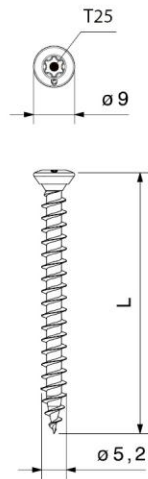
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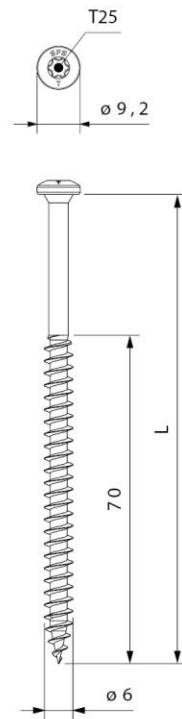
## TPR-6,3



## TS-5,2



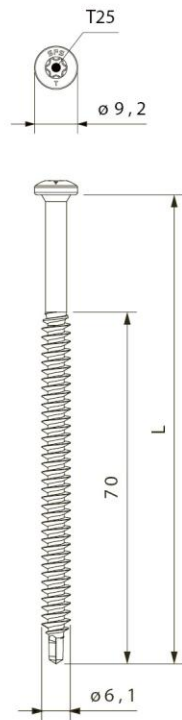
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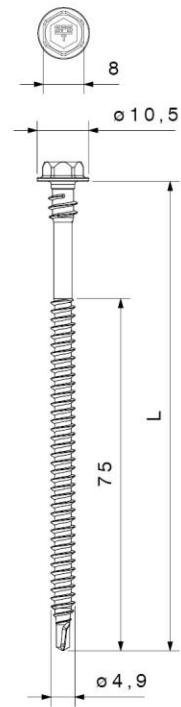
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## Fasteners

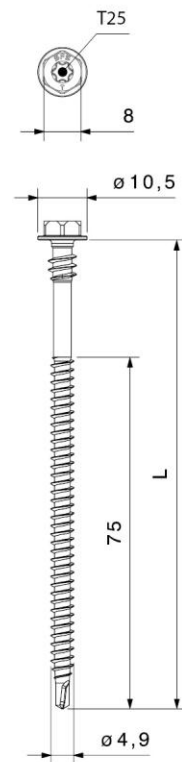
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### Sarnafast SF-4,8



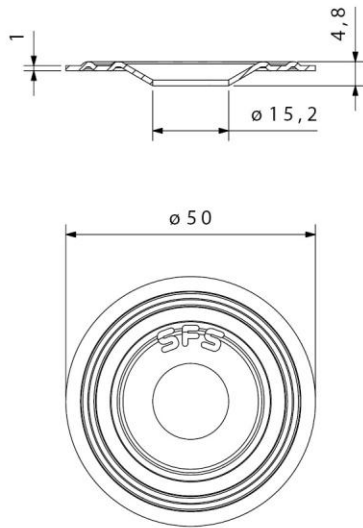
### Sarnafast SF-T25-4,8



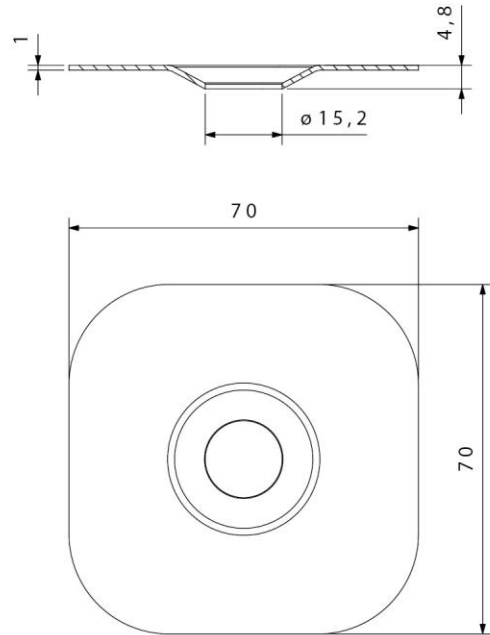
SFS Group flat roof fasteners

## Stress plates

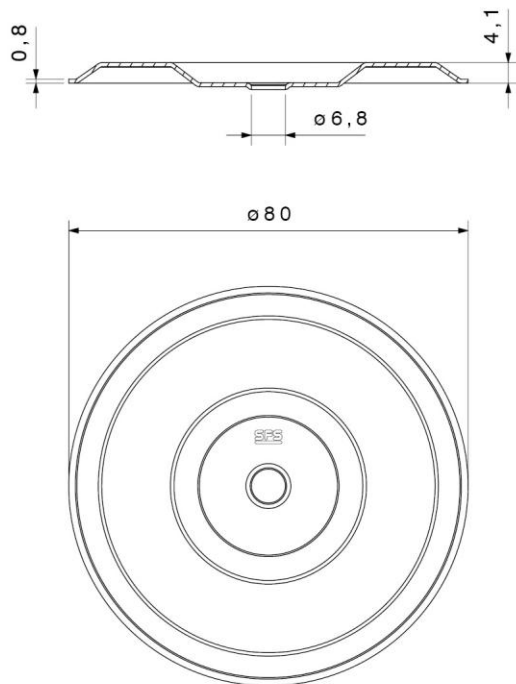
### BSA-P-50



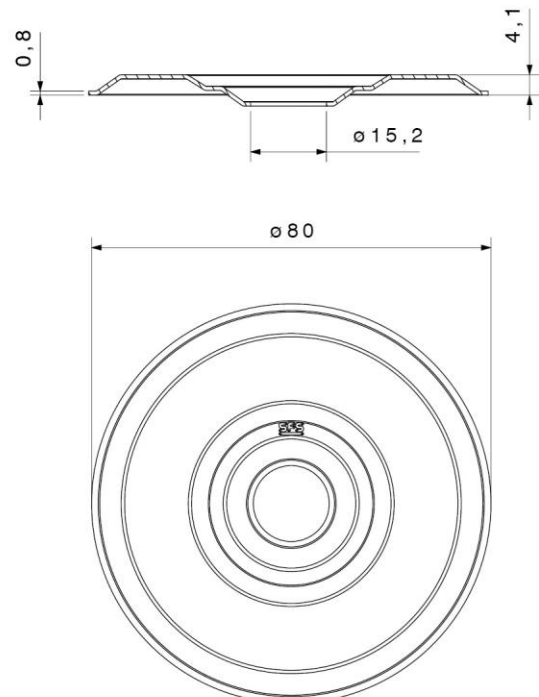
### BSA-P-70x70



### FI-P-6,8



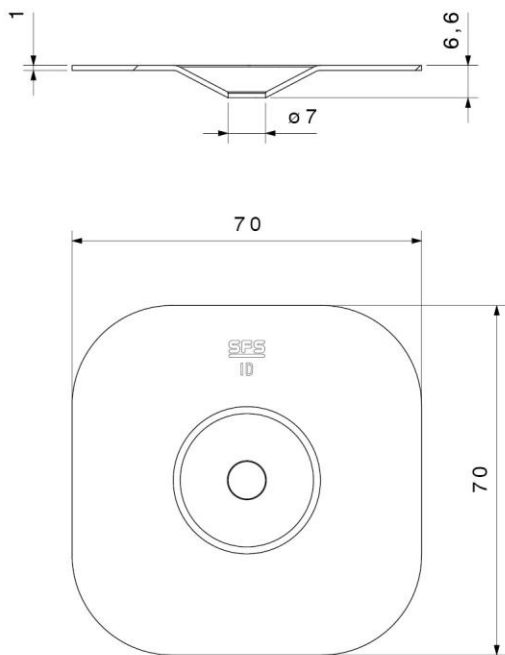
### FI-P-16,0



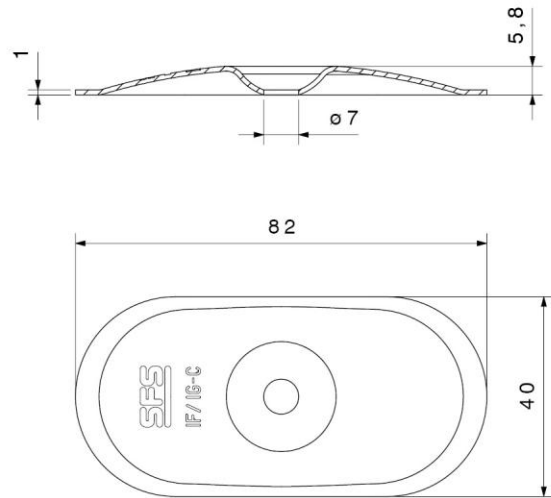
SFS Group flat roof fasteners

# Stress plates

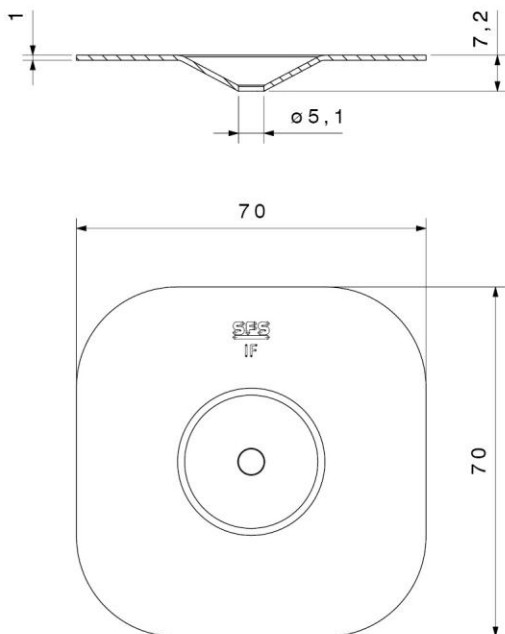
**ID-70x70**



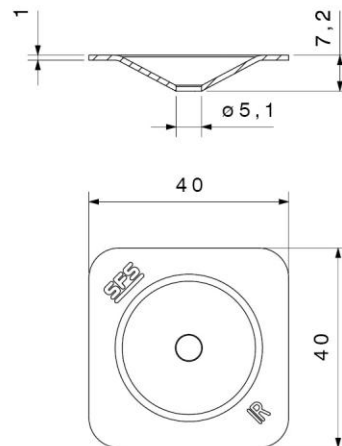
**IF/IG-C-82x40**



**IF-70x70**



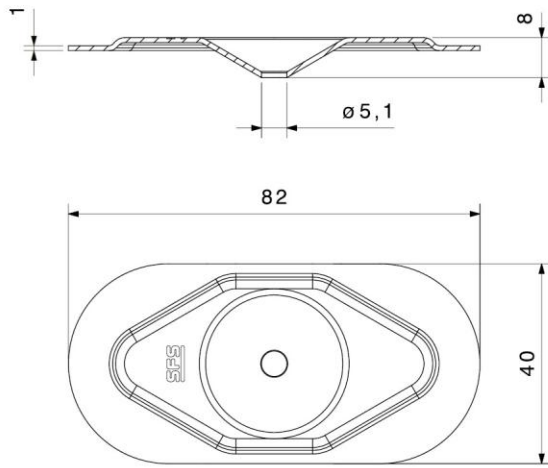
**IR-40x40**



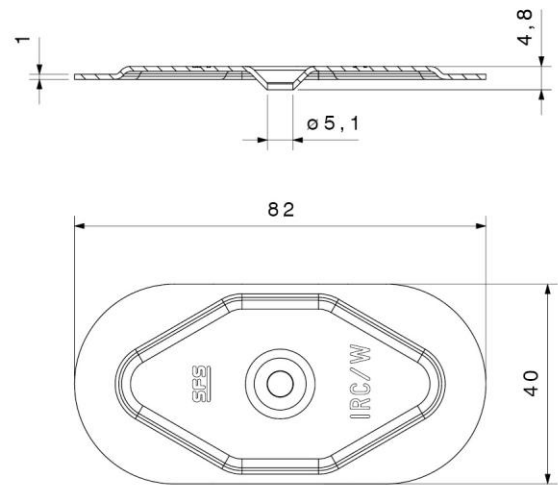
SFS Group flat roof fasteners

# Stress plates

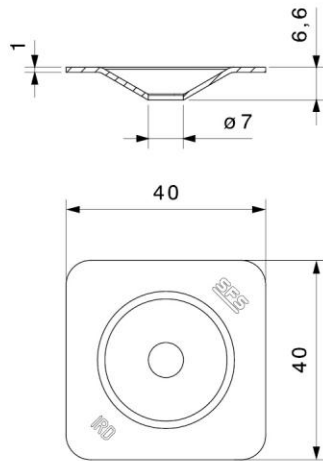
**IR-82x40**



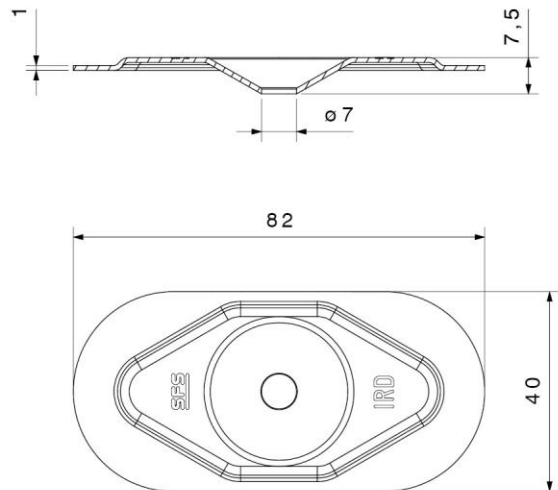
**IRC/W-82x40**



**IRD-40x40**



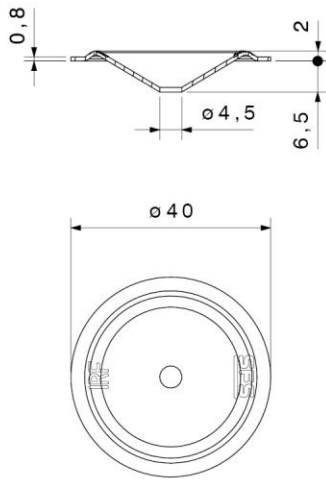
**IRD-82x40**



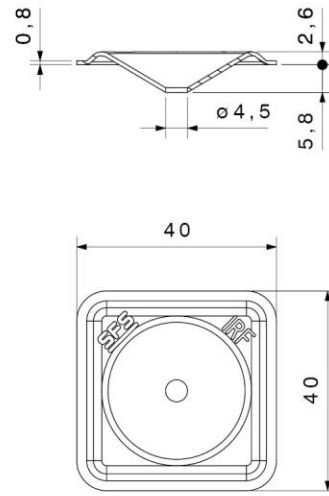
SFS Group flat roof fasteners

# Stress plates

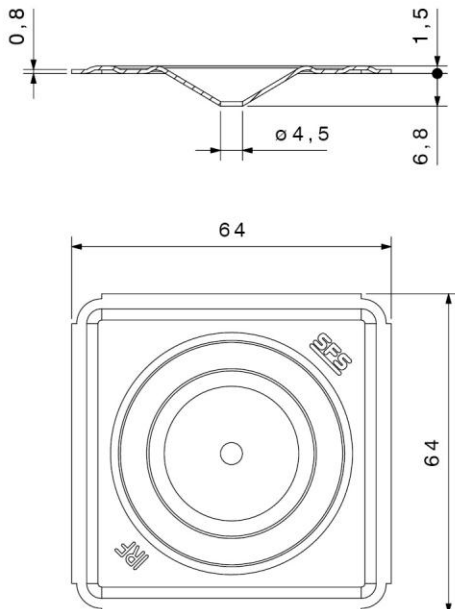
**IRF-40**



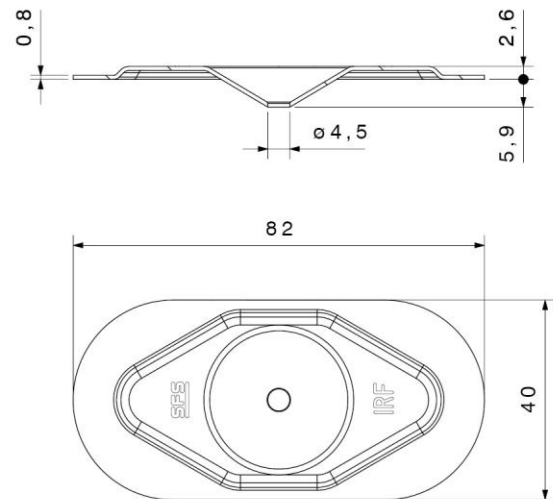
**IRF-40x40**



**IRF-64x64**



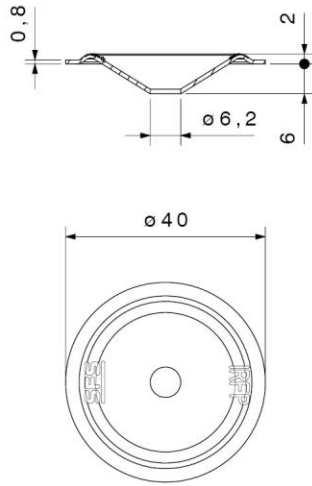
**IRF-82x40**



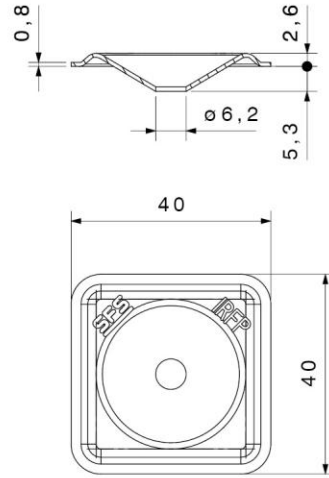
SFS Group flat roof fasteners

# Stress plates

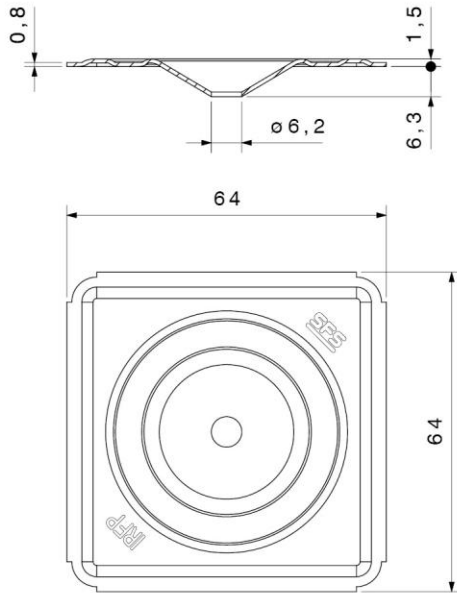
**IRFP-40**



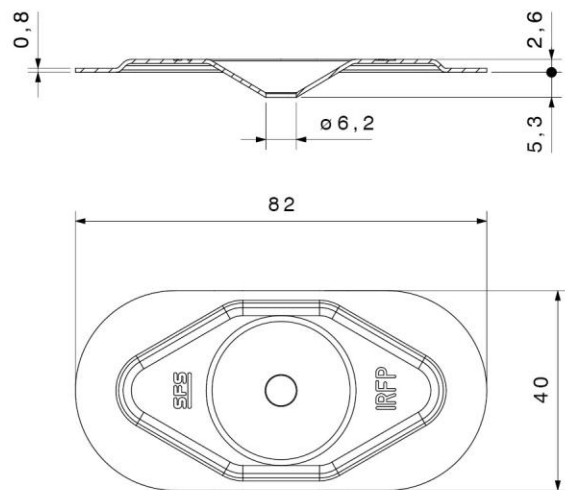
**IRFP-40x40**



**IRFP-64x64**



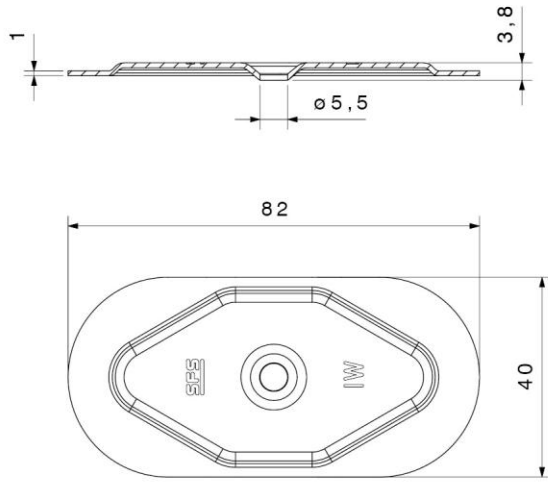
**IRFP-82x40**



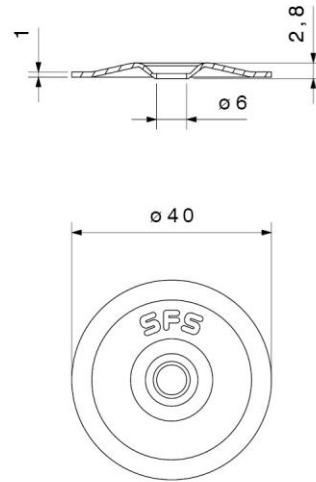
SFS Group flat roof fasteners

# Stress plates

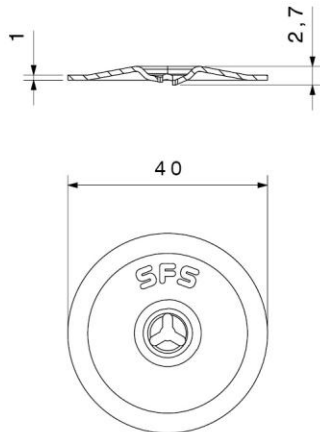
## IW-82x40



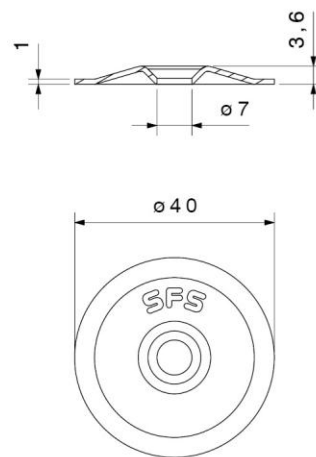
## MW-40-F



## MW-40-FH



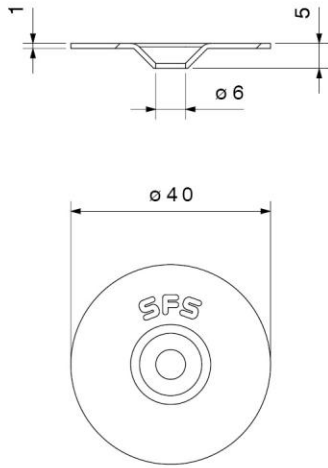
## MW-40-LBS



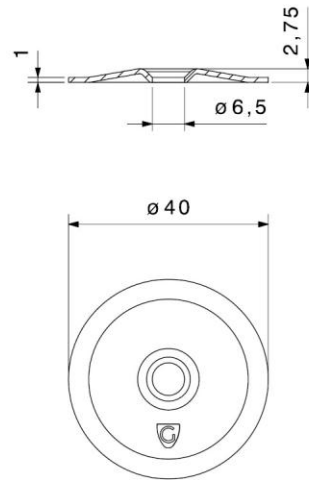
SFS Group flat roof fasteners

## Stress plates

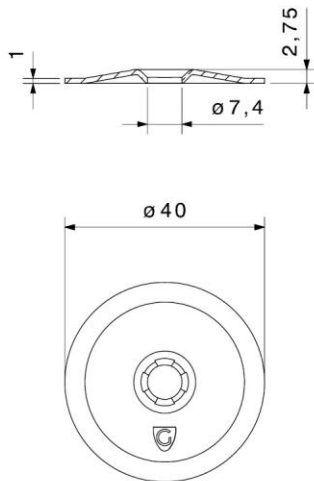
**MW-40-R**



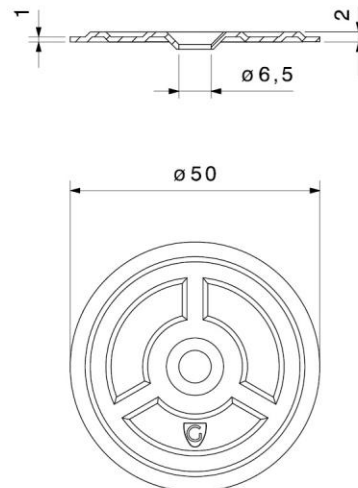
**SP-40-D,F,DD,FD**



**SP-40-LBS**



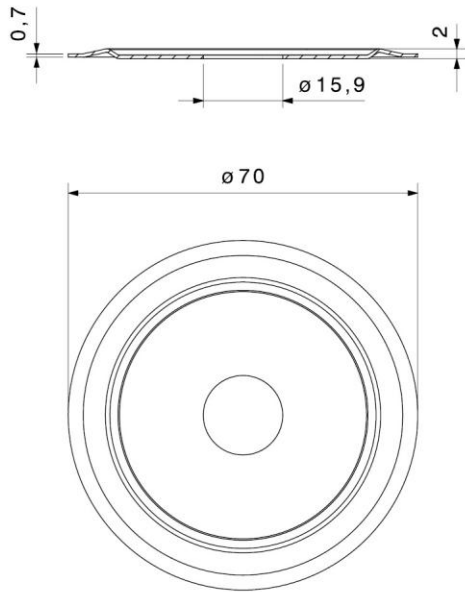
**SP-50-D,F,S**



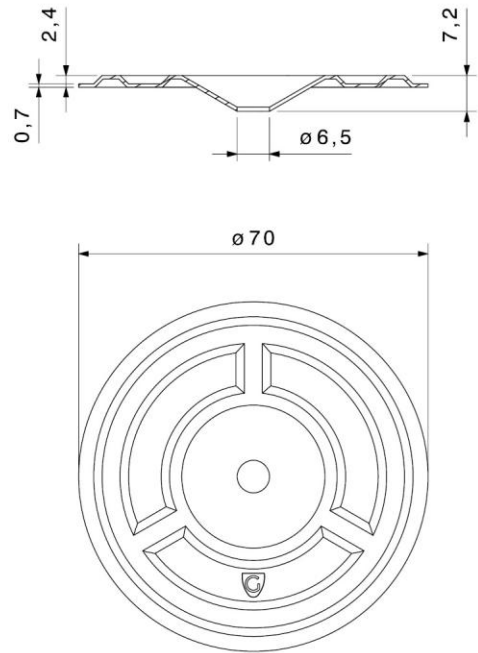
SFS Group flat roof fasteners

# Stress plates

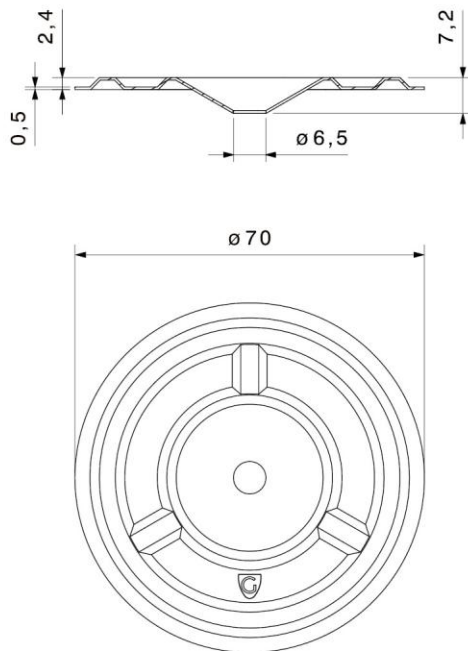
## SP-70-CPE



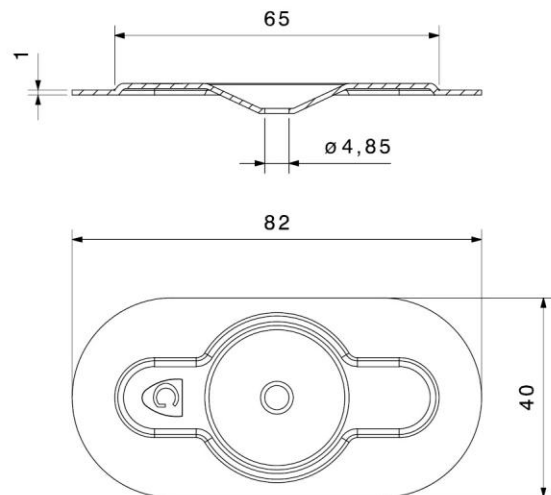
## SP-70-D,F,S



## SP-70-DX,SX



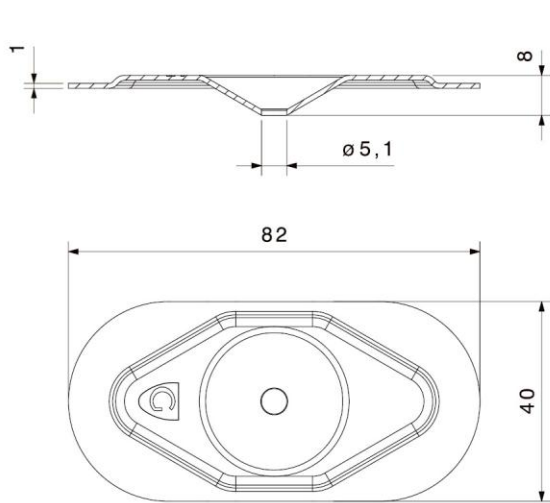
## SP-8240-D,F,S



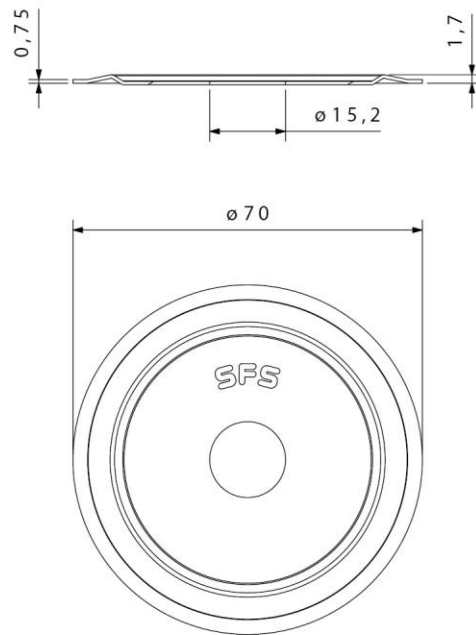
SFS Group flat roof fasteners

## Stress plates

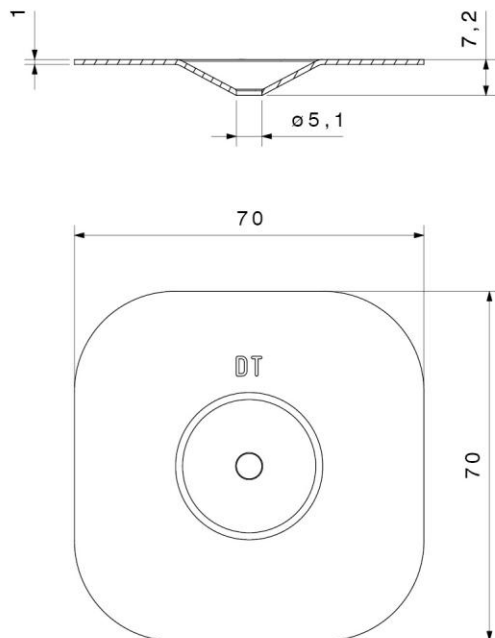
**SPA-8240-D1**



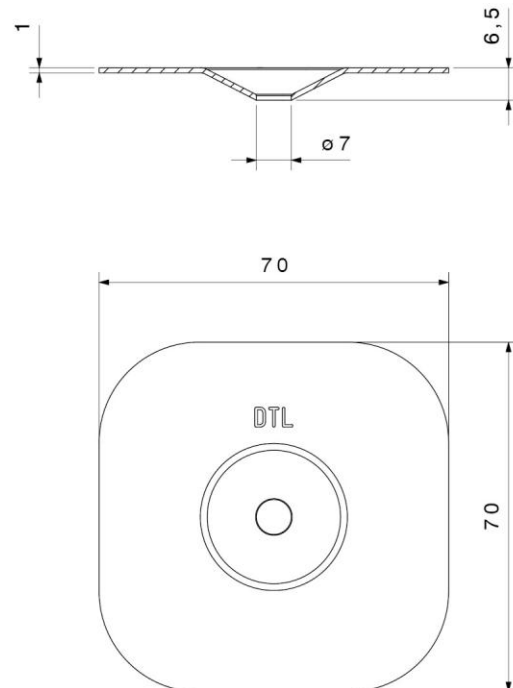
**TPA-P-70**



**Sarnafast DT-70x70**



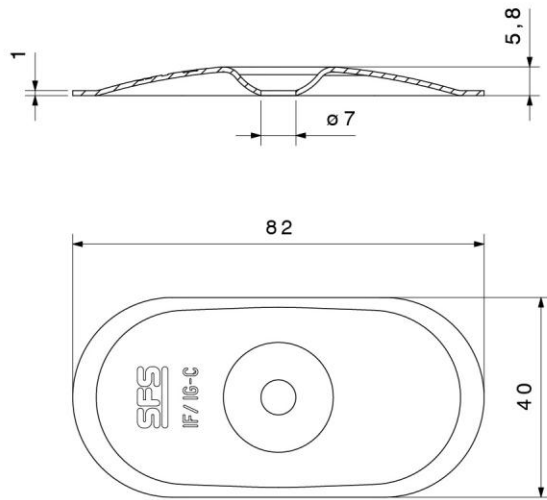
**Sarnafast DTL-70x70**



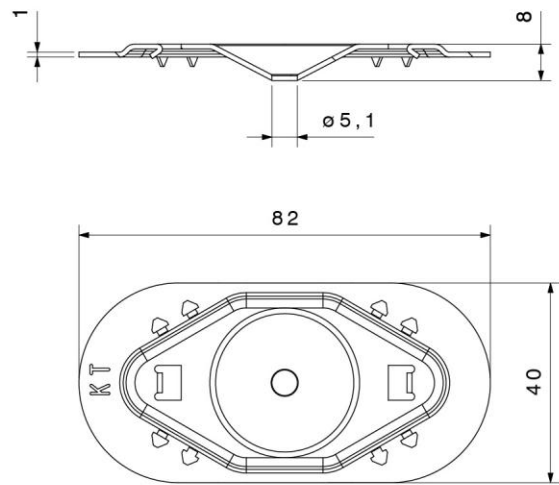
SFS Group flat roof fasteners

## Stress plates

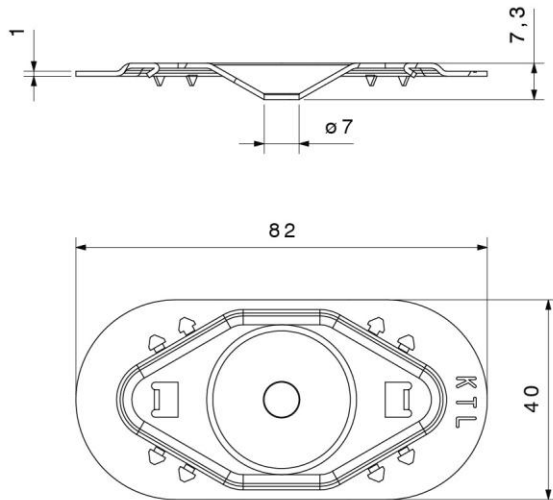
### Sarnafast IF/IG-C-82×40



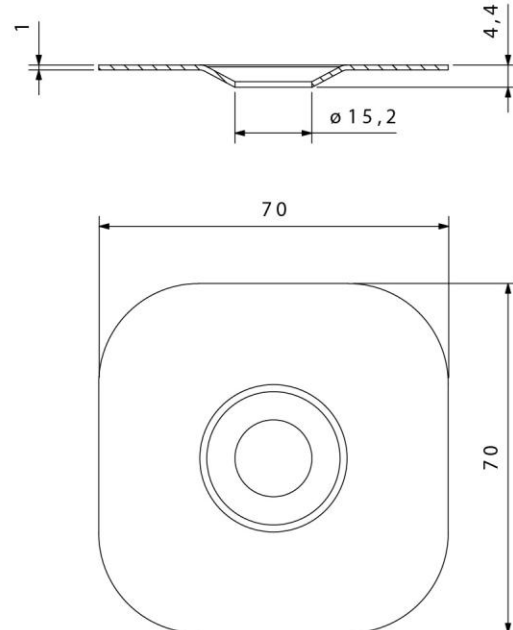
### Sarnafast KT-82×40



### Sarnafast KTL-82×40



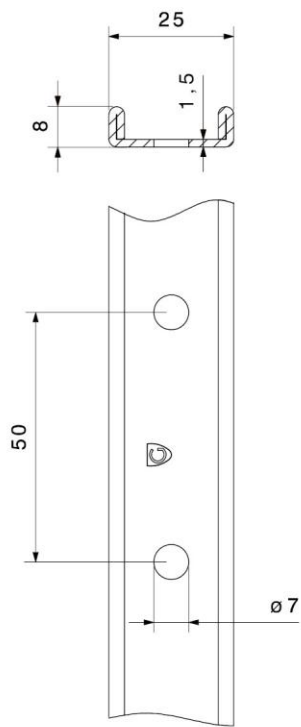
### SBIW-70×70



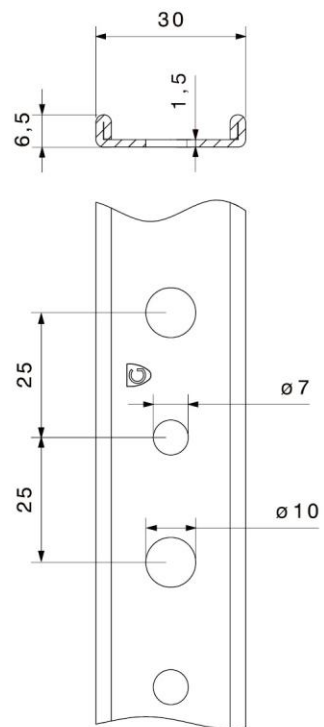
SFS Group flat roof fasteners

# Steel bars

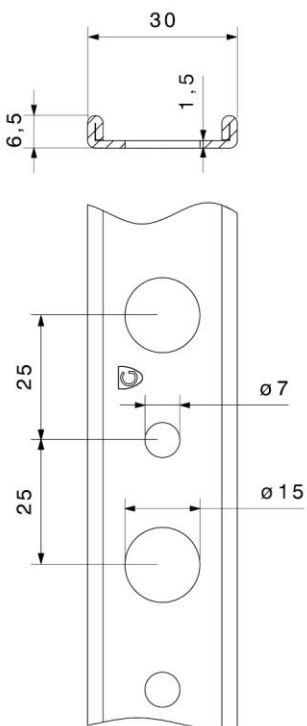
## STBS



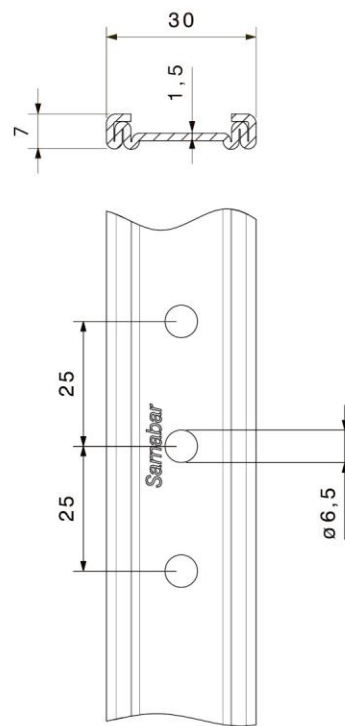
## STBST



## STBS7T15



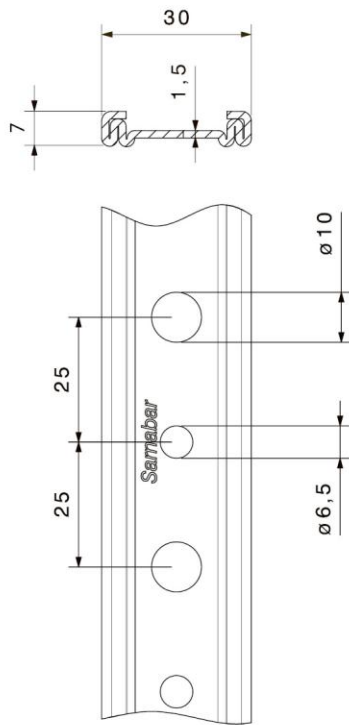
## Sarnabar 6



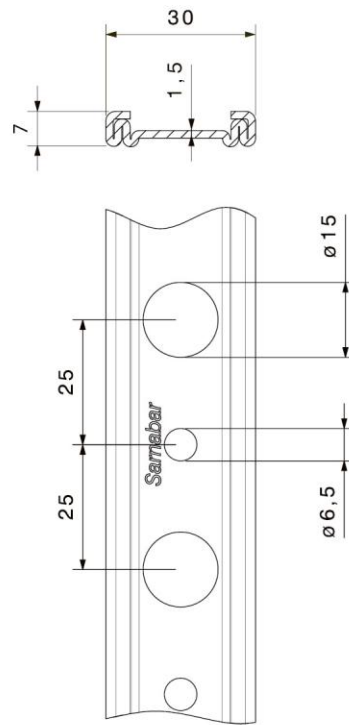
SFS Group flat roof fasteners

## Steel bars

### Sarnabar 6/10



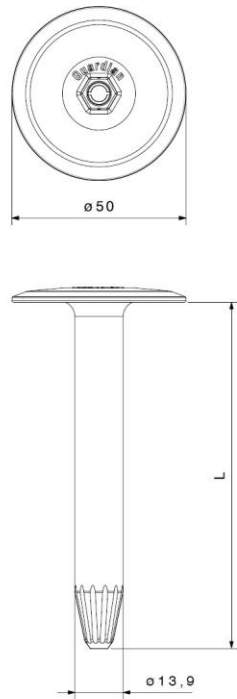
### Sarnabar 6/15



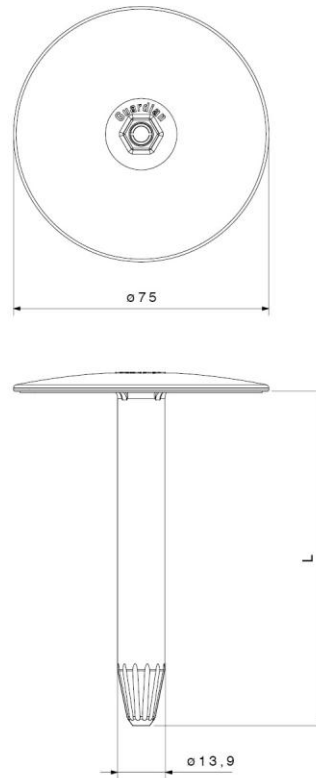
SFS Group flat roof fasteners

# Sleeves

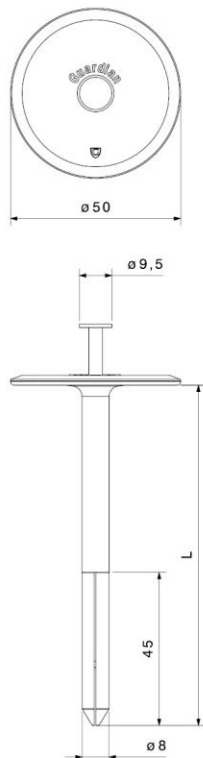
## ASTL50



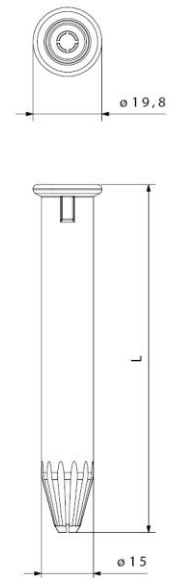
## ASTL75



## CP50



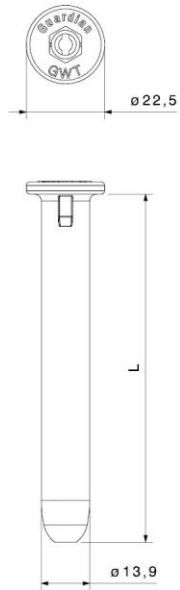
## FI-R-20n



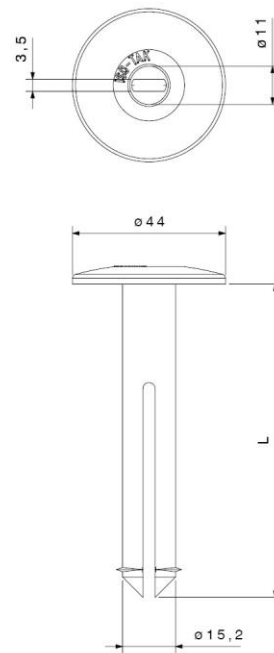
SFS Group flat roof fasteners

# Sleeves

## GWT



## LB-45



## RB48



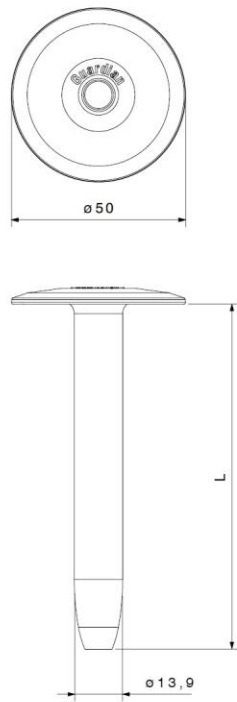
## R50



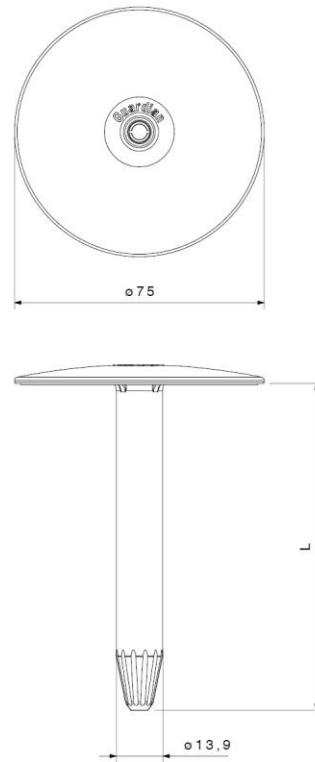
SFS Group flat roof fasteners

# Sleeves

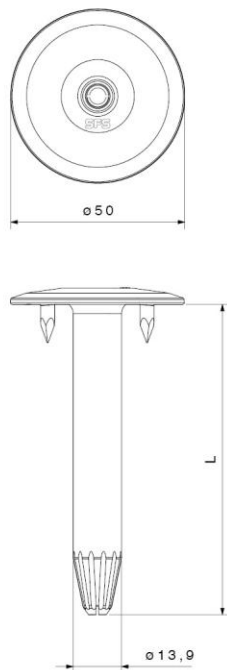
## R50-LN



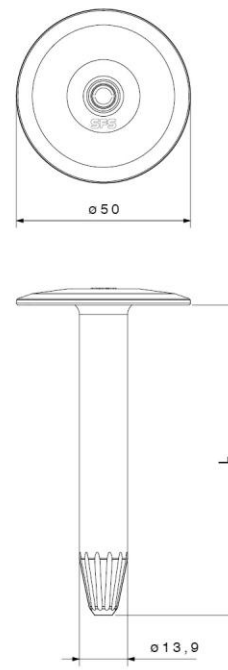
## R75



## RP48n



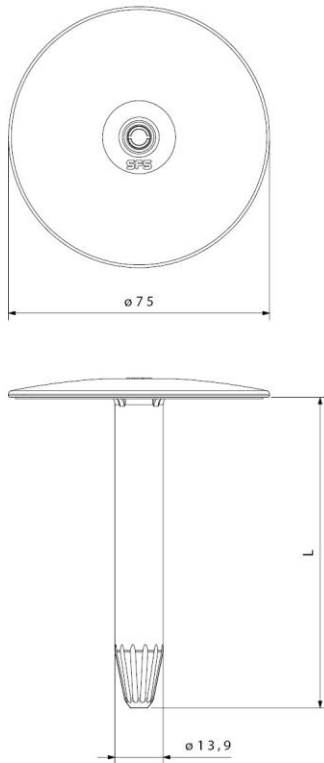
## RP50n



SFS Group flat roof fasteners

# Sleeves

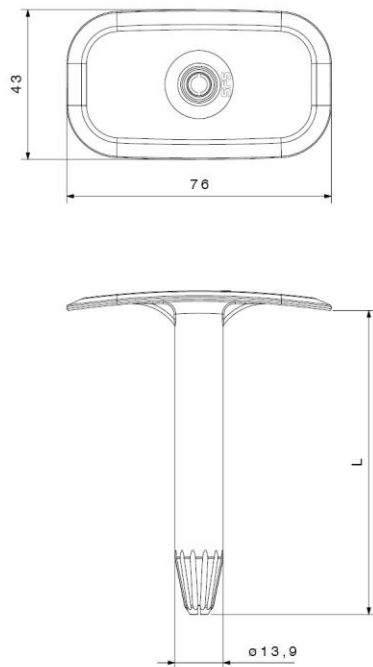
## RP75n



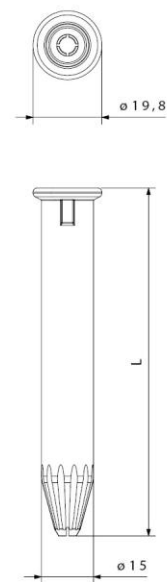
## TPA50n



## TSU



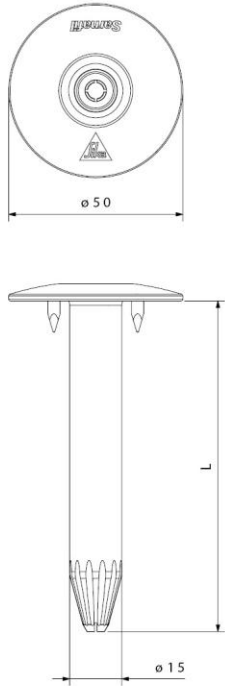
## Sarnabar Tube SBT-20



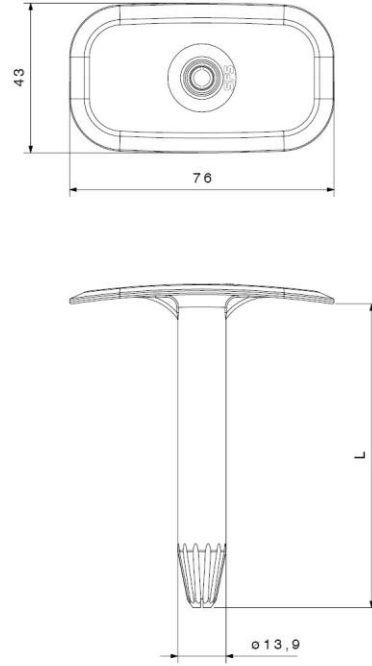
SFS Group flat roof fasteners

# Sleeves

## Sarnafast Tube SFT-50



## SUT



SFS Group flat roof fasteners

## Annex 2

**Table 1: Characteristic pull-out values of fasteners acc. EAD 030351-00-0402 Figure 3 for metallic substrates [kN]**

Fastener	Steel (EN 10346)																Aluminium (EN 755-2)		
	S320GD <sup>3)</sup>										S350GD		S420GD		Perforated S320GD <sup>4)</sup>		R <sub>m</sub> ≥ 195 N/mm <sup>2</sup>		
	t [mm]																		
	0,50	0,60	0,63	0,70	0,75	0,80	0,88	1,00	1,25	1,50	0,60	0,70	1,00	0,60	0,65	0,75	0,75	0,60	
ACS-N-6,1																			
BSA-N-4,8		0.97	1.06	1.27	1.42	1.53	1.71	1.98	2.80										
BS-4,8				1.35	1.53	1.63	1.79	2.03	2.03										
BS-S-4,8				1.31	1.48	1.58	1.74	1.98											
BS3-4,8										2.10									
BS-6,1		1.53	1.80	2.00	2.14	2.44	2.68	3.05	4.12										
BS-S-6,1	1.00	1.21	1.21	1.47	1.66	1.81	2.04	2.39											0.50
BS-6,7	1.47	1.47															0.87		0.54
BS-6,8	1.29	1.75	1.83	2.04	2.18														
CP50 <sup>1)</sup>																			
DBT-4,8				1.32	1.54	1.64	1.80	2.05	2.05										
DT-4,8																			
DT-S-4,8																			
DT-6,3																			
FB-S-T25-7,5																			
IF2-6,1			1.11					1.16											
IFP2-T25-6,7																	0.87		
IR2-4,8				1.32	1.54	1.64	1.80	2.05	2.05										
IR2-S-4,8				1.31	1.48	1.58	1.74	1.98											
IR2-T25-4,8		1.03	1.09	1.34	1.52	1.67	1.91	2.27	3.15		1.32	1.44	2.27	1.44	1.44	1.74			
IR3-4,8										2.10									
IRF-4,8					1.30	1.31	1.33	1.35											
IRFP-6,3																	0.91		
IWF-5,2																			
IW-S-5,0																			
LB-45 <sup>1)</sup>																			
LBS-6,0																			
LBS-8,0																			
LBS-S-8,0																			
PS-4,8				1.47	1.61	1.75	1.98												
TIA-T25-6,3																			
TI-T25-6,3																			
TI-S-T25-6,3																			
TPR-6,3 <sup>2)</sup>	0.99																		0.69
TS-5,2																			
TS-6,0																			
Sarnafast SBF-6,0		1.53	1.80	2.00	2.14	2.44	2.68	3.05	4.12										
Sarnafast SF-4,8				1.32	1.54	1.64	1.80	2.05	2.05										
Sarnafast SF-T25-4,8		1.03	1.09	1.34	1.52	1.67	1.91	2.27	3.15		1.32	1.44	2.27	1.44	1.44	1.74			

<sup>1)</sup>Plastic plug or nail (fastener) incl. sleeve

<sup>3)</sup>For steel S280GD reduction of values to 92%

<sup>2)</sup>Pre-drill Ø 7,0 mm

<sup>4)</sup>Perforated steel sheet, triangular array of holes, hole diameter 5,0 mm, distance of holes 12,5 mm

**Table 2: Characteristic pull-out values of fasteners acc. EAD 030351-00-0402 Figure 3 for non-metallic substrates [kN]**

Fastener	Timber				Concrete (EN 206-1)				Aerated concrete (EN 12602)				Pumice Panel (EN 1520)			
	OSB/3 <sup>3)</sup> 18 mm	C24 <sup>4)</sup> 22 mm	Plywood <sup>5)</sup> 18 mm	SD min <sup>6)</sup> [mm]	C12/15	C20/25	C25/30	SD min <sup>6)</sup> [mm]	Pre-drill Ø [mm]	Density 450 kg/m <sup>3</sup>	Density 550 kg/m <sup>3</sup>	Density 600 kg/m <sup>3</sup>	SD min <sup>6)</sup> [mm]	LAC 6, D 1,0	SD min <sup>6)</sup> [mm]	Pre-drill Ø [mm]
ACS-N-6,1						3.59		25	5.00							
BSA-N-4,8																
BS-4,8	1.24	2.09	1.70	30												
BS-S-4,8	1.26	2.04	1.87	30												
BS3-4,8																
BS-6,1	1.22	2.24	2.14	30		2.17		32	5.00							
BS-S-6,1	1.25	2.02	2.22	30						0.82	1.37		75			
BS-6,7																
BS-6,8																
CP50 <sup>1)</sup>							1.57	30	8.00							
DBT-4,8	1.32	2.00	1.76	30												
DT-4,8					2.40		3.34	25	4.80							
DT-S-4,8					2.65		3.69	25	4.80							
DT-6,3					2.93		4.07	32	6.30							
FB-S-T25-7,5														0.59	50	4.80
IF2-6,1	1.07	2.04	2.40	30	1.56		3.12	32	5.00	1.27	2.11		75			
IFP2-T25-6,7																
IR2-4,8	1.32	2.00	1.76	30												
IR2-S-4,8	1.26	2.04	1.87	30												
IR2-T25-4,8	1.45	1.32	2.18	30												
IR3-4,8																
IRF-4,8																
IRFP-6,3																
IWF-5,2	1.35	1.94	2.20	25												
IW-S-5,0	1.08	1.12	2.04	25												
LB-45 <sup>1)2)</sup>										1.44	1.44		65			
LBS-6,0	1.40	2.00	2.30	25		2.92	3.26	40	5.00	- / 1.07	- / 1.78	2.07 / -	60 / 75			
LBS-8,0										1.40	1.62	2.65	60			
LBS-S-8,0										1.44	1.67	1.87	60			
PS-4,8	1.35	1.83	1.86	25												
TIA-T25-6,3					1.83		1.83	20	5.00							
TI-T25-6,3					1.83 / 2.73		1.83 / 3.79	20 / 30	5.00							
TI-S-T25-6,3					0.53		1.05	20	5.00							
TPR-6,3																
TS-5,2	1.35	1.90	1.89	25												
TS-6,0	1.40	2.00	2.30	25		2.92	3.26	40	5.00	- / 1.07	- / 1.78	2.07 / -	60 / 75			
Sarnafast SBF-6,0	1.22	2.24	2.14	30		2.17		32	5.00							
Sarnafast SF-4,8	1.32	2.00	1.76	30												
Sarnafast SF-T25-4,8	1.45	1.32	2.18	30												

<sup>1)</sup>Plastic plug or nail (fastener) incl. sleeve

<sup>3)</sup>OSB/3 (EN 300), minimum density 550 kg/m<sup>3</sup>

<sup>5)</sup>Plywood (EN 636), minimum density 400 kg/m<sup>3</sup>

<sup>2)</sup>Pre-drill Ø 15.0 mm

<sup>4)</sup>C24/Structural timber (EN 338), minimum density 350 kg/m<sup>3</sup>

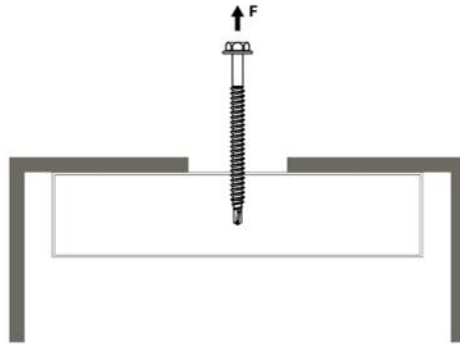
<sup>6)</sup>Setting depth minimum



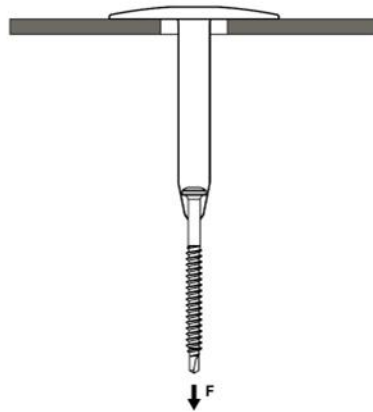




**Figure 3 of EAD 030351-00-0402**  
Principle of fastener pull-out test



**Figure 4 of EAD 030351-00-0402**  
Principle of plastic washer pull-through test



**Figure 5 of EAD 030351-00-0402**  
Principle of metallic washer pull-through test

