

SureFast® SF-RS-6.1 Fasteners

Carbon steel concrete fasteners for flat roofing

Application

- For mechanically fixing single-ply and flat roofing systems to concrete and timber decks in combination with appropriate SureFast® components.
- For mechanically fixing flat roofing accessories and trims to concrete, and timber materials

Key Features

- Excellent pull-out performance and resistance to unwinding
- Compatible with the SureFast® range of tube washers and pressure plates
- Specially designed thread formation for use with concrete and timber substrates
- ETA Approval and CE Marked
- Purpose designed and precision manufactured by Fixfast



01 FASTENER SYSTEMS
SureFast® Fasteners

Datasheet

Document Reference: FFP SFRS6.1 002

SF-RS-6.1 Fasteners

Specification

Material	Steel SAE1022 case hardened
Coating	Multiple layer organic
Head Type	Oval, TX25 recess
Drilling Capacity	Up to 0.7mm S275 steel

Build-ups are shown without tube or plate. Figures should be reduced or increased by the differential in substrate thickness for other substrates and the penetration differences accounted for. Further calculations will be necessary when used with SureFast® tube washers or SureFast® pressure plates: approximately 25mm of fastener sits within a SureFast® tube, and build-ups are reduced by 3–4mm when used with flat plates.

Consult the Fixfast SureFast® selector chart for full details, or for assistance selecting the correct fastener please contact Fixfast.

Installation and handling

Installation tool	Variable speed electric screwdriver
Installation drive	Fixfast TX25 drive bar range
Installation speed	1500rpm
Correct installation	Fasteners should be driven within three degrees of perpendicular to the surface of the fastened material. Avoid over-driving, and do not over-tighten.
Handling	Fasteners may have sharp edges, and the use of power tools can be dangerous. Use personal protective equipment. Do not allow uninstalled fasteners to become wet or store in damp conditions. Inspect each fastener before use and do not use damaged fasteners. Replace any fasteners which appear to have been installed incorrectly.

Installation details

Substrates	Dimension limits	Minimum penetration
Cast in-situ concrete	100mm minimum thickness 100mm minimum edge distance	25mm embedment
Pre-formed concrete components	40mm minimum thickness 70mm minimum edge distance	25mm embedment
Plywood	18mm minimum thickness	12mm through underside
Softwood	50mm minimum thickness	35mm embedment

Installation Recommendations

Recommended pilot hole for concrete usually 5.0mm diameter.
Pilot hole depth should be a minimum of 25mm greater than embedment depth to allow for sediment.
For timber and concrete deck applications a site pull-out test is recommended.

Dimensions			
Fastener	Nominal length	Nominal Diameter	Nominal Head Diameter
SF-RS-6.1 x 30	30mm	6.1mm	9.1mm
SF-RS-6.1 x 50	50mm		
SF-RS-6.1 x 75	75mm		
SF-RS-6.1 x 85	85mm		
SF-RS-6.1 x 100	100mm		
SF-RS-6.1 x 125	125mm		
SF-RS-6.1 x 150	150mm		
SF-RS-6.1 x 175	175mm		
SF-RS-6.1 x 200	200mm		
SF-RS-6.1 x 225	225mm		
SF-RS-6.1 x 250	250mm		
SF-RS-6.1 x 275	275mm		
SF-RS-6.1 x 300	300mm		
SF-RS-6.1 x 350	350mm		
SF-RS-6.1 x 400	400mm		
SF-RS-6.1 x 450	450mm		

Dimensions			
Fastener	Concrete	18mm plywood	Softwood
SF-RS-6.1 x 30	0-5mm	0	0
SF-RS-6.1 x 50	11-25mm	11-20mm	15mm
SF-RS-6.1 x 75	16-50mm	16-45mm	16-40mm
SF-RS-6.1 x 85	26-60mm	26-55mm	26-50mm
SF-RS-6.1 x 100	26-75mm	26-70mm	26-65mm
SF-RS-6.1 x 125	51-100mm	51-95mm	51-90mm
SF-RS-6.1 x 150	76-125mm	76-120mm	76-115mm
SF-RS-6.1 x 175	101-150mm	101-145mm	101-140mm
SF-RS-6.1 x 200	126-175mm	126-170mm	126-165mm
SF-RS-6.1 x 225	151-200mm	151-195mm	151-190mm
SF-RS-6.1 x 250	176-225mm	176-220mm	176-215mm
SF-RS-6.1 x 275	201-250mm	201-245mm	201-240mm
SF-RS-6.1 x 300	226-275mm	226-270mm	226-265mm

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Build-ups			
Fastener	Concrete	18mm plywood	Softwood
SF-RS-6.1 X 350	276-325mm	276-320mm	276-315mm
SF-RS-6.1 X 400	326-375mm	326-370mm	326-365mm
SF-RS-6.1 X 450	376-425mm	376-420mm	376-415mm

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Performance	
Pull-out values (axial load resistance)	
Substrate	Characteristic value
18mm plywood	2.07 kN
Concrete C25/30	1.98 kN
Concrete C25/40	2.24 kN
0.7mm steel	1.16 kN


Steel galvanised S280GD according to EN 10346, Plywood EN 636:2012+A1:2015, OSB BS EN 300 grade 3, Softwood C16. All values are tested and calculated according to Eurocode procedures.

Independently tested to ETAG006 Design values include safety factor γ_m : Steel < 0.7mm 2.0, Steel 0.7-1.2mm 1.7, Steel > 1.2mm 1.33, Timber 2.0, Accessories 1.33

Durability Class							
	Years / Environment						
	Interior	Semi-Interior	Rural	Urban	Industrial/Coastal	Marine	Swimming pools & Chemical plants
Corrosivity Category	C1	-	C2	C3	C4	C5	-
Multiple Layer Organic coated steel	25	20	12	n/a	n/a	n/a	n/a

Atmospheric environments are now commonly categorised by reference to an international standard, of which the UK version is BS EN ISO 9223:2012. A description of the typical conditions that each corrosion class represents is found in Annex C of the standard.

Environment Conditions are defined in Fixfast's Terms and Conditions of Warranty

Certification	
ETA	ETA_15-0406_Version_2017-01-13
	

Usage conditions

The fasteners are for use with the substrates and materials shown in this datasheet within the limits stated. The fixing area must be solid with no perforations and must be chemically inert and dry.

The fasteners must be stored with due care and must not be allowed to suffer any corrosion or damage prior to installation.

Fixing patterns must be established on the basis of load calculations to Eurocode standards. It is the designer's responsibility to take into account all loading criteria and apply appropriate safety factors in accordance with performance data issued by Fixfast. The design of the building and application where the fastener is to be used must be to the minimum standard of mechanical performance laid down from time to time in the appropriate Codes of Practice or Building Regulations.

Where the fastener is in contact with materials which are not an inherent part of the system being fixed, these materials must be approved by the system manufacturer or relevant body for use with the system and must be chemically inert and dry. Such materials and their effects on the fasteners' performance are not the responsibility of Fixfast.

Fixfast products must be used as a complete system with tools and accessories as recommended, according to Fixfast's recommended procedures and according to good practice as detailed by the appropriate body for the type of work. They must be used only with other Fixfast products where such other products are available. They must not be cut, altered or modified.

The stated performance of the fastener will only apply while there is no damage or degradation to the materials and components it is associated with in the application, including damage resulting from incorrect installation, and as long as there is no change to the fasteners' immediate environment.

Performance data is applicable to use with new materials as detailed in a new-build application. Refurbishment or extensions/additions/abutments may be considered new-build if all materials used in conjunction with the fasteners are themselves new and unaffected and uncontaminated by any previous installation. Performance data for fasteners used in refurbishments and in contact with previously used materials must be agreed by Fixfast for each specific project and Fixfast given the opportunity to establish values by testing.

The fasteners are suitable for use in buildings for residential and commercial use governed by any regulations in force concerning the well-being of the occupants, where the immediate fastener environment is safe for human presence without any protection. They are suitable for use in buildings for industrial use where the same conditions apply and the materials used or stored are chemically inert. Use within atmospheres containing chlorides and substances known to affect stainless steel, such as around swimming pools, is specifically excluded.

The fasteners are suitable for use in buildings with humidity class of Class 1, Class 2, Class 3 to BS 5250 provided the other environmental conditions also apply. They are suitable for use in buildings with an internal temperature range of -45°C to 50°C. These environmental conditions must remain unaffected throughout the installed life of the fastener, and any change will invalidate the performance data for the fastener.