

THE FENDER BCS GROUP OF COMPANIES

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SUPA-SET

DESCRIPTION

A styrenated polyester resin 300ml cartridge system, consisting of a two component collapsible laminate film capsule inside a single component injection moulded cartridge. This unique system allows a two component mortar to be applied using a standard sealant applicator gun. The laminate film prevents the resin and hardener components from coming into contact with the cartridge body, which means that the body can be either re-used or easily recycled.

Base Material

Without perforated sleeves

- Concrete
- Hard natural stone
- Solid rock
- Solid masonry

With perforated sleeves

- Hollow bricks
- Hollow blocks
- Voided stone or rock

Uses

- Anchor sockets
- Fixing externally threaded rods
- Concrete reinforcing bars
- Securing profiled sections and bars

Features

- Versatile
- Anchoring without expansion pressure
- Fixing close to free edges
- Medium / High load capacities
- Cost effective
- Uses a standard mastic gun

Methods of Use

Solid

- Drill the hole to the correct diameter and depth using a rotary percussive machine.
- Clean the hole using a stiff wire or nylon brush and clean compressed air or a blow pump.
- Unscrew the cap.
- Pull the red plug clear of the threaded nozzle.
- Cut the film to remove the red plug.
- Attach the mixer nozzle.
- Insert the SUPA-SET into the applicator gun. Dispense the first part of the SUPA-SET to waste until an even colour is achieved.
- Insert the mixer nozzle to the far end of the hole and half fill hole (depending upon application). Withdraw nozzle as the hole fills. For deep holes extension tubing can be used.
- Immediately insert the fixing. This should be done slowly with a slight twisting motion. Excess resin should be removed from the mouth of the hole before it sets.
- Leave the fixing undisturbed until loading time has elapsed.
- Attach the fixture and tighten the nut.

Hollow

- Drill the hole to the correct diameter and depth. This can be done with either a rotary percussive or rotary machine depending upon the substrate.
- Insert the correct perforated sleeve.
- Unscrew the cap.
- Pull the red plug clear of the threaded nozzle.
- Cut the film to remove the red plug.
- Attach the mixer nozzle.
- Insert the SUPA-SET into the applicator gun. Dispense the first part of the SUPA-SET to waste until an even colour is achieved.
- Insert mixer nozzle to the far end of the perforated sleeve and completely fill the sleeve with resin. Withdraw the mixer nozzle as the sleeve fills.
- Immediately insert the fixing. This should be done slowly with a slight twisting motion. Leave the fixing undisturbed until the loading time has elapsed, then attach the fixture and tighten the nut.

Technical Data Gel and Loading Times

Application Temperature (°C)	T gel range (minutes)	T gel typical (minutes)	T load (minutes)
30	3 - 5	3	20
25	4 - 7	4	30
20	5 - 10	6	40
10	10 - 20	12	80
5	15 - 30	18	120

Shelf Life

Cartridges should be stored in their original packaging in cool conditions (20°C-0°C) out of direct sunlight. When stored in this way the shelf life will be 12 months from the date of manufacture.

Health and Safety

The SUPA-SET Cartridge System contains styrene which is currently classified as a hazardous material, and it is flammable with a flash point of 32°C. Wear suitable protective clothing eye/face protection and gloves and ensure adequate ventilation. For further health and safety information, please refer to the relevant Safety Data Sheet.

Our expertise is fitting all the pieces together

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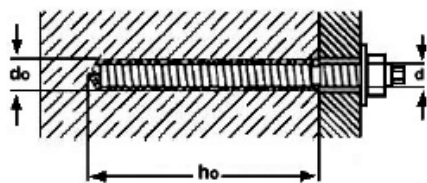
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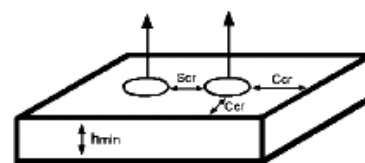
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Load capacity data for all thread studs

Stud diameter d (mm)	Hole diameter d _O (mm)	Hole depth h _O (mm)	Required close edge distance to achieve N _{rec} C _{Cr} (mm)	Required anchor spacing to achieve N _{rec} S _{Cr} (mm)	Min concrete member thickness h _{min} (mm)	Characteristic load in min 30N/mm ² concrete N _{RK} (kN)	Recommended load in min 30N/mm ² concrete N _{rec} (kN)
8	10	80	120	80	110	12.5	4.2
10	12	90	135	90	120	23.1	7.7
12	14	110	165	110	140	23.9	8
16	18	125	190	125	165	36.9	12.3
20	24	170	255	170	220	53.5	17.8
24	26	210	315	210	270	66	22



- d stud or bar nominal diameter (mm)
- d_O drilled hole diameter (mm)
- h_O hole depth (allthread) (mm)
- h_{ef} effective bond length (rebar) (mm)
- C close edge distance (mm)
- S anchor spacing (mm)
- C_{Cr} required close edge distance to achieve NRK
- S_{Cr} required anchor spacing to achieve NRK
- h_{min} minimum concrete member thickness (mm)
- f_{cm} concrete compressive strength (N/mm²)



- N_{RK} anchor characteristic load, tension (kN)
- V_{RK} anchor characteristic load, shear (kN)
- N_{rec} anchor recommended load (kN)
- R_{fcN} close edge reduction factor, tension only
- R_{fcV} close edge reduction factor, shear only
- R_{fs} close spacing reduction factor, tension and shear

Load capacity data for reinforcing bar anchors

Equations for tensile and shear load capacities

Tension $N_{RK} = (h_{ef} - 50) / 2.5$

Shear $V_{RK} = (0.5 (h_{ef} \cdot d_o \cdot f_{cm}) / 1000 (f_{cm} \leq 50)$

Recommended hole diameters (d_o)

Bar dia. d	6	8	10	12	16	20	25	32
Hole Dia. d _o	8	10	12	14	20	25	32	38

Concrete capacity reduction factors

Close edge, tension: $R_{fcN} = 0.4 + [0.4 C / h_{ef}]$ $0.5 \leq [C / h_{ef}] \leq 1.5$

Close edge, shear: $R_{fcV} = 0.25 + [0.5 C / h_{ef}]$ $0.5 \leq [C / h_{ef}] \leq 1.5$

Close spacing, tension or shear: $R_{fs} = 0.4 + [0.6 S / h_{ef}]$ $0.25 \leq [S / h_{ef}] \leq 1$

Notes on load capacity data

Quoted values for N_{RK} are corrected to f_{cm} = 30, according to the ETAG 'Metal Anchors for use in Concrete'.
 The equations for calculating the values of the (unfactored) characteristic loads N_{RK} and V_{RK} for reinforcing bar assume f_{cm} ≤ 30.
 All load capacity equations and values assume adequate steel strength; all thread stud tests were carried out on grade 8.8 steel.
 Hole diameters for reinforcing bar assume UK C.A.R.E.S. approved bar, grade 460; the use of bar with a high rib pattern could call for larger diameter holes, and tests may be required to determine the characteristic loads.

Important Note

Whilst all reasonable care is taken in compiling technical data on the Company's products, all recommendations or suggestions regarding the use of such products are made without guarantee, since the conditions of use are beyond the control of the Company.
 It is the customer's responsibility to satisfy himself that each product is fit for the purpose for which he intends to use it, that the actual conditions of use are suitable and that, in the light of our continual research and development programme the information relating to each product has not been superseded.