



Brunel Close, Park Farm
Wellingborough
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PLASTIC STEEL® 5-MINUTE PUTTY (SF)

PRODUCT DATA SHEET

A fast curing, steel-filled epoxy putty for dependable emergency repairs and quick maintenance work.

FEATURES

- Repairs, patches and rebuilds in areas where welding would be undesirable or impossible
- Mixes and applies easily, and cures in temperatures as low as 4° C
- Bonds to steel, iron, aluminium, brass, wood and concrete
- When cured it can be drilled, tapped, sanded, machined or painted
- Conventional metal-working tools can be used to machine cured epoxy
- Excellent resistance to oil, gasoline, water and many chemicals
- Returns equipment to service in less than one hour

RECOMMENDED APPLICATIONS

- Repairs cracks and breaks in equipment, machinery or castings
- Patches and rebuilds blow holes or pits in castings
- Rebuilds worn equipment
- Rebuilds pump and valve bodies
- Restores bearing journals and races

PRODUCT DATA

Typical Properties

| | |
|---|------------------------|
| Colour | Dark Grey |
| Mixed Consistency..... | Putty |
| Pot Life @ 21°C..... | 5 minutes |
| Adhesive tensile shear ASTM D1002..... | 14N/mm ² |
| Compressive strength ASTM D695..... | 72N/mm ² |
| Operating temperature..... | 93°C |
| Cured hardness shore D ASTM D2240..... | 86 |
| Specific Volume..... | 509cm ³ /kg |
| Coverage cm ² /kg @ 6.35mm..... | 840 |
| Dielectric strength Volt/mil ASTM D149..... | 35 |
| Mix ratio..... | Wt 1.7:1 |
| | Vol 1:1 |
| Flexural strength ASTM D790..... | 53N/mm ² |
| Cure shrinkage cm/cm ASTM D2566..... | 0.009 |

CHEMICAL RESISTANCE 7 days room temperature cure 30 days immersion @ 24°C

| | | | |
|-----------------------|----------------|----------------------|----------------|
| Kerosene | Very Good | Methanol | Unsatisfactory |
| Hydrochloric Acid 10% | Very Good | Toluene | Very Good |
| Chlorinated solvent | Unsatisfactory | Ammonia | Very Good |
| Sulphuric Acid 10% | Very Good | Sodium hydroxide 10% | Very Good |

Please consult ITW Devcon for other chemicals.



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Epoxies are very good in water, saturated salt solution, leaded gasoline, mineral spirits, ASTM #3 oil and propylene glycol. Epoxies are generally not recommended for long term exposure to concentrated acids and organic solvents.

APPLICATION INFORMATION

General Surface Preparation:

Proper surface preparation is essential to a successful application. The following procedures should be considered:

- All surfaces must be dry, clean and rough.
- If surface is oily or greasy, use Devcon Fast Cleaner 2000 Spray / Cleaner Blend 300 to degrease the surface.
- Remove all paint, rust and grime from the surface by abrasive blasting or other mechanical techniques.
- Aluminium repairs: Oxidation of aluminium surfaces will reduce the adhesion of an epoxy to a surface. This film must be removed before repairing the surface, by mechanical means such as grit-blasting or chemical means.
- Provide a "profile" on the metal surface by roughening the surface. This should be done ideally by grit blasting (8-40 mesh grit), or by grinding with a coarse wheel or abrasive disc pad. An abrasive disc may be used provided white metal is revealed. Do not 'feather edge' epoxy materials. Epoxy material must be 'locked in' by defined edges and a good 3 - 5 mil profile.
- Metal that has been handling sea water or other salt solutions should be grit blasted and high pressure water blasted and left overnight to allow any salts in the metal to 'sweat' to the surface. Repeat blasting may be required to 'sweat out' all the soluble salts. A test for chloride contamination should be performed prior to any epoxy application. The maximum soluble salts left on the substrate should be no more than 40 p.p.m. (parts per million).
- Chemical cleaning with Devcon Fast Cleaner 2000 Spray / Cleaner Blend 300 should follow all abrasive preparation. This will help to remove all traces of sandblasting, grit, oil, grease, dust or other foreign substances.
- Under cold working conditions, heating the repair area to 38°C - 43° C immediately before applying any of Devcon's Metal-filled Epoxies is recommended. This procedure dries off any moisture, contamination or solvents and assists the epoxy in achieving maximum adhesion to the substrate.
- Always try to make the repair as soon as possible after cleaning the substrate, to avoid oxidation or flash rusting. If this is not practical, a general application of FL-10 Primer will keep metal surfaces from flash rusting.

Mixing: Mix ratio - weight 1.7:1, by Volume 1:1

Plastic Steel Putty is formulated to be a dense mix that can be applied easily to overhead and vertical surfaces without running or sagging. Add the hardener to resin and mix thoroughly on a mixing board using a spatula. Do not mix in the containers. Remember you only have a 5 minute pot life so mix for 1 minute.

Application:

For best results, product should be kept and applied at room temperature.

Plastic Steel 5 Minute Putty can be applied when temperatures are between 13°C and 52°C. Spread the putty over prepared surface with a putty knife. Press firmly to ensure maximum surface contact and avoid trapping air. To bridge large gaps or holes use fibreglass, expanded metal or other mechanical fasteners.

Cure:

A 12.7mm thick section of Devcon Plastic Steel ® Putty (SF) will harden at 24°C in 1 hour. The material will be fully cured in 16 hours at which time the material can be machined, drilled or painted.



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The actual cure time of epoxy is determined by the size of the mass of epoxy and the temperature at time of repair.

SHELF LIFE

A shelf life of three years from date of manufacture can be expected when stored at room temperature (22°C) in their original containers.

PRECAUTION

For complete safety and handling information, please refer to the appropriate Material Safety Data Sheets prior to using this product.

ORDERING INFORMATION:

| <u>Stock No</u> | <u>Unit size</u> |
|-----------------|-----------------------------------|
| 10241 | Plastic Steel 5-Min Putty SF 500g |
| 15980 | Primer FL-10 112g |
| 19550 | Fast Cleaner 2000 Spray 500ml |
| 19510 | Cleaner Blend 300 250ml |

Warranty: Devcon will replace any material found to be defective. Because the storage, handling and application of this material is beyond our control we can accept no liability for the results obtained.

Disclaimer: All information on this data sheet is based on laboratory testing and is not intended for design purposes. ITW Devcon makes no representations or warranties of any kind concerning this data.

For technical assistance please call 01933 675299