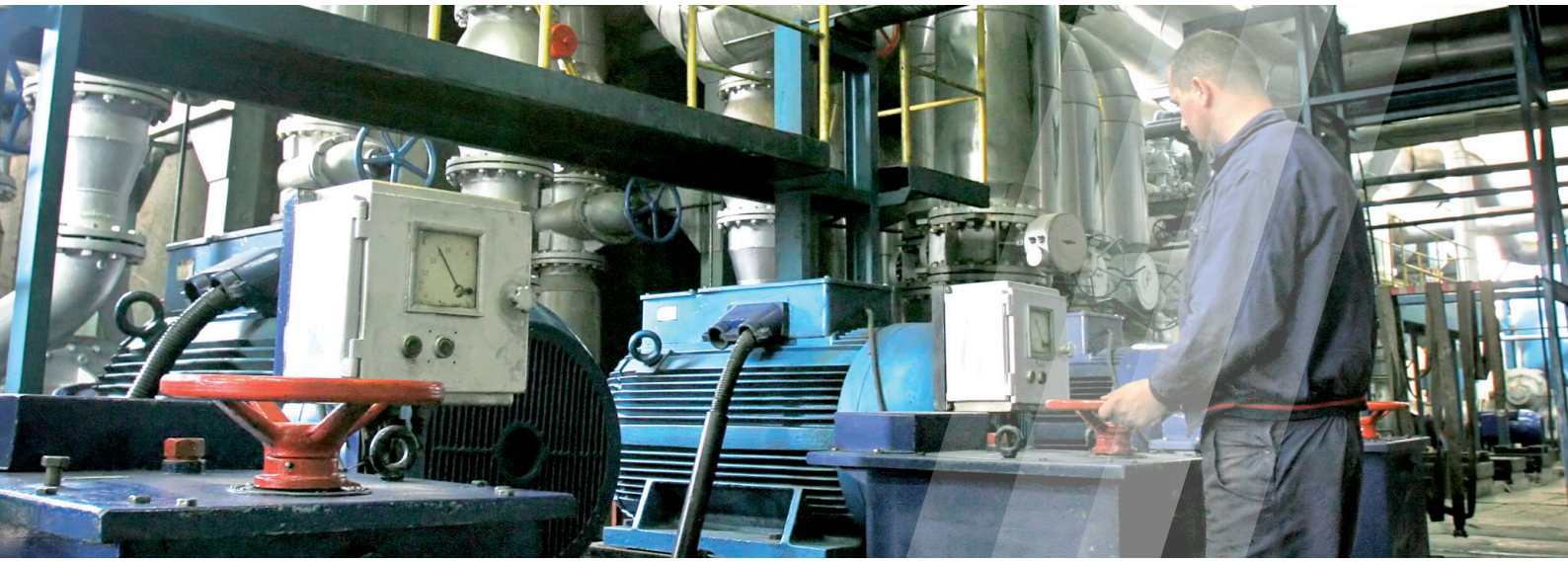

TECHNICAL DATASHEET – PLASTIC STEEL PUTTY (A)
THE ORIGINAL METAL FILLED EPOXY PUTTY

Revised: 05/2018

ORDERING INFORMATION

STOCK NO.: 10112
PACKAGE SIZE: 500g

STOCK NO.: 10115
PACKAGE SIZE: 1kg

STOCK NO.: 10117
PACKAGE SIZE: 10Kg

DESCRIPTION

The original metal filled epoxy putty for economical, dependable maintenance and repair work.

RECOMMENDED APPLICATIONS

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

PRODUCT DATA

TYPICAL PHYSICAL PROPERTIES

COLOUR	Grey
MIX RATIO BY VOLUME	2.5:1
MIX RATIO BY WEIGHT	9:1
% SOLIDS BY VOLUME	100
POT LIFE AT 25°C/ MINS	45
SPECIFIC VOLUME CC/KG	429
CURED SHRINKAGE CM/CM	0.0006
SPECIFIC GRAVITY	2.33
TEMPERATURE RESISTANCE	Dry 121°C
COVERAGE	858cm²/Kg @ 5mm
CURED HARDNESS / SHORE D	85 D
DIELECTRIC STRENGTH KV/MM	1.18
ADHESIVE TENSILE SHEAR / MPA	19
COMPRESSIVE STRENGTH MPA	57
COEFFICIENT OF THERMAL EXPANSION X10^{-6} CM/CM/°C	86.4
THICKNESS PER COAT / MM	As Required
FUNCTIONAL CURE TIME /HOURS	16
RECOAT TIME / MINUTES	4
MIXED VISCOSITY /CPS (WHERE APPLICABLE)	Putty

CHEMICAL RESISTANCE - 7 DAYS ROOM TEMPERATURE CURE (30 DAYS) - TESTING CARRIED OUT 30 DAYS IMMERSION AT 21°C

	POOR	FAIR	VERY GOOD	EXCELLENT
AMMONIA			•	
CUTTING OIL			•	
ISOPROPYL ALCOHOL	•			
GASOLINE (UNLEADED)			•	
HYDROCHLORIC ACID 37%			•	
METHYL ETHYL KETONE (MEK)	•			
METHYLENE CHLORIDE			•	
SODIUM HYPOCHLORITE 5% (BLEACH)			•	
SODIUM HYDROXIDE 50%			•	
SULPHURIC ACID 98%			•	
XYLENE		•		

Excellent = +/- 1% weight change, Very Good = +/- 1-10% weight change, Fair = +/- 10-20% weight change, Poor = > 20% weight change

APPLICATION INFORMATION

CURE
A 12.7mm thick section of Devcon Plastic Steel Putty will harden at 21ºC in 4 hours. The material will be fully cured in 16 hours at which time the material can be machined, drilled or painted. The actual cure time of epoxy is determined by the mass used and the room temperature at time of repair.

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 the substrate surface is oily or greasy use MEK or similar solvent to degrease the surface.
- Remove all paint, rust and grime from the surface by abrasive blasting or other mechanical techniques.
- Aluminum repairs: Oxidation of aluminum 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 75 - 125 microns 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. A bristle test or similar can be used to evaluate the salt level. The maximum soluble salts left on the substrate should be no more than 40 p.p.m. (parts per million).
- Chemical cleaning with MEK or similar solvent 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, optimum application can be achieved by heating the repair area to ~40º 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
Plastic Steel Putty (A) is formulated to be a dense mix that can be applied easily to overhead and vertical surfaces without running or sagging. For the 500g and 1Kg kits, empty the Resin and hardener onto a mixing board and mix using a spatula. Do not mix in the containers. For the 10Kg kit, add the hardener to the resin and mix using a T shaped mixer or Jiffy ES mixer attached to a power drill. Fold the material by vigorously moving the mixer up and down until a uniform mix has been achieved. Once mixed, immediately spread out the mass of material onto a suitable area before use to avoid a rapid exotherm and associated reduction in potlife.

APPLICATION
For best results, product should be kept and applied at room temperature. Plastic Steel Putty (A) can be applied when temperatures are between 13ºC and 52ºC. 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, sheet metal or wire mesh.

SHELF LIFE & STORAGE
A shelf life of 3 years from date of manufacture can be expected when stored at room temperature (22ºC) in their original containers

PRECAUTION
For complete safety and handling information, please refer to Material Safety Data Sheets (MSDS) prior to using this product.

ITW PERFORMANCE POLYMERS
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WARRANTY

ITW Performance Polymers will replace any material found to be defective. As 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 Performance Polymers makes no representations or warranties of any kind concerning this data.

For product information visit www.devconeurope.com
alternatively for technical assistance please call +353 61 771 500.

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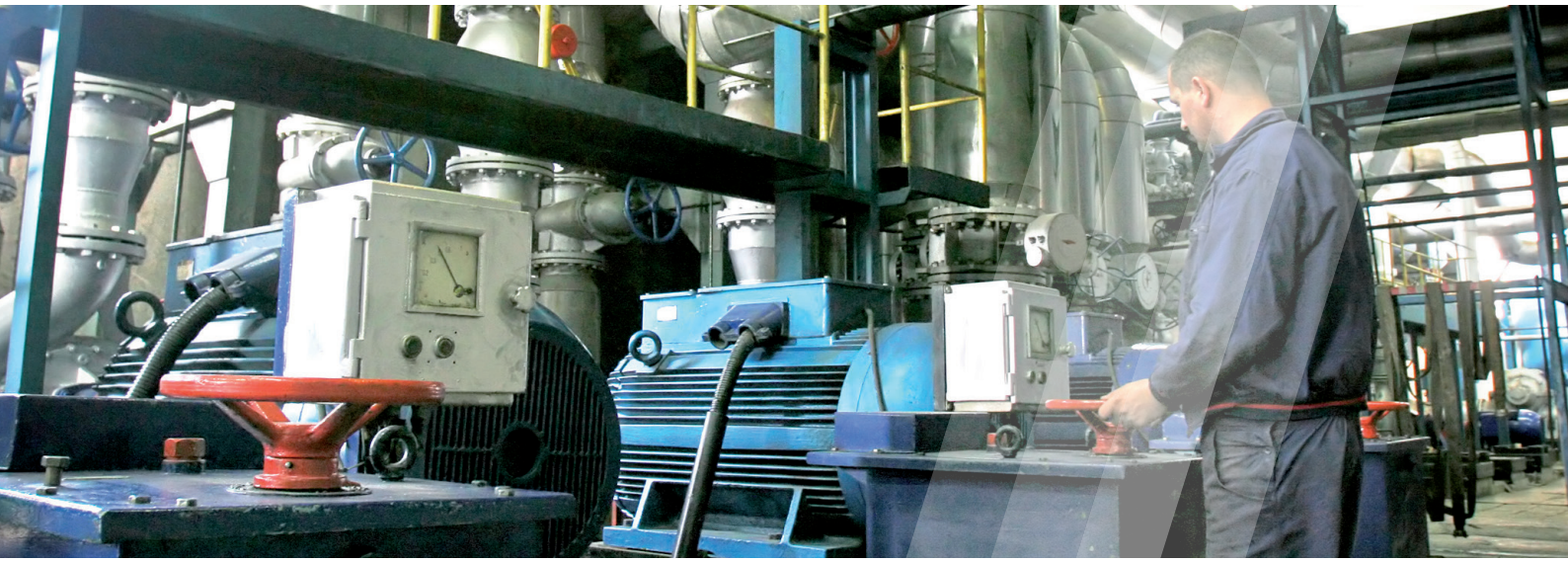

TECHNICAL DATASHEET – PLASTIC STEEL LIQUID (B)
A STEEL-FILLED LIQUID EPOXY

Revised: 05/2018

ORDERING INFORMATION

STOCK NO.: 10211
PACKAGE SIZE: 500g

STOCK NO.: 10215
PACKAGE SIZE: 1Kg

DESCRIPTION

A steel-filled liquid epoxy for fast-curing, durable, low cost moulds, dies and holding fixtures.

RECOMMENDED APPLICATIONS

- Ideal chocking, filling and levelling compound for machinery and equipment
- Creating holding fixtures for intricate parts
- Repairing hard to reach areas where a flowable epoxy is required
- Creating duplicating or tracing masters
- Use to create rigid moulds

PRODUCT DATA

TYPICAL PHYSICAL PROPERTIES

COLOUR	Dark Grey
MIX RATIO BY VOLUME	3:1
MIX RATIO BY WEIGHT	9:1
% SOLIDS BY VOLUME	100
POT LIFE AT 25°C/ MINS	45
SPECIFIC VOLUME CC/KG	473
CURED SHRINKAGE CM/CM	0.0006
SPECIFIC GRAVITY	2.11
TEMPERATURE RESISTANCE	Dry 121°C
COVERAGE	946cm²/Kg @ 5mm
CURED HARDNESS / SHORE D	85 D
DIELECTRIC STRENGTH KV/MM	1.17
ADHESIVE TENSILE SHEAR / MPA	19.3
COMPRESSIVE STRENGTH MPA	70
COEFFICIENT OF THERMAL EXPANSION X10⁻⁶ CM/CM/°C	68.4
THICKNESS PER COAT / MM	As Required
FUNCTIONAL CURE TIME /HOURS	16
RECOAT TIME / MINUTES	4
MIXED VISCOSITY /CPS (WHERE APPLICABLE)	15-25,000

TECHNICAL DATA SHEET – PLASTIC STEEL LIQUID (B)

CHEMICAL RESISTANCE - 7 DAYS ROOM TEMPERATURE CURE (30 DAYS) - TESTING CARRIED OUT 30 DAYS IMMERSION AT 21°C

	POOR	FAIR	VERY GOOD	EXCELLENT
AMMONIA			•	
CUTTING OIL			•	
ISOPROPYL ALCOHOL	•			
GASOLINE (UNLEADED)			•	
HYDROCHLORIC ACID 37%			•	
METHYL ETHYL KETONE (MEK)	•			
METHYLENE CHLORIDE			•	
SODIUM HYPOCHLORITE 5% (BLEACH)			•	
SODIUM HYDROXIDE 50%			•	
SULPHURIC ACID 98%			•	
XYLENE		•		

Excellent = +/- 1% weight change, Very Good = +/- 1-10% weight change, Fair = +/- 10-20% weight change, Poor = > 20% weight change

APPLICATION INFORMATION

CURE
A 12.7mm thick section of Devcon Epoxy will harden at 21ºC in 4 hours. The material will be fully cured in 16 hours. The actual cure time of epoxy is determined by the mass used and the temperature at the time of repair.

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 / Cleaner Blend 300 to degrease the surface.
- Remove all paint, rust and grime from the surface by abrasive blasting or other mechanical techniques.
- Aluminum repairs: Oxidation of aluminum 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 / 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 38ºC - 43º 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
Add the hardener to resin. Mix thoroughly with a spatula or similar tool until a uniform, streakfree consistency is obtained, in approx 4 minutes. Be sure to mix material from bottom and sides of container.

APPLICATION
MOULDMAKING
- First ensure good surface preparation and coat the entire “box” with Devcon’s Release Agent. Let it dry for 10 minutes. Apply a second coat, and let this dry for 10 minutes.
- Now take a small brush and apply a thin coat of mixed product over the surface. This helps to alleviate any “air bubbles” in the curing process.
- Then pour the liquid into the “box”. It is recommended to tilt the “box” slightly onto one side when pouring to let the air escape easily and produce no “blow holes” in the finished product.
- De-mould time is when the product has cured at room temperature.

Note: Preheating the mould to 43oC will ensure that the liquid will flow better and reduce air entrapment.

SHELF LIFE & STORAGE
A shelf life of 3 years from date of manufacture can be expected when stored at room temperature (22ºC) in their original containers

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

WARRANTY
ITW Performance Polymers will replace any material found to be defective. As storage, handling and application of this material is beyond our control we can accept no liability for the results obtained.

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