



# PLASTIC STEEL LIQUID B PRODUCT BULLETIN

## Product Description

A low viscosity compound with all the properties of Plastic Steel Putty, but in liquid form. Used for casting low-cost patterns and moulds, holding fixtures, tools and dies. Excellent compression strength and high load bearing capabilities make Plastic Steel Liquid ideal for chocking and leveling machinery and bridges, and repairing hard to reach areas.

## Features and benefits

- Low viscosity for easy pouring
- Can be cast over models for accurate detail reproduction
- Can be machined to close tolerances
- Low shrinkage

## Recommended Applications

- Holding fixtures for intricate parts
- Filling and leveling equipment
- Repairing hard to reach areas where a flowable epoxy is needed
- Duplicating or tracing masters
- Short run dies and moulds

Typical Physical Properties: Cured 7 days @ 24°C	
Colour	Dark Grey
Mixed Viscosity	20,000 cps
% Solids by Volume	100
Mixing Ratio (resin to hardener)	Weight 9:1 Volume 3:1
Cured Density ASTM D792	2.1 gm/cm <sup>3</sup>
Cure Shrinkage ASTM D2566	0.0006 cm/cm
Work Time of 500 gms @ 24°C	45 minutes
Compressive Strength ASTM D695	70.3 MPa
Adhesive Tensile Shear ASTM D1002	19.3 MPa
Cured Hardness Shore D ASTM D2240	85
Dielectric Strength ASTM D149	1180 volts/mm
Coverage	946cm <sup>2</sup> /kg @ 5mm
Temperature Resistance	Wet 50°C Dry 120°C

## Chemical Resistance: 7 days room temperature cure (30 days immersion @ 24°C)

Kerosene	VG	Methanol	U
10% Hydrochloric Acid	VG	Toluene	F
Chlorinated Solvent	F	Ammonia	VG
10% Sulphuric Acid	VG	10% Sodium Hydroxide	E

KEY: E = Excellent    VG = Very Good    F = Fair    U = Unsatisfactory

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.

## PLEASE CONSULT TECHNICAL SERVICE FOR OTHER CHEMICALS

NOTE: This bulletin was prepared in good faith from the best information available at the time of issue. However, users should confirm that the product is acceptable for their intended purposes.

## Surface Preparation

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

- First degrease the surface by using Cleaner Blend 300 (Part No 19515). All oil, grease and dirt must be removed before applying any epoxy material.
- All surfaces must be roughened, 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. A 75 - 125 micron profile is desired for an application. Do not "feather" epoxy material.
- Metal that has been handling sea water or other salt solutions should be grit blasted and high pressure water blasted, then left overnight to allow any salts in the metal to "sweat" to the surface. Repeat blasting to "sweat out" all the soluble salts. A test for chloride contamination should be performed prior to epoxy application. The maximum soluble salts left on the substrate should be no more than 40 p.p.m ( parts per million).
- All abrasive preparation should be followed by chemical cleaning with Cleaner Blend 300, or a similar solvent. 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 – 43°C immediately before applying Plastic Steel Liquid is recommended. This procedure dries off any moisture, contamination or solvents and assists the epoxy in achieving maximum adhesion to the substrate.
- All prepared surfaces should be lined as soon as possible, to eliminate any rusting of the prepared surface.

## Mix Ratio – Resin to hardener: Weight 9:1, Volume 3:1

- Spread mixed material over the repair area and work firmly into the substrate to ensure maximum surface contact.
- To bridge large gaps or holes, use fibreglass tape, expanded metal or mechanical fasteners.

Directions for Casting Epoxy:

1. Brush a thin coat of epoxy onto substrate to be duplicated.
2. Pour epoxy in a fine stream to avoid entrapping air.
3. Do not pour epoxy in sections greater than 25mm at a time. Allow material to set up and cool before adding additional thickness.

## Cure:

- Working time is 45 minutes @ 24°C
- Functional (75%) cure is achieved in 16 hour @ 24°C
- For maximum physical properties, heat cure for 4 hours @ 90°C after curing at room temperature for 2 1/2 hours.

## Machining

- Allow material to cure for at least 4 hour before machining
- Lathe speed 48 m/minute
- Cut: dry
- Tools: Carbide top rake 6° (+/- 2°) – Side/front 8° (+/- 2°)
- Feed rate (rough): Travel speed 0.20 mm Rough cut 0.20 mm – 0.60 mm
- Feed rate (finishing): Travel speed 0.10 mm Finish cut 0.10 mm
- Polishing: use 400 to 650 emery paper wet. Material should polish to a 25-50 micron finish

## Precaution

Use in accordance with Material Safety Data Sheet.

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.

**Warning: For industrial use only.**

## ORDERING INFORMATION

Stock No.	Unit Size
10210	0.5 kg

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