

**ELI-FIL FR/913  
STEEL PUTTY 'QUICK SETTING'**

PRODUCT:	A metal filled, ambient temperature curing, two-pack Epoxy Paste with outstanding mechanical and thermal properties.	
APPLICATION:	By spatula	
VISCOSITY / 25°C:	Mixed Compound: Paste	
COLOUR:	Resin:	Metallic grey
	Hardener:	Clear
MIXING RATIO:	By weight:	By volume:
	100 parts of Resin	100 parts of Resin
	21 - 22 parts of Hardener	55 - 58 parts of Hardener
	OR	
	Mix : 1 x 12.5 ml = 40 g spoon (fill level with Resin)	
	With : 1 x 2 ml = 2.2 g spoon (fill level with Hardener)	
		1 x 5 ml = 6.4 g spoon (fill level with Hardener)
RECOMMENDED MIXING TIME:	1 – 2 Minutes (use flat spatula)	
GELTIME / 25°C: (5 mm thick film application)	3 Minutes	
SETTING TIME / 25°C: (5 mm thick film application)	5 – 6 Minutes	
SPECIFIC GRAVITY / 25°C:	Resin:	2.9 – 3 g/cm <sup>3</sup>
	Hardener:	1 – 1.15 g/cm <sup>3</sup>
	Mixed Compound:	2.90 – 2.95 g/cm <sup>3</sup>

**PHYSICAL CHARACTERISTICS**

HARDNESS AFTER 24 HOURS CURE / 25°C:	Shore D 80 – 85
FULL CURE / 25°C:	Shore D 85 – 90
TEMPERATURE RESISTANCE:	Max: 100°C
CURE SHRINKAGE	0.05 – 0.15 %
CO-EFFICIENT OF THERMAL EXPANSION (cm / cm / °C)	29 x 10 <sup>-5</sup>
TENSILE STRENGTH: (Din 53455)	45 – 50 MPa

FLEXURAL STRENGTH: (Din 53452)	70 – 75 MPa
COMPRESSIVE STRENGTH: (Din 53454)	75 – 80 MPa
IMPACT STRENGTH:	8 kJ/m <sup>2</sup>
ADHESION:	Excellent to cleaned and roughened ferrous and non-ferrous metals.

#### CHEMICAL CHARACTERISTICS

(Cured 7 days / 25°C)

IMMERSION 30 DAYS / 25°C

##### Excellent resistance against

Oil, Grease, Petrol, Water, Detergents and diluted Acids/Alkaline

##### Satisfactory resistance against

Medium strength Acids / Alkaline and various cleaning Solvents  
(Individual tests are advisable)

##### Poor resistance against

Concentrated and strongly oxidising Acids (e.g. Nitric Acid) and Chlorinated Solvents e.g. Methylene Chloride

#### PROPERTIES AND USES

ENGINEERING / MINING  
APPLICATIONS:

The use of the FR/913 "quick set" Steel Putty is recommended where emergency repairs must be undertaken and time does not allow the application of the standard Eli-Fil range of Metal Filling Putties.

Typical applications include repairs on damaged- leaking pipes, pumps, tanks and machine parts, to build up worn parts and linings in pumps, on impellers, shafts.

FOUNDRY APPLICATIONS:

The paste like viscosity combined with excellent adhesion and strength on all ferrous and non-ferrous surfaces makes the steel putty an ideal product to fill blow holes, incorrectly drilled holes and surface blemishes in ferrous and non-ferrous castings and patterns.

TOXICITY:

Very low toxicity and skin irritation potential at ambient temperature. However, gloves should be worn and adequate ventilation must be ensured during application.

STORAGE STABILITY:

12 months stored under dry and cool conditions in sealed containers.

NOTICE:

The technical specification and/or our technical advice whether verbal, in writing or by trials is given in good faith and based on our test results obtained but without warranty. It does not release the user from the obligation to test the products supplied by us or any third party as to the suitability for the intended application.

The application, use and processing of the products are beyond our control and Messrs Elite Chemical Industries (Pty) Ltd's legal obligation in respect of any sale of its products shall be determined by the terms of its conditions of sale.