

Steel Repair Sticks are fast, versatile, permanent and very simple to use. Manufactured in Germany from Steel filled Epoxy Resin, Steel Repair Sticks cure very fast, set hard and offer a permanent, hard-wearing repair solution. They bond well to most materials and surfaces and are NSF approved for use in drinking water applications.

Out of the tube, Steel Repair Sticks are soft, pliable and easy to mix and shape by kneading in your hands. Once applied, they'll bond with high adhesive strength and cure to form a solid mass that will be dark grey in colour. They require no special tools; just cut off the amount you want from the tube, knead and apply.



Applications

- Bonding of metal parts and components that do not fit together tightly (large bonding gaps up to 15mm)
- Sealing and repairing pipe fittings
- Patching holes in metal, fibreglass, hard plastic, wood and other rigid materials
- Refinishing scratched or uneven metal plates and surfaces
- Sealing cracks and holes in tanks
- Fixing pumps and pump housings
- Fixing torn out or burred threads
- Reinforcing or refixing loose or broken balcony railings or bannisters
- Repairs in the marine sector
- Bonding and repairs to wood and wood-based parts and sheeting
- Bonding, gap-filling and repairs to hard plastics and fibre-reinforced rigid sheets like epoxy glass laminates and fibreglass sheet
- Covering gaps, securing and filling holes in stone, masonry, bricks and concrete
- Securing and gap-filling around ceramic and glass sheets and parts

Preparation of the Surface

To ensure that the Steel Repair Stick bonds well and achieves its full potential it is very important that you ensure the surface to which it will be applied is clean and dry. Adhesion to very smooth surfaces will be enhanced if you are able to roughen the surface slightly before applying the repair stick as this will increase the available bonding area. Just make sure you clean away any dust generated by this roughening if you do.

Application

Remove the putty from the tube and cut off the amount you want to use. Mix the cut off portion by kneading it until it has a single, homogenous colour to it.

Steel Repair Sticks can cover gaps up to 15mm in size. Pot life starts once you mix portion together. For this grade, you can expect a fast pot life of about 4 minutes if you mix 25 grams or putty at room temperature. If larger quantities are used, the curing time will be faster due to the typical reaction heat of epoxy resins (exothermic reaction). Similarly, higher ambient temperatures shorten the cure time (as a rule of thumb, every 10°C increase above room temperature will halve working time and cure time). Temperatures below +16°C will extend working time and cure time considerably while below around +5°C no reaction will occur.

For safety information, please consult the Safety Data Sheet on our Steel Repair Sticks.

Important

The values listed here and the information presented should not be treated as a substitute for specific technical advice. We cannot warrant the products performance or suitability for particular applications.

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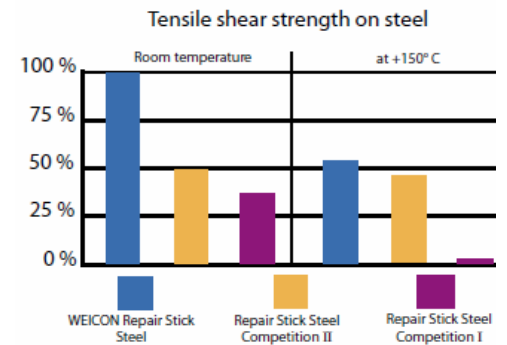
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Technical Details
General Surface Compatibility

Metal (e.g. stainless steel, brass, cast iron, aluminium)	++
Hard Plastics* (e.g. epoxy laminates, rigid PVC)	+
Wood (e.g. oak, beech, spruce, balsa)	+
Derived Timber Products (e.g. plywood, MDF)	+
Fibre Reinforced Materials (e.g. GFRP, CFRP, Fibreglass)	+
Glass, Ceramics	+
Stone (e.g. granite, brick, concrete, marble)	+
Rubber Elastomers	-

++ = Highly Compatible + = Compatible - = Not Compatible

*Performance will vary depending on the exact type of plastic being bonded. Generally, low surface energy plastics will be much harder to bond to than high surface energy (such as rigid PVC).


Properties

Basis	Epoxy Resin with Steel Fillers
Nature	Putty
Density	2 g/cm ³
Maximum Gap Covering Power	15mm
Pot Life for 25g of Material @ 20°C	4 Minutes
Processing Temperature	+10°C to +35°C
Curing Temperature	+6°C to +40°C
Colour After Curing	Dark Grey
Handling Strength (35% of Final) When Curing @ 20°C	10 Minutes
Mechanical Strength (50% of Final) When Curing @ 20°C	1 Hour
Final Strength (100%) When Curing @ 20°C	24 Hours
Temperature Resistance (Continuous)	-50°C to +120°C
Temperature Resistance (Short-Term, 2 Hours Max.)	+150°C
Pressure (DIN 52381-83)	80 N/mm ²
Shore Hardness	75 Shore D
Average Tensile Shear Strength After 7 Days at 20°C (as per DIN 52383)	4.1 N/mm ² on Sand Blasted Steel
Thermal Conductivity (ASTM D527)	0.6 W/m·K
Linear Shrinkage While Curing	<1%
Electrical Resistance (ASTM D257)	5 · 10 ¹¹ Ω/cm
Dielectric Strength (ASTM D149)	3 kV/mm
Thermal Expansion Coefficient (ISO 11359)	30-40 x 10 ⁻⁶ k-1

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Steel Repair Stick Chemical Resistance

Acetic Acid Dilute (<5%)	+	Hydrochloric Acid (<10%)	+
Acetone	O	Hydrochloric Acid (10-20%)	+
Alkalis (Basic Minerals)	+	Hydrofluoric Acid Dilute	O
Amyl Acetate	+	Hydrogen Peroxide (<30%)	+
Amyl Alcohols	+	Impregnating Oils	+
Anhydrous Ammonia (25%)	+	Magnesium Hydroxide	+
Barium Hydroxide	+	Maleic Acid	+
Butyl Acetate	+	Methanol (Methyl Alcohol, <85%)	O
Butyl Alcohol	+	Milk of Lime	+
Calcium Hydroxide (slaked lime)	+	Naphthalene	-
Carbolic Acid (Phenol)	-	Naphthene	-
Carbon Disulphide	+	Nitric Acid (<5%)	O
Carbon Tetrachloride	+	Oils, Vegetable and Animal	+
Caustic Potash Solution	+	Oxalic Acid (<25%)	+
Chlorinated Water	+	Paraffin	+
Chloroacetic Acid	-	Perchloroethylene	O
Chloroform	O	Petrol (92-100 Octane)	+
Chromic Acid	+	Phosphoric Acid (<5%)	+
Chroming Baths	+	Phthalic Acid	+
Creosote Oil	-	Phthalic Acid Anhydride	+
Cresylic Acid	-	Potassium Hydroxide (Caustic Potash, 0-20%)	+
Crude Oil	+	Soda Lye	+
Crude Oil Products	+	Sodium Bicarbonate (Sodium Hydrogen Carbonate)	+
Diesel Fuel Oil	+	Sodium Carbonate (Soda)	+
Ethanol < 85% (Ethyl Alcohol)	O	Sodium Chloride (Cooking Salt)	+
Ethyl Alcohol	O	Sodium Hydroxide (Caustic Soda, <20%)	O
Ethyl Benzole	-	Sulphur Dioxide	+
Ethyl Ether	+	Sulphuric Acid (<5%)	O
Exhaust Gases	+	Tannic Acid Dilute (<7%)	+
Formic Acid (>10%)	-	Tetralin	O
Glycerine	+	Toulene	-
Glycol	O	Trichloroethylene	O
Grease, Oils and Waxes	+	Turpenetine Substitute (White Spirit)	+
Heating Oil, Diesel	+	Xylene	-
Humic Acid	+		
Hydrobromic Acid (<10%)	+		
Hydrocarbons (Aliphatic)	+		
Hydrocarbons (Aromatic)	-		

+ = Resistant

O = Resistant for a Limited Time

- = Not Resistant

Storage

When stored unopened and in normal climatic conditions (20°C) Steel Repair Sticks have a minimum shelf-life of 18 months. Storage in direct sunlight should be avoided.

Available Sizes

Weicon Steel Repair Sticks are available from Swift Supplies in 57gm and 115gm tubes.

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