Epoxy Resin Systems
Plastic Metal

WEICON Epoxy Resin Putty



High-strength | versatile | temperature-resistant up to +200 °C

WEICON Epoxy Resin Putty is a metal-free, kneadable 2-component compound.

The product can be used for various purposes. It is suitable for the reconditioning and repair of castings, the rebuilding of shafts, slide bearings, pumps and housings, the renewal of defective threads, the production of templates and models, and for repair works on aluminium, light metal and injection moulded parts. The compound can be used to seal pipes and tanks and to fix screws and hooks. It can be used to remove corrosion damage and pitting or to repair holes and blowholes.

Epoxy Resin Putty adheres particularly well to all metals and also to ceramics, glass, stone, concrete, wood, rubber and many plastics.

When cured, WEICON Epoxy Resin Putty is machinable, paintable and resistant to petrol, oil, esters, salt water and most acids and alkalis. It has a high-temperature-resistance up to +200 °C (+392 °F), is non-magnetic and non-corrosive.

Due to the simple mixing ratio of 1:1 by weight and volume, resin and hardener can be portioned very easily in the desired quantity. WEICON Epoxy Resin Putty can be used in machine construction, tool construction, model and mould making, and in many other industrial applications.

Characteristics

Base		Epoxy
Filler		mineral
Texture		modelling compound
Colour		green
Minimum shelf life	at room temperature	36 mon.

Processing

Processing temperature		+15°C to +40°C
Component temperature		>3 °C above dew point
Relative air humidity		< 85 %
Mixing ratio by weight		1:1
Mixing ratio by volume		1:1
Density of the mixture		2 g/cm³
Consumption	Layer thickness 1.0 mm	2 kg/m²
Max. layer thickness	per step	20 mm

Curing

Pot life	at 20 °C, 25 g batch	20 min.
Working strength after	(80 % strength)	4 h
Final strength	(100 % strength)	24 h

Mechanical properties after curing

Compressive strength	DIN EN ISO 604	78 MPa
Hardness (Shore D)	DIN ISO 7619	88 ± 3
Adhesive strength	DIN EN ISO 4624	13 MPa

Thermal parameters

Temperature resistance		-60 °C to +200 °C

Electrical parameters

Magnetic		no

Approvals / Guidelines

ISSA Code		75.509.37/38/39
IMPA Code		812952/53/54

Instructions for use

When using WEICON products, the physical, safety-related, toxicological and ecological data and regulations in our EC safety data sheets (www.weicon.com) must be observed.

Surface pretreatment

The successful application of WEICON Epoxy Resin Putty depends on the careful preparation of the surfaces, as this is a decisive factor for the success of the application. Dust, dirt, oil, grease, rust and moisture or wetness have a negative impact on the adhesion. Therefore, before processing, the following points must be observed: The areas to be bonded or repaired must be free of any oil, grease, dirt, rust, oxides, paint and other impurities or residues. For cleaning and degreasing, we recommend WEICON Cleaner Spray S.

Smooth and particularly heavily soiled surfaces should additionally be treated by mechanical surface pre-treatment, e.g. by grinding or preferably by blasting. In case of blasting, the surface should be brought to a degree of purity of SA 2 ½ - "Near White Blast Cleaning" (according to ISO 8501/1-2, NACE, SSPC, SIS). In order to achieve an optimum surface roughness of 75 - 100 µm, angular, disposable blasting media (aluminum oxide, corundum) should be used. The surface quality is negatively influenced by the use of reusable blasting media (slag, glass, quartz), but also by ice blasting. The air for blasting must be dry and oil-free. Metal parts that have come into contact with sea water or other salt solutions should first be rinsed thoroughly with demineralised water and, if possible, left to rest overnight so that all salts can be dissolved from the metal. Before each application of WEICON

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Epoxy Resin Putty, a test for soluble salts should be carried out according to the Bresle method (DIN EN ISO 8502-6).

The maximum amount of soluble salts remaining on the substrate should not exceed 40 mg/m^2. Heating and repeated blasting of the surface may be necessary to remove all soluble salts and moisture.

After each mechanical pre-treatment, the surface should be cleaned again with WEICON Cleaner Spray S and protected from further contamination until the coating is applied.

Areas where no adhesion to the substrate is desired must be treated with silicone-free mould release agents. For smooth surfaces, we recommend WEICON Mould Release Agent Liquid F 1000 or, for porous surfaces, WEICON Mould Release Agent Wax P 500.

After the surface pre-treatment, WEICON Epoxy Resin Putty should be applied as soon as possible (within one hour) to avoid oxidation, flash rust or new contamination.

Mixing

Then mix the resin and hardener together thoroughly and bubble-free by kneading and rolling for at least four minutes at 20 °C (68 °F). The components should be stirred until a homogeneous mixture with a uniform green colour is achieved. The mixing ratio of the two components must be strictly observed, as otherwise, strongly deviating physical values will result (max. deviation +/- 2 %). Only prepare a batch as large as can be processed within the pot life of 20 minutes. The specified pot life refers to a material batch of 25 g and 20 °C (68 °F) material temperature. Mixing larger quantities or higher processing temperatures will result in faster curing due to the typical reaction heat of epoxy resins. Temperatures below 10 °C may cause the product to harden. Brief heating to 30 °C restores the usual suppleness.

Apply

For processing, we recommend an ambient temperature of 20 °C (68 °F) at less than 85% relative humidity. For a thin pre-coat, work WEICON Epoxy Resin Putty intensively into the surface in crosswise layers using a putty knife to achieve maximum adhesion. By means of this technique, the epoxy resin penetrates well into all cracks and roughness depths. Afterwards, further applications can be carried out straight away, until the desired layer thickness is reached. Make sure that the epoxy resin is applied evenly and without air bubbles. To fill large gaps or holes, fibreglass, expanded metal or other mechanical fixing materials should be used. Finally, the surface can be smoothed easily with the help of a PE film and a rubber roller.

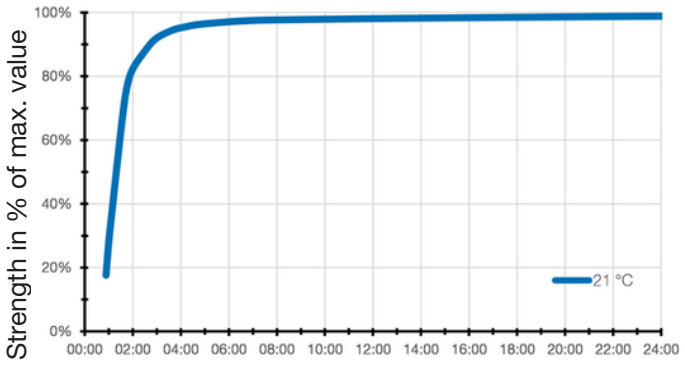
Application

Knead resin and hardener in the ratio 1:1, until the mixture has a uniform green colour. Then stick onto the clean bonding surface. In order to bridge cavities, the use of glass fibre cloth is recommended. The cured material can be machined (e.g. drilled, filed, milled) and painted without pre-treatment.

Curing

Final hardness is reached after 24 hours at 20 °C (68 °F) at the latest. At lower temperatures, the curing can be accelerated by evenly applying heat up to max. 40 °C (104 °F), e.g. with a heating pack, hot air blower or fan heater. Higher temperatures shorten the curing time. The following rule of thumb applies: Each increase by +10 °C (50 °F) above room temperature (20 °C/68 °F) will decrease the curing time by half. Temperatures below 16 °C (61 °F) increase the curing time, until at approx. 5 °C (41 °F) and below, almost no reaction will take place at all.

Increase in strength



Time in hours

Storage

WEICON Epoxy Resin Systems should be stored in a dry place at room temperature. Unopened containers can be stored at temperatures from +18 °C to +28 °C. Opened containers must be used up within 6 months.

Scope of delivery

Instructions for use

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Accessories

10000147	Cleaner Spray S, 500 ml, transparent
10000347	Cleaner S, 5 L, colourless, transparent
10024313	Surface Cleaner, 400 ml, transparent
10025288	Surface Cleaner, 5 L, transparent
10026647	Mould Release Agent Liquid F 1000, 250 ml, white, milky
10026712	Mould Release Agent Wax P 500, 150 g
10000913	Glass Fibre Cloth Tape, 1 PCE, white
10010887	Processing Spatula short, 1 PCE
10022562	Processing Spatula long, 1 PCE
10010066	Contour Spatula Flexy, 1 PCE
10016002	Pump Dispenser WPS 1500, 1 PCE
10039667	Cable Scissors No. 35, 1 PCE
10045523	Processing Kit, 1 PCE

Recommended equipment

Angle grinder
Blast machine
Heat pocket
Hot or fan heater
Smoothing trowel, spatula
PE film 0.2 mm
Fabric tape
Rubber roller
Lint-free cloth

Conversion table

(°C x 1.8) + 32 = °F
mm/25.4 = inch
µm/25.4 = mil
N x 0.225 = lb
N/mm^2 x 145 = psi
MPa x 145 = psi
Nm x 8.851 = lb·in
Nm x 0.738 = lb·ft
Nm x 141.62 = oz·in
mPa·s = cP
N/cm x 0.571 = lb/in
kV/mm x 25.4 = V/mil

Available sizes

10000103	WEICON Epoxy Resin Putty, 100 g, green
10000104	WEICON Epoxy Resin Putty, 0,4 kg, green
10000105	WEICON Epoxy Resin Putty, 0,8 kg, green

To the product detail page:

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Chemical resistance after curing* (Excerpt)

1,4-Dioxane	-	Glycol	+
Exhaust fumes	+	Uric acid	-
Adipic acid	-	Impregnating oils	+
Diethyl ether	+	Iodides (K, Na etc.)	-
aliphatic hydrocarbons	+	Potassium carbonate	+
Formic acid >10 % (methanoic acid)	-	Potassium hydroxide 0-20 % (caustic potash)	+
Ammonia anhydrous 25%	-	Milk of lime	+
Aniline	-	Phenol	-
aromatic hydrocarbons	+	Cresol	-
Barium hydroxide	+	Magnesium hydroxide	+
Benzoic acid	-	Maleic acid (cis-ethylenedicarboxylic acid)	-
Benzyl alcohol	-	Methanol (methyl alcohol) <85 %	o
Benzyl chloride	-	Methylene chloride	-
Boric acid	-	Mineral oil	+
Bromides	-	Naphthalene	+
Butadiene (1,3-)	-	Sodium bicarbonate (sodium hydrogen carbonate)	+
Butyric acid	-	Sodium carbonate (soda)	+
Butyl acetate	o	Sodium chloride (table salt)	+
Butyl alcohol	o	Nitrates	-
Calcium hydroxide (slaked lime)	+	Nitrobenzene	-
Chloroanilines	-	Oxalic acid <25 % (ethanedioic acid)	o
Chloroform (trichlormethane)	-	Perchloraethylene	-
Chlorosulphuric acid (wet and dry)	-	Kerosene	+
Chlorosilanes	-	Oils, vegetable and animal	+
Chlorinated water (swimming pool concentration)	-	Phosphoric acid <50%	+
Chromates (K, Na, etc.)	-	Phthalic acid, phthalic anhydride	-
Chromic acid	-	Nitric acid <5%	-
Cyanides (K, Na etc.)	-	Sulphur dioxide (wet and dry)	-
Cyclohexanone	-	Carbon disulphide	-
Mineral oil and mineral oil products	+	Sulphuric acid <5%	+
Acetic acid diluted <5%	o	Soap solution	+
Ethanol <85 % (ethyl alcohol)	o	Turpentine	+
Greases, oils and waxes	+	Carbon tetrachloride (tetrachloromethane)	-
Hydrofluoric acid	-	Tetralin (tetrahydronaphthalene)	-
Tannic acid diluted <7%	o	Trichloraethylene	-
Glycerin (trihydroxipropane)	+	Hydrogen peroxide <30 % (hydrogen superoxide)	o

+ = resistant 0 = for a limited time - = not resistant *The storage of all WEICON Plastic Metal types was carried out at +20°C chemical temperature.

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