



Plastic Metal

The ideal material for
repair, maintenance, tool
and mould making

Plastic Metal

WEICON Plastic Metal is ideal for providing fast, cost effective and durable repairs to many different types of material. WEICON Plastic Metal is also suitable for tool and mould making.

The range consists of 16 different types to cover the various application requirement needed for industry. The system is complemented by a range of optional accessory products.



Composition

WEICON Plastic Metals are two-component epoxy resin systems. All types are supplied in a retail package which contains the resin and hardener components in the correct mixing ratios. Depending on type, the resin component is filled with either steel or aluminium powder or in some cases, a mineral filler (except Casting Resin MS 1000). The different hardeners determine the viscosity and curing behaviour of each product type.



Picture 1 Flare bleeder in a petrochemical factory

Characteristics

After mixing the two components, WEICON Plastic Metal hardens to a firm, metal-like material which immediately adheres to almost every kind of surface. Time of hardening depends on the type. Unlike polyester resin, the material does not shrink while curing. The cured material may be machined, e.g.

- drilled
- milled
- ground
- filed

WEICON offers a wide range of putty, liquid or brushable types with extremely high temperature and abrasion resistance.

All types show an excellent resistance to aggressive media.



Picture 2+3 Oxygene Cooler

Detailed product information as well as technical data and tips for use will be given on the next pages

Applications

Most different materials may be reliably and durably bonded, to themselves and among each other, e.g.

- iron, steel, hard metal, bronze, lead
- aluminium, brass and copper
- glass and ceramics, concrete and wood
- as well as many rigid plastics (except PTFE, polyethylene and polypropylene)

For workshops and maintenance departments in all industries, WEICON Plastic Metal is the ideal product for

- repairs on aluminium and light alloy
- reconditioning and repairing castings, pipes and tanks
- filling blowholes and microporosities
- working over shafts, sliding bearings, pumps and housings
- welding without preheating (wherever welding is problematic or impossible)

In industrial design and manufacturing, WEICON Plastic Metal is used for making moulds and models, in particular

- as an aid for making moulds for rubber and injection moulded parts
- making dies
- templates and models for pre-production testing
- lining of cutting tool guides
- making fixing devices.

WEICON Plastic Metal is ideal for maintenance works and will give durable repairs without the need for expensive replacement parts.



Picture 1+2+3 Bracing the legs of a rig for transport

WEICON A

putty - steel-filled -
temperature resistant from -35°C up to +120°C



Picture 4 Fixing device

WEICON A is the general purpose product from within the WEICON Plastic Metal range. Nearly all repair jobs can be dealt with WEICON A:

- elimination of corrosion damages and pitting on tanks
- repairs on pipes and castings
- repairs of cracks on housings and machine parts
- making of moulds, models, tools and fixtures.

WEICON B

liquid - steel-filled -
temperature resistant from -35°C up to +120°C



Picture 5 Holding device

Due to its liquid consistency and low viscosity, WEICON Plastic Metal B is particularly suitable for:

- detailed reproductions in mould and model making
- making tools and templates, gauges and fixtures
- filling blowholes and microporosities on castings
- as well as for general repair works where a castable compound is advantageous.

WEICON BR

NEW

putty - bronze-filled -
temperature resistant from -35°C up to +120°C



Picture 6 Repair of a ship's propeller

WEICON BR, the new product type within the WEICON Plastic Metal range, is particularly suitable for:

- filling blowholes and rebuilding bronze equipment parts (e.g. ship's propellers)
- repairs to bronze castings
- patch-up and rebuilding where brazing is undesirable or impossible

Also bonds strongly to all other metals, such as brass, copper, ferrous metals.

WEIDLING C

liquid - aluminium-filled -
high-temperature resistant from -35°C up to +220°C



Picture 1 Filter for the food-industry

High-temperature resistant casting resin system especially for industrial use. This type is non-corroding, anti-magnetic and cures practically without shrinkage. The product provides high temperature resistance after precuring at room temperature and post-curing (after-bake) at +120°C.

Especially suitable for:

- pouring out moulds (e.g. vacuum and foam moulds)
- making fixing devices and tools (e.g. injection dies), which are exposed to high temperatures.

WEICON F

putty - aluminium-filled -
temperature resistant from -35°C up to +120°C



Picture 2 Reconditioning of aluminium housing

Designed for use on aluminium or alloy, magnesium and other light metals.

- For all kinds of cost saving repairs, also on steel parts.
- For filling blowholes on light alloy casts.
- For the reconditioning of parts (e.g. injection moulded parts, holding devices).
- Non-corroding, anti-magnetic.

WEICON F2

liquid - aluminium-filled -
temperature resistant from -35°C up to +120°C



Picture 3 Articulated arms of awnings

WEICON F2 is highly recommended for making castings, and in particular for

- making moulds, forms and templates
 - reconditioning porous or damaged castings
 - making prototypes and holding devices
 - pouring out swages to test their exactness.
- Non-corroding, low specific weight.

WEICON SF

putty - steel-filled - super-fast curing -
temperature resistant from -35°C up to +90°C



Picture 4 Emergency repair of pipes

The universal type for quick repairs due to its fast-curing properties (pot life 5 minutes, may be machined after 45 minutes) and its simple application.

- For quick repairs and bondings on leaky pipes, housings and gears.
- For making anchorages.
- For making fixing devices.

WEICON WR

liquid - steel-filled - wear resistant -
temperature resistant from -35°C up to +120°C



Picture 1 Repair of a guide in blancing press

This pourable wear-resistant type is used in mould making and wherever metal parts are subject to high wear caused by friction, e.g.:

- for repairing and build-up of shafts
- for pouring out bearings, cutting and punching tools
- for making casting and profile milling models as well as drawing moulds
- for pouring under machines and foundations
- and as a wear-resistant under-coating before coating with WEICON Ceramic BL

WEICON Plastic Metal WR transforms to a hard and wear-resistant surface with good sliding properties.

WEICON HB 300

putty - steel-filled - high-temperature resistant
from -35°C up to +200°C, shortly up to +280°C



Picture 2 Repair of a primary shaft

A high quality putty with the advantages of a high-temperature resistance and a 1:1 mixing ratio. May also be used on vertical surfaces. Easy and practical to use e.g.:

- for repairing and bonding castings and metal parts
- for filling blowholes and for repairing damages on containers, car bodies and machine parts
- for sealing pumps and pipes
- for making blanking and deep-drawing dies

WEICON WR2

putty - mineral-filled - wear resistant -
temperature resistant from -35°C up to +120°C



Picture 3 Wheel of a centrifugal pump

Differs from type WR in its putty and non-dripping consistency and the mineral fillers. Due to these properties, this wear-resistant type is mainly used where castable compounds cannot be processed:

- for repairs on conveyors, guides and sliding ways
- where rolling or sliding movements cause wear
- for repairing worn-out flanges
- to prevent wear on metal surfaces which are exposed to extreme abrasion and erosion
- for lining pump housings and extruders
- and as a wear-resistant under-coating before coating with WEICON Ceramic BL

WEICON TI

putty - titanium-filled
temperature resistant from -35°C up to +150°C

NEW



This titanium-filled type, is especially suitable for repairs which require high compressive strength and extreme chemical resistance.

Suitable for

- repairs of pumps, valves, wearing plates, ball bearing seats, shafts, centrifugal pumps and propellers
- linings of pump cases, slide bearings, etc.

WEICON Ceramic BL

liquid - brushable - mineral (carborundum and zircon) -filled - extremely wear resistant - high temperature resistant from -35°C up to +180°C



Picture 1 Coating of a conveyor spiral

Brushable surface protection with extremely high wear and abrasion resistance. Forms a smooth surface of low friction which shows a high chemical resistance and which is used:

- for lining highly stressed pump cases
- as a wear protection for slide bearing, slides, funnels and pipes
- for repairing castings, valves and blower vanes

Large blowholes and/or damaged spots should be first filled with WEICON WR or WEICON WR2 as appropriate. WEICON Ceramic BL forms an extremely hard surface with excellent edge strength and high mechanical strength.

WEICON Casting Resin MS 1000

liquid - unfilled - transparent - temperature resistant from - 35°C up to +120°C

Unfilled epoxy resin of low viscosity. Casting and laminating resin system which is suitable for many different applications.

WEICON Casting Resin MS 1000 may be filled with a variety of different fillers (pulverized, fibrous and textural) to produce highly filled backings.

WEICON UW

NEW

putty - titanium filled - cures even under water non corrosive - salt water resistant. temperature resistant from -35°C up to +120°C



Picture 2 repairing of flood-gate

Titanium-filled special type with very high bonding strength on damp and wet surfaces and even under water. Particularly suitable for repair and maintenance work, i.e.:

- pipes, pumps, valves, tanks, vessels und trays
- marine and off-shore sector
- sewage installations
- paper industry
- wherever dampness and wetness lead to bonding problems

WEICON Ceramic W **NEW**

putty - mineral-filled - extremely wear resistant - high temperature resistant from -35°C up to +150°C, briefly up to +260°C



Picture 3 Bonding of aluminium oxyd-stones

White surface protection coating with extremely high resistance against abrasion and chemical substances. Thanks to its putty consistency, it can also be used on vertical surfaces and even overhead.

Recommended especially

- for bonding and lining of aluminiumoxide stones in mill production
- for lining of highly stressed pump cases
- as a wear protection for slide bearings, slides and pipes and everywhere where the use of dark products is not wanted for optical reasons.

WEICON ST

NEW

putty - stainless steel filled - non corrosive
temperature resistant from -35°C up to +120°C



Picture 1 reconditioning of stainless steel tank

Special high grade, non corrosive putty for various repair and maintenance works on machine parts and stainless steel equipment i.e.:

- tanks, pipes, vessels, trays, funnels in chemical plants
- marine and off-shore sector
- sewage installations
- paper industry

WEICON Epoxy Resin Putty

putty - kneadable - mineral-filled -
temperature resistant from - 35°C up to +200°C



The easy-to-use and versatile putty compound for sealing, fastening, bonding, filling and moulding. Used for fast repairs and maintenance works such as:

- Fixing screws, anchors and plugs
- Repairing leaky tanks and pipes
- Reconditioning castings
- Repairing shafts, bearings, pumps and housings.
- Reconditioning defective threads
- For fast repairs of various materials
- For making templates and models for pilot production

Other epoxy resin products within the WEICON range

- WEICON Repair Sticks
 - ST 115 Aqua
 - ST 115 Copper
 - ST 115 Steel
 - ST 115 Aluminium
 - ST 115 Titanium
 - ST 56 Wood

- WEICON Easy-Mix Epoxy Adhesives
Mixing and Dosing Systems
- WEICON Epoxy Minute Adhesive
- WEICON Fast-Metal Minute Adhesive

(please ask for separate leaflets)



Supplementary Range



WEICON Hand Protective Foam

WEICON Hand Protective Foam forms an invisible layer on the skin which is free of grease and protects against various kinds of soiling as well as against pollutants and irritants, e.g. adhesives and solvents.

WEICON Hand Protective Foam contains liposomes and an antibacterial substance.

WEICON Cleaner Spray S

WEICON Cleaner S is the ideal cleaner to remove oily and greasy soiling. Even gummy lubricants will be removed. Ideal as a pretreatment of surfaces on which WEICON Plastic Metal is to be applied. WEICON Cleaner S degreases and cleans all metals, glass, ceramics and many plastics. However, it may attack the surface of thermoplastics such as PVC, Plexiglas, polystyrene etc. and some simple paints. Unlike ordinary thinners, WEICON Cleaner Spray S leaves no residues.

WEICON Mould Release Agent

WEICON Mould Release Agent is a silicone-free sliding and release agent based on natural products. Can be supplied in putty, liquid or spray form. The high-grade product formulation prevents sticking on:

- plastics
- metals
- moulds
- tools

WEICON Silicone-Spray

WEICON Silicone Spray is temperature resistant up to +250°C and provides a long-lasting parting film and a good surface finish.

Porous surfaces as well as wood and plaster should be sealed with a putty release agent before using WEICON Silicone Spray.

WEICON Flex-Hardener

This hardener is used instead of the normal hardener and makes WEICON Plastic Metal more flexible and improves adhesion. For flexible joints, e.g. parts and anchorages exposed to vibrations. Suitable for types WEICON A, B, F, F2, WR and WR2.

The mixing ratio (therefore the flexibility) may be varied:

Maximum mixing ratio 1 : 1 (rubber-like)

Minimum mixing ratio 1 : 1/4 (tough).



WEICON Sealant and Adhesive Remover

WEICON Sealant and Adhesive Remover quickly and easily removes

- residues of old sealant, gaskets and adhesive
- varnishes and paints.

WEICON Sealant and Adhesive Remover makes the use of mechanical aids superfluous, preserves the tools and is time-saving. It makes the surfaces metal clean thus ensuring perfect sealing. The very powerful dissolving effect makes it very easy to apply (even on vertical surfaces). It considerably saves time compared to conventional mechanical methods.

WEICON Sealant and Adhesive Remover is used on:

- metal
- wood
- ceramics
- polyethylene and polypropylene.

It is not recommended for sensitive plastics such as PVC, synthetics, linoleum, etc.

Product recommendation

Product Application	WEICON A	WEICON B	WEICON BR	WEIDLING C	WEICON F	WEICON F2	WEICON SF	WEICON WR	WEICON WR2	WEICON Ceramic BL	WEICON Ceramic W	WEICON TI	WEICON UW	WEICON ST	WEICON HB 300	WEICON Epox Resin Putty
Aspiration port - repairing and sealing									•	•		•				
Driving shafts - repairing	•								•			•				•
Steam valves - repairing				•											•	
Flanges - repairing and sealing	•		•		•		•								•	•
Conveyor spirals - repairing and coating									•	•	•					
Moulds - repairing and modification		•		•		•		•			•			•		
Loading hoppers - repairing and assembly	•				•		•	•	•		•	•				•
Blower - repairing			•					•	•	•						
Blower vane - repairing	•		•		•							•		•		•
Blower vane - coating								•	•	•	•	•				
Threads - repairing and assembly	•															•
Slideways - repairing								•		•	•	•				
Friction bearings - repairing	•						•					•				
Piston - repairing					•			•	•							
Centrifugal pumps - repairing									•	•	•	•				
Ball bearing seats - repairing and assembly	•								•			•			•	•
Machine bearings - building		•				•		•				•				
Metal - assembly	•		•		•		•							•		•
Metal parts - repairing	•	•	•				•							•		•
Microporosities - sealing		•		•		•										
Pneumatic transporting plant - repairing					•				•	•	•					
Propeller - repairing			•									•				
Prototypes - building		•				•					•		•			
Pulverization mills - repairing and coating								•	•	•	•			•		
Pumps - preventive wearing coating								•		•						
Pump cases - additional inner coating					•			•		•	•					
Pump cases - repairing	•	•			•						•	•	•	•	•	•
Tubes - repairing	•				•		•					•	•			•
Elbow pipes - coating and repairing									•	•	•					
Slides - coating								•	•	•	•					
Injection moulding dies - repairing	•								•					•		
Tanks / Containers - repairing	•	•		•			•	•	•				•	•		•
As a mean of reducing vibration -	instead of the normal hardener: WEICON Flex Hardener															
Wearing coats - lining								•	•	•	•	•				
Heat exchanger - repairing				•			•	•	•				•		•	
Shafts - repairing		•						•	•			•				•
Work pieces - fixing devices		•	•	•		•						•				
Cyclones - coating		•						•		•	•					
Cylinder block - repairing	•			•											•	•

WEICON Plastic-Metal

Instructions for use

For detailed information regarding

- pretreatment of surfaces
 - mixing and mixing ratio
 - pot life and working time
- please see instruction leaflet, which is enclosed in the retail packaging.



Picture 1 Entrance of CO₂ installation

Hardening and Treatment

- Depending on the type, WEICON Plastic Metal may be machined resp. (in mould making) removed from the mould after 2 hours (min.) resp. 16 hours (max.) at room temperature.
- Most types are completely cured after 24 hours at room temperature (see Technical Data at page 11)
- At low temperatures, the influence of heat (heat lamp, hot-air fan) reduces the cure time. Do not use open fire.

Storage

- Store WEICON Plastic Metal in a dry place at room temperature (max. +25°C).
- Unopened containers may be stored at temperatures from +18°C up to +25°C for 18 months.
- Opened containers should be used within 6 months (exception: Epoxy Resin Putty max. 3 years).

Precautions

When using WEICON Plastic Metal observe the physical, toxical and ecological data and the safety regulations contained in the relevant EC Safety Data Sheets, which are available upon request.



Picture 2 Crank shaft of a Diesel generator

Important note:

The specifications and recommendations given in this brochure must not be seen as guaranteed product characteristics. They are based on our laboratory tests and on practical experience. Since individual application conditions are beyond our knowledge, control and responsibility, this information is provided without any obligation. We do guarantee the continuously high quality of our products. However, own adequate laboratory and practical tests to find out if the product in question meets the requested properties are recommended. A claim cannot be derived from them. The user bears the only responsibility for non-appropriate or other than specified applications.



Picture 3 Underfilling of a steel plate



Picture 4 Inner lining of a tank in chemical plant



Product type	Composition	Specific Properties	Colour after curing	Pack. Size	Mixing ratio				Pot life at +20°C (min.)	Specific weight of mixture g/cm³	Temperature resistance from/to °C	Cure times (in hours)		Mean strength at +20°C acc to DIN 53281-83							Viscosity with hardener mPa·s
					(Weight %)		(Vol. %)					hand-ling strength	final hard-ness	Com-pressive M Pa	Tensile M Pa	Flexura M Pa	Impact kJ/m²	E-Mod. M Pa	Shore hardn. D	Shrin-kage %	
					Resin	Hard-ener	Resin	Hard-ener													
WEICON A	Epoxy resin steel-filled	putty	dark-grey	0,5 kg 2,0 kg	100	10	4	1	60	2,90	-35°C up to +120°C	16	24	80	21	34	30	3500 - 5000	90	0,015	1 000 000
WEICON B	Epoxy resin steel-filled	liquid	dark-grey	0,5 kg 2,0 kg	100	7	4	1	60	2,75	-35°C up to +120°C	16	24	110	21	52	37	3500 - 5000	90	0,030	200 000
WEICON BR	Epoxy resin bronze-filled	putty	bronze	0,5 kg 2,0 kg	100	50	1,7	1	45	2,94	-35°C up to +120°C	16	24	85	19	25	35	7500 - 8000	85	0,020	1 600 000
WEIDLING C	Epoxy resin aluminium-filled	liquid, high-temperature resistant	grey	0,5 kg 2,0 kg	100	8	5	1	60	1,62	-35°C up to +220°C	pre-cure 14-24 hours, then after-bake at +120°C for 14 hours		140	25	77	60	5800 - 6000	90	0,010	25 000
WEICON F	Epoxy resin aluminium-filled	putty	aluminium	0,5 kg 2,0 kg	100	20	4,5	1	60	1,60	-35°C up to +120°C	16	24	61	20	37	36	1500 - 2000	84	0,020	880 000
WEICON F2	Epoxy resin aluminium-filled	liquid	aluminium	0,5 kg 2,0 kg	100	14	4	1	60	1,45	-35°C up to +120°C	16	24	43	14	26	48	1500 - 2000	79	0,025	200 000
WEICON SF	Epoxy resin steel-filled	putty, fast-curing	dark-grey	0,5 kg 2,0 kg	100	13	2,5	1	5	2,60	-35°C up to +90°C	3	6	70	14	21	22	2000 - 2500	85	0,030	800 000
WEICON WR	Epoxy resin steel-filled	liquid, wear resistant	black	0,5 kg 2,0 kg	100	15	2,8	1	45	2,30	-35°C up to +120°C	16	24	110	33	80	67	5000 - 5500	90	0,020	20 000
WEICON WR2	Epoxy resin mineral-filled	putty, wear resistant	dark-grey	0,5 kg 2,0 kg	100	25	3,5	1	45	1,67	-35°C up to +120°C	16	24	71	29	39	33	2500 - 3000	82	0,025	560 000
WEICON Ceramic BL	Epoxy resin mineral-filled	liquid, extremely wear resistant	blue	0,5 kg 2,0 kg	100*	10	5	1	20	1,90	-35°C up to +180°C	12	24	115	25	98	85	9000 - 9500	88	0,020	40 000
					100**	15	3,5	1	40	1,80	16	24	85	22	95	59	7000 - 8000	83	0,020	6 000	
WEICON Ceramic W	Epoxy resin mineral-filled	putty, extremely wear resistant	white	0,5 kg 2,0 kg	100	31	3,63	1	60	1,77	-35°C up to +150°C briefly 260°C	16	36	80	13	33	60	5800 - 6000	85	0,020	600 000
WEICON TI	Epoxy resin titanium-filled	putty, wear resistant	grey	0,5 kg 2,0 kg	100	25	4	1	60	2,26	-35°C up to +150°C	16	36	110	24	25	38	7000 - 8000	85	0,020	1 250 000
WEICON UW	Epoxy resin titanium-filled	putty, cures even under water	dark-grey	0,5 kg 2,0 kg	100	50	2	1	80	2,24	-35°C up to +120°C	16	36	80	25	31	25	4000 - 5000	85	0,020	1 300 000
WEICON ST	Epoxy resin stainless-steel-filled	putty, non corrosive	grey	0,5 kg 2,0 kg	100	40	2	1	30	2,00	-35°C up to +120°C	16	24	75	20	40	35	6000 - 7000	80	0,020	1 500 000
WEICON HB 300	Epoxy resin steel-filled	putty, high-temperature resistant	dark-grey	1,0 kg	100	100	1	1,3	30	2,34	-35°C up to +200°C briefly 280°C	12	24	100	72	90	57	9500 - 10000	85	0,015	1 700 000
WEICON Epoxy Resin Putty	Epoxy resin mineral-filled	putty, high-temperature resistant	green	0,4 kg 0,8 kg	100	100	1	1	30	2,00	-35°C up to +200°C	2	3	80	30	56	62	4000 - 6000	87	0,005	Paste
WEICON Casting Resin MS 1000	Epoxy resin unfilled	liquid	transparent, slightly yellowish	1,0 kg	100	20	4,5	1	20	1,10	-35°C up to +120°C	24	36	60	25	285	95	17000 - 18000	65	0,200	1 300
WEICON Flex Hardener for A,B,C,SF,F2,WR,WR2,MS 1000	Polyamino-amid	flexible, neutral to vibrations	colourless	0,23 kg					depend. on mixture min. 30 minutes	0,97	-35°C up to +95°C	depending on mixing ratio: from flexible (like a car tire) to rigid with high impact strength							800 (only hardener)		

*WEICON Ceramic BL is supplied with a standard hardener. **With slow hardener available on request.



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The ideal material for repair, maintenance, tool and mould making

Distributed by:

Ross Brown Sales Pty Ltd

ABN 28 000 690 362
21 Brookhollow Ave, Baulkham Hills NSW 2153
PO Box 6345, BHBC NSW 2153 Australia
Phone: 612 9899 2744 Fax: 612 9899 4233
Email: sales@rossbrownsales.com.au
Web: www.rossbrownsales.com.au



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