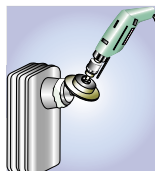
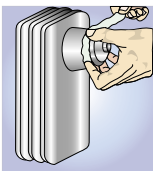




## Repair Sticks

- durable • versatile
- high strength





## WEICON Repair Sticks

The uncomplicated solution for all repair and maintenance work.

Easy to use:

**Cut off - knead - use**

Always the right portion, even for small repairs.

WEICON Repair Sticks are temperature resistant from  $-50^{\circ}\text{C}$  up to  $+120^{\circ}\text{C}$  (briefly up to  $+150^{\circ}\text{C}$ ).

They resist to alcohol, ester, salt water, oils, most acids and lyes, are free of solvents and cure with almost no shrinkage.

The cured product can be machined (drilled, filed, tapped) and overpainted without pre-treatment.

WEICON Repair Sticks bond:

- metal
- hard-plastics\*
- fibre-reinforced materials
- wood
- glass / ceramic / stone

For various applications there are seven different Repair Sticks to choose from.

\* Except for plastics such as polyethylene, polypropylene, polyacetal, polytetrafluoroethylene and other fluorinated hydrocarbons with naturally adhesive-rejecting surfaces.



### Repair Stick ST 115 Titanium

For permanent, high-temperature (briefly  $+300^{\circ}\text{C}$ ) and wear resistant repairs and bonds of metal parts.

Patches and seals cracks, holes, leakages and surface damages on:

- tanks and conduit pipes
- aluminium, light metal and diecast parts
- shafts, bearings, pumps and casings
- reconditioning of defective threads

Suitable as a universal repair compound for high-temperature use.

### Repair Stick ST 115 Steel

Preferably used for quick and high strength repairs and bonds of metal parts. Patches and seals cracks, holes, leakages and surface damages on:

- machine parts
- tanks and conduit pipes
- vessels, pumps and housings
- balcony grids
- stair railings
- stripped threads

Suitable as an universal repair compound in the whole D.I.Y. and household sector.



### Repair Stick ST 115 Aluminium

For quick non-rusting repairs and bonds of metal parts. Patches and seals cracks, holes, leakages and surface damages on:

- car bodies
- transmission casings
- window frames and profiles
- boats
- model making (e.g. trains, cars, etc.)

Suitable as an universal repair compound in the whole hobby and garden sector.

### Repair Stick ST 115 Copper

For very quick (pot life 3 min.) repairs of cracks, holes and leakages even on damp and wet surfaces such as:

- pipes and elbows
  - fittings and flanges
  - copper gutters and sheets
  - water heaters and water tanks
  - hot and cold water piping
  - refrigerating and air conditioning equipment
- and as a repair compound for the installation and maintenance sector.

## Repair Stick ST 115 Plastic

**New**

Especially for durable repairs of plastic parts\* and fibre reinforced materials (GFRP, CFRP, fibre glass) with residual elasticity as well as for bondings of metal parts.

- pipes and pipe elbows
- fittings and flanges
- water tanks
- window and door frames
- pumps and pump housings
- coverings and bumpers

\* except for plastics such as PE, PP, PTFE, etc.



## Repair Stick ST 115 Aqua

Ideal for quick repairs on damp and wet surfaces and for underwater applications.

Patches and seals cracks, holes, leakages and surface damages on:

- fuel and water tanks
  - radiators
  - electrical switchboards
  - sanitary installations
  - swimming pools
- and in the marine sector.

## Repair Stick ST 56 Wood

For permanent and elastic, non-shrink repairs of wooden parts. Patches cracks and bore holes, fills broken out or broken off wooden parts, seals gaps on:

- window and door frames
- veneers
- timber boards and planks
- model making (airplanes, ships, etc.)
- wooden toys

Suitable as an universal repair compound in the whole household and hobby sector.



## Type selection table

|                                                            | Titanium | Steel | Aluminium | Copper | Plastic | Aqua | Wood |
|------------------------------------------------------------|----------|-------|-----------|--------|---------|------|------|
| Metals (e.g. aluminium, cast iron, brass, stainless steel) | ++       | ++    | ++        | ++     | +       | ++   | +    |
| Hard plastics* (e.g. epoxy resin, rigid PVC)               | +        | +     | +         | +      | ++      | ++   | +    |
| Fibre-reinforced materials (e.g. GFRP, CFRP, fibreglass)   | +        | +     | +         | +      | ++      | +    | +    |
| Wood (e.g. oak, beech, spruce, balsa)                      | +        | +     | +         | +      | +       | +    | ++   |
| Derived timber products (e.g. plywood, MDF)                | +        | +     | +         | +      | +       | +    | ++   |
| Glass, ceramics                                            | +        | +     | +         | +      | +       | ++   | +    |
| Stone (e.g. marble, granite, brick, concrete)              | +        | +     | +         | +      | +       | ++   | +    |
| Rubber / elastomers                                        | -        | -     | -         | -      | -       | -    | -    |

(++) Highly suitable (+) Suitable (-) Not suitable

\* Except for plastics such as polyethylene, polypropylene, polyacetal, polytetrafluoroethylene and other fluorinated hydrocarbons with naturally adhesive-rejecting surfaces. Within the framework of the above type recommendations, bonding of dissimilar material pairs such as metals and plastics is also possible.

## Technical data

|                                                                                    |                                                           | WEICON Repair-Sticks in non-cured condition   |                               |                                   |                                |                                 |                                 |                                 |
|------------------------------------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------|-------------------------------|-----------------------------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Properties                                                                         | Product                                                   | Titanium                                      | Steel                         | Aluminium                         | Copper                         | Plastic                         | Aqua                            | Wood                            |
|                                                                                    | Basis:                                                    | Epoxy resin and titanium fillers              | Epoxy resin and steel fillers | Epoxy resin and aluminium fillers | Epoxy resin and copper fillers | Epoxy resin and plastic fillers | Epoxy resin and ceramic fillers | Epoxy resin and mineral fillers |
| Nature:                                                                            |                                                           | putty                                         |                               |                                   |                                |                                 |                                 |                                 |
| Supplied in:                                                                       |                                                           | Stick                                         |                               |                                   |                                |                                 |                                 |                                 |
| Contents:                                                                          |                                                           | 57 g / 115 g                                  | 57 g / 115 g                  | 57 g / 115 g                      | 57 g / 115 g                   | 57 g / 115 g                    | 57 g / 115 g                    | 28 g / 56 g                     |
| Mixing proportion by volume resin / hardener (automatically):                      |                                                           | 1 : 1                                         |                               |                                   |                                |                                 |                                 |                                 |
| Pot life with 25 g material and at +20°C (in minutes):                             |                                                           | 70                                            | 4                             | 4                                 | 3                              | 20                              | 15                              | 15                              |
| Density of the mixture (g/cm³):                                                    |                                                           | 1,9                                           | 2,0                           | 1,6                               | 1,9                            | 1,6                             | 1,9                             | 0,9                             |
| Temperature °C                                                                     | Processing *1:                                            | +10 to +50                                    | +10 to +35                    | +10 to +35                        | +10 to +30                     | +10 to +40                      | +10 to +40                      | +10 to +40                      |
|                                                                                    | Curing:                                                   | +6 to +65                                     | +6 to +40                     | +6 to +40                         | +6 to +40                      | +6 to +40                       | +6 to +40                       | +6 to +40                       |
| Colour after curing:                                                               |                                                           | grey-green                                    | dark-grey                     | aluminium                         | copper                         | light-blue                      | white                           | light beige                     |
| Gap covering power to maximum *2:                                                  |                                                           | 15 mm                                         |                               |                                   |                                |                                 |                                 |                                 |
| Cure time at +20°C                                                                 | Handling strength (35% strength) after:                   | 2 hours                                       | 10 min.                       | 10 min.                           | 10 min.                        | 40 min.                         | 30 min..                        | 45 min.                         |
|                                                                                    | Capable of bearing mechanical loads (50% strength) after: | 8 hours                                       | 60 min.                       | 60 min.                           | 60 min.                        | 3 hours                         | 60 min.                         | 60 min.                         |
|                                                                                    | Final strength (100%) after:                              | 72 hours (24 h at +65°C)                      | 24 hours                      | 24 hours                          | 24 hours                       | 36 hours                        | 24 hours                        | 24 hours                        |
|                                                                                    |                                                           | WEICON Repair-Sticks in fully-cured condition |                               |                                   |                                |                                 |                                 |                                 |
| Pressure (DIN 53281-83):                                                           |                                                           | 80 N/mm²                                      | 80 N/mm²                      | 80 N/mm²                          | 80 N/mm²                       | 65 N/mm²                        | 75 N/mm²                        | 75 N/mm²                        |
| Shore hardness D:                                                                  |                                                           | 80                                            | 75                            | 75                                | 80                             | 65                              | 65                              | 70                              |
| Average tensile shear strength after 7 days at +20°C in accordance with DIN 53283: |                                                           | Steel sandblasted                             | Steel sandblasted             | Aluminium sandblasted             | Copper sandblasted             | PVC roughened                   | Steel Sandblasted               | Beech sanded                    |
|                                                                                    |                                                           | 5,1 N/mm²                                     | 4,1 N/mm²                     | 4,2 N/mm²                         | 4,8 N/mm²                      | 2,4 N/mm²                       | 6,2 N/mm²                       | 6,2 N/mm²                       |
| Temperature resistance:                                                            |                                                           | -50 to +280 (briefly +300)                    | -50 to +120 (briefly +150)    |                                   |                                |                                 |                                 |                                 |
| Thermal conductivity (ASTM D 257):                                                 |                                                           | 0,50 W/m·K                                    | 0,60 W/m·K                    | 0,65 W/m·K                        | 0,70 W/m·K                     | 0,40 W/m·K                      | 0,50 W/m·K                      | 0,30 W/m·K                      |
| Linear shrinkage*3:                                                                |                                                           | 0,5 mm/m - approx. 0,05 %                     |                               |                                   |                                |                                 |                                 |                                 |
| Electrical resistance (ASTM D 257):                                                |                                                           | 5 · 10 <sup>11</sup> Ω/cm                     |                               |                                   |                                |                                 |                                 |                                 |
| Dielectric strength (ASTM D 149):                                                  |                                                           | 3,0 kV/mm                                     |                               |                                   |                                |                                 |                                 |                                 |
| Thermal expansion coefficient (ISO 11359):                                         |                                                           | 30-40 x 10 <sup>-6</sup> K <sup>-1</sup>      |                               |                                   |                                |                                 |                                 |                                 |

\*1 For easier workability when ambient temperatures are low, the sticks should be warmed up to room temperature (20°C) before application.

\*2 Max. 15 mm per procedure

\*3 Measured on a casting 900 x 75 x 10 mm after 7 days stored at +20°C.

## Instructions for use

To ensure a perfect bond, the surfaces to be joined must be clean and dry (e.g., clean and degrease using Cleaner S or Plastic Cleaner). Smooth surfaces should be roughened, e.g. by sandblasting.

WEICON Repair-Sticks cover gaps of max. 15 mm per procedure. The pot life given is for a material quantity of 25 g 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 and curing time). Temperatures below +16°C will extend working and curing times considerably, while below about +5°C, no reaction will take place at all.

## Physiological properties / health and safety at work

WEICON Repair Sticks, when properly handled and completely cured, are toxicologically essentially harmless. When using these adhesives, the physical, safety technical, toxicological and ecological data and regulations in our EC safety data sheets ([www.weicon.de](http://www.weicon.de)) must be observed.

## Storage

When kept at a constant room temperature of about +20°C and unopened in dry conditions, WEICON Repair Sticks will keep for at least 18 months. Avoid direct sunlight.

## Chemical resistance of WEICON Repair Sticks after curing \*

|                                           |   |                                                   |   |
|-------------------------------------------|---|---------------------------------------------------|---|
| Acetic acid dilute < 5%                   | + | Hydrocarbons, aliphatic (crude oil derivatives)   | + |
| Acetone                                   | 0 | Hydrocarbons, aromatic (benzene, toluene, xylene) | - |
| Alkalis (basic materials)                 | + | Hydrochloric acid < 10%                           | + |
| Amyl acetate                              | + | Hydrochloric acid 10 - 20%                        | + |
| Amyl alcohols                             | + | Hydrofluoric acid dilute                          | 0 |
| Anhydrous ammonia 25%                     | + | Hydrogen peroxide < 30% (hydrogen superoxide)     | + |
| Barium hydroxide                          | + | Impregnating oils                                 | + |
| Butyl acetate                             | + | Magnesium hydroxide                               | + |
| Butyl alcohol                             | + | Maleic acid (cis-butenedioic acid)                | + |
| Calcium hydroxide (slaked lime)           | + | Methanol (methyl alcohol) < 85%                   | 0 |
| Carbolic acid (phenol)                    | - | Milk of lime                                      | + |
| Carbon disulphide                         | + | Naphthalene                                       | - |
| Carbon tetrachloride (tetrachloromethane) | + | Naphthene                                         | - |
| Caustic potash solution                   | + | Nitric acid < 5%                                  | 0 |
| Chlorinated water                         | + | Oils, minerals                                    | + |
| Chloroacetic acid                         | - | Oils, vegetable and animal                        | + |
| Chloroform (trichloromethane)             | 0 | Oxalic acid < 25% (ethanedioic acid)              | + |
| Chlorosulphonic acid                      | - | Paraffin                                          | + |
| Chromic acid                              | + | Perchloroethylene                                 | 0 |
| Chroming baths                            | + | Petrol (92 - 100 octane)                          | + |
| Creosote oil                              | - | Phosphoric acid < 5%                              | + |
| Cresylic acid                             | - | Phthalic acid, phthalic acid anhydride            | + |
| Crude oil                                 | + | Potassium carbonate (potash solution)             | + |
| Crude oil and crude oil products          | + | Potassium hydroxide (caustic potash) 0-20%        | + |
| Diesel fuel oil                           | + | Soda lye                                          | + |
| Ethanol < 85% (ethyl alcohol)             | 0 | Sodium bicarbonate (sodium hydrogen carbonate)    | + |
| Ethyl alcohol                             | 0 | Sodium carbonate (soda)                           | + |
| Ethyl benzole                             | - | Sodium chloride (cooking salt)                    | + |
| Ethyl ether                               | + | Sodium hydroxide < 20% (caustic soda)             | 0 |
| Exhaust gases                             | + | Sulphur dioxide                                   | + |
| Formic acid > 10%                         | - | Sulphuric acid < 5%                               | 0 |
| Glycerine (trihydroxypropane)             | + | Tannic acid dilute < 7%                           | + |
| Glycol                                    | 0 | Tetralin (tetrahydronaphthalene)                  | 0 |
| Grease, oils and waxes                    | + | Toluene                                           | - |
| Heating oil, diesel                       | + | Trichloroethylene                                 | 0 |
| Humic acid                                | + | Turpentine substitute (white spirit)              | + |
| Hydrobromic acid < 10%                    | + | Xylene                                            | - |

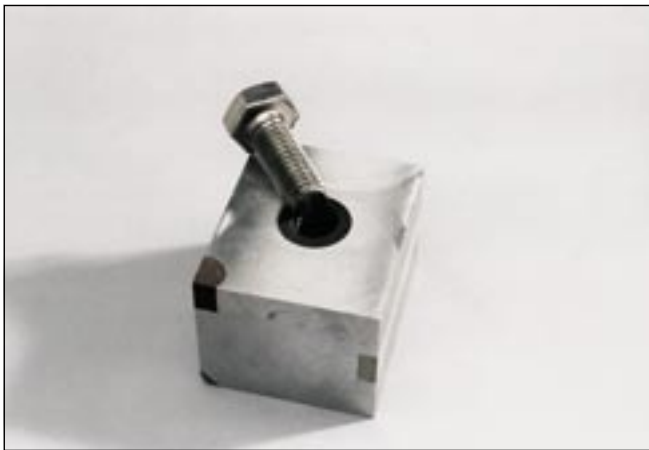
+ = resistant    0 = resistant for a limited time    - = not resistant

\* Storage of all WEICON Epoxy Adhesives was at +20°C chemical temperature

# Repair Sticks

- durable • versatile
- high strength

Distributed by:



Any product specifications and recommendations given herein 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 warrant the continuously high quality of our products being free from defects in accordance with and subject to our General Sales Conditions. However, our 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.