



WEICON Applications and Products

MINING, CEMENT & HEAVY MATERIAL HANDLING



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V 2:25

WHICH INDUSTRIES SEE PLANT COMPONENTS AND STRUCTURES SUFFER FROM EROSION, CORROSION, OR ABRASIVE MATERIAL PROCESSING?

Breweries and malthouses	Iron works / rolling mills
Cement and gravel works	Lime, sand, potash plants
Chemical & Petro-Chemical industry	Paper mills
Coal, ore mining, coking plants	Power stations
Concrete plants	Scrap utilisation plants
Gas works	Sugar factories
Glass works	Waste incineration plants
	Waste water / sewage

WHICH PLANT COMPONENTS OR STRUCTURES ARE AFFECTED BY EROSION, CORROSION, OR ABRASION?

Bucket Elevators	Nozzles
Bunkers or Underground Storage Bins	Mills
Chutes	Mixers
Classifiers	Pipelines
Containers, Vessels, Tanks	Pumps
Conveyor systems / Augers	Rotary Valves
Cyclones	Separator
Feed Hoppers	Silos
	Troughs (or Channels)

WHICH BULK-GOODS OR MATERIALS CAUSE HEAVY EROSION, CORROSION OR WEAR?

Ash	Mill scale (or Scale, in metallurgical contexts)
Cement	Lime
Chips (or Shavings)	Ores
Coal	Salts
Coke	Sand
Grain	Solids dissolved in liquids
Gravel	Sinter
Gypsum	Slag

Bonding a wheel and gearwheel in a gravel plant



DESCRIPTION:

- ▶ cleaning with WEICON Surface Cleaner
- ▶ high-alloy and hardened steels are bonded with WEICONLOCK AN 306-38 Retaining Cylindrical Assemblies, applied in a circumferential and full-surface bead



Surface Cleaner

- ▶ 150 ml ▶ 400 ml
- 10024317 10024313



AN 306-38

- ▶ 10 ml ▶ 20 ml
- 10030478 10016443
- ▶ 50 ml ▶ 200 ml
- 10017888 10020027



Advantages of our solution:

- ▶ high frictional connection with high radial and axial forces

Repair of conveyor belts in a quartz mine



DESCRIPTION:

- ▶ removing coarse dirt
- ▶ roughening and levelling the damaged areas with an angle grinder (rasp disc or cup wheel)
- ▶ cleaning the surface with WEICON Cleaner Spray S
- ▶ mixing and applying WEICON 1K Primer G with a paint brush
- ▶ allow WEICON 1K Primer G sufficient time to flash off
- ▶ depending on the container application of WEICON Urethane 85
- ▶ smoothing the surface with WEICON Contour Spatula Flex



Cleaner Spray S

- ▶ 500 ml
- 10000147



Belt Repair-Kit 550

- ▶ 500 g + 1K Primer G 50 g
- 10055014



Belt Repair-Kit 590

- ▶ 540 g + 1K Primer G 50 g
- 10052425



Dispenser 2C 10:1

- 10057514

VIDEO



Advantages of our solution:

- ▶ very cost-effective way to restore the functioning of the conveyor belts and thus extension of the service life
- ▶ versatile application possibilities

Mounting stoneware sewers with plastic pipes



DESCRIPTION:

- ▶ installation of a dosing system due to the large material consumption
- ▶ gap-filling and bonding with generous application of WEICON Flex 310 M® 2 K
- ▶ with this type of drum dosing system, the adhesive is mixed only in the mixing nozzle



Flex 310 M® 2 K

- ▶ 250 ml
- ▶ special mixing nozzle
- 10027733
- 10027692
- grey

Advantages of our solution:

- ▶ compared to other adhesives: elasticity, tolerance compensation, good sealing effect, high adhesive strength and curing independent of ambient conditions thanks to 2C system
- ▶ adhesive is only mixed in the mixing nozzle

Repair of stirring units in a gold mine



DESCRIPTION:

- ▶ abrasion on stirring units/ propellers caused by sand and stones
- ▶ sandblasting (SA 21/2) and cleaning with Cleaner Spray S
- ▶ reconditioning of the propeller blades by coating with WEICON WP
- ▶ 16 kilograms were used



Cleaner Spray S

- ▶ 500 ml
- ▶ 10000147



WEICON WP

- ▶ 0.2 kg
 - ▶ 2.0 kg
 - ▶ 10.0 kg
- 10054399 10032320 10032939

Advantages of our solution:

- ▶ restoring the efficiency of the stirring units
- ▶ durable abrasion protection for longer service life

Repairing the foundation of a conveyor system in a copper mine



DESCRIPTION:

- ▶ removing loose foundation parts
- ▶ creating formwork for the area to be repaired
- ▶ casting WEICON CBC into the formwork
- ▶ after curing: removing the formwork
- ▶ 1,700 kilograms WEICON CBC were used



WEICON CBC Chocking Backing Compound

- ▶ 0.5 kg
10064790
- ▶ 3.0 kg (2,0 l)
10045020
- ▶ 10.0 kg (6,6 l)
10032939

Advantages of our solution:

- ▶ increasing the safety and restoring the stability of the conveyor system

Gap compensation on a press plate in a quarry



DESCRIPTION:

- ▶ the support surface of a burst, 400kg heavy press plate did not show 100% force closure anymore
- ▶ previous solution: replacing the press plate every two months
- ▶ cleaning with WEICON Cleaner S
- ▶ generous application of WEICON HB 300 to the surface and fixings



Cleaner S

- | | |
|--------------------|--------------------|
| ▶ 1 L
10007611 | ▶ 5 L
10000347 |
| ▶ 10 L
10000348 | ▶ 28 L
10053455 |

Advantages of our solution:

- ▶ gap filling with WEICON HB 300
- ▶ avoiding having to replace the press plate
- ▶ cost savings of approx. 35,000 € – for the new press plates



WEICON HB 300

- | | | |
|----------------------|----------------------|----------------------|
| ▶ 0.2 kg
10004472 | ▶ 0.5 kg
10001084 | ▶ 1.0 kg
10000099 |
|----------------------|----------------------|----------------------|

Repair of a coal mill



DESCRIPTION:

- ▶ over the years, the coal granulate had left clearly visible traces
- ▶ pre-cleaning with WEICON Cleaner Spray S
- ▶ making an exact applicator/a gauge
- ▶ reconditioning and restoration of the sealing surface using WEICON WP and WEICON WR2
- ▶ application of an additional protective layer with WEICON Ceramic BL



Cleaner Spray S

▶ 500 ml
10000147



WEICON WP

▶ 0.2 kg ▶ 2.0 kg ▶ 10.0 kg
10054399 10032320 10032939



WEICON WR2

▶ 0.5 kg ▶ 2.0 kg
10000087 10000088



WEICON Ceramic BL

▶ 0.2 kg ▶ 0.5 kg ▶ 2.0 kg
10054394 10000093 10005233

Advantages of our solution:

- ▶ economic and simple repair
- ▶ no welding or exchange of parts necessary
- ▶ extension of the service life of the coal mill

Repair of a stone crusher plate in one of the largest quarries in the world

DESCRIPTION:

- ▶ heavy wear and distortion on the panels due to friction and vibration
- ▶ cleaning with WEICON Cleaner Spray S
- ▶ application of 50 kg WEICON WR on one panel
- ▶ total application of 400 kg WEICON WR on eight stone crusher plates

Cleaner Spray S

- ▶ 500 ml
10000147

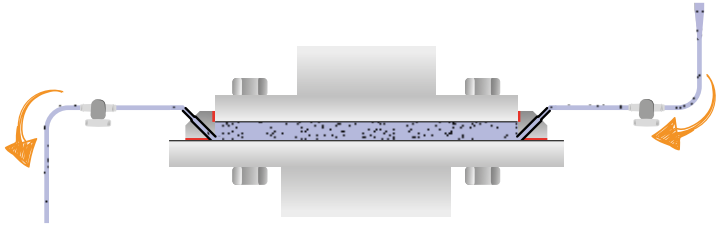
WEICON WR

- ▶ 0.2 kg
10054400
- ▶ 0.5 kg
10000077
- ▶ 2.0 kg
10000078

Advantages of our solution:

- ▶ perfect vibration and wear resistance
- ▶ high cost savings, as there is no need for complete replacement
- ▶ six-times longer service life
- ▶ fast, accurate, effective and long-lasting repair

Gap compensation on a crusher in a grinding mill



DESCRIPTION:

- ▶ treatment of the inner ring with WEICON Silicone Spray to enable later disassembly
- ▶ attachment of injection packers with WEICON Easy-Mix PU-90
- ▶ use of WEICON Repair Stick Steel to seal the gap before casting
- ▶ injection of WEICON WR with the aid of the WEICON Injection Packer Set
- ▶ wear within 4 months, repair 4 times a year, wear from 100 mm to 20 mm
- ▶ approx. 20 kg used for one repair

Advantages of our solution:

- ▶ precisely fitting, stable gap compensation
- ▶ smooth running of the mill ensured
- ▶ extension of the service life



Repair Stick Steel

- ▶ 57 g ▶ 115 g
- 10010241 10007705



Injection Packer Set

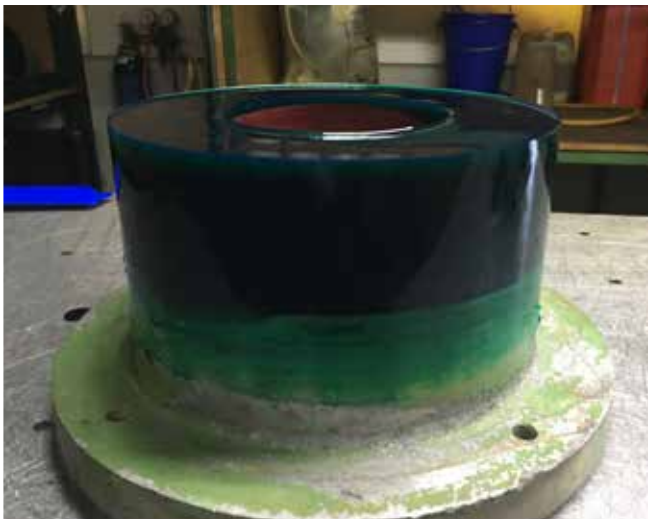
- ▶ System for gap compensation on bridges, pillars, machines, and plants.
- 10057667



WEICON WR

- ▶ 0.2 kg ▶ 0.5 kg ▶ 2.0 kg
- 10054400 10000077 10000078

Repair of a flange/sleeve in a gravel plant for fine sand extraction



DESCRIPTION:

- ▶ cleaning with WEICON Cleaner Spray S
- ▶ sandblasting (SA 2½)
- ▶ repeated cleaning with WEICON Cleaner Spray S
- ▶ wetting of the surfaces to be demoulded with WEICON Mould Release Agent liquid
- ▶ approx. 10 minutes flash-off time
- ▶ mixing of WEICON Urethane 80
- ▶ adding WEICON Colour Paste Black as required
- ▶ vacuum suction to avoid air bubbles
- ▶ pouring in the mixed WEICON Urethane 80
- ▶ heating the casting surface with a hot air gun to avoid air bubbles
- ▶ curing in the oven at approx. 60 °C for 24 hours
- ▶ use of compressed air to facilitate demoulding



Cleaner Spray S

- ▶ 500 ml
10000147

Mould Release Agent

- ▶ 400 ml
10000154



Urethane 80

- ▶ 500 g
10012368

VIDEO



Advantages of our solution:

- ▶ fast repair of the machine part
- ▶ avoiding a replacement of special components
- ▶ high cost saving

Repair of a conveyor belt



DESCRIPTION:

- ▶ cleaning with WEICON Cleaner Spray S
- ▶ application of WEICON 1K Primer G for optimum adhesion
- ▶ working WEICON Urethane 85 into the rubber surface of the conveyor belt with WEICON Contour Spatula Flexy



Cleaner Spray S

▶ 500 ml
10000147



Belt Repair-Kit

10052425

VIDEO



Advantages of our solution:

- ▶ replacing the conveyor belt and complex vulcanisation not necessary
- ▶ fast and easy repair
- ▶ significant extension of the service life of the conveyor belt



Repair of rubber pipelines in gravel plant



DESCRIPTION:

- ▶ The pumping of sand causes erosion and cracks on the surface of the rubberised joints and connectors
- ▶ Previous solutions such as hot welding, pouring rubber or attaching patches with glue were insufficient, and consequently the parts had to be purchased anew
- ▶ Cleaning of larger holes and cracks with WEICON Cleaner Spray S, treatment with WEICON 1K Primer G
- ▶ Followed by filling with WEICON Urethane 85
- ▶ Outer protective layer with WEICON Urethane 80 and for reinforcement insert with Paracord



Cleaner Spray S

- ▶ 500 ml
- ▶ 10000147



WEICON Urethane 80

- ▶ 500 g
- ▶ 10012368



WEICON Urethane 85

- ▶ 500 g Work package
- ▶ 540 g Cartridge
- ▶ 10057130
- ▶ 10057188

Advantages of our solution:

- ▶ extension of service life from 500 to 1200 hours
- ▶ cost-effective repair and maintenance

Impeller repair in a cement factory



DESCRIPTION:

- ▶ the raw material had become deeply ingrained in the impeller blades
- ▶ the impeller had a total of 14 blades that needed to be repaired
- ▶ the surface was mechanically cleaned and sanded
- ▶ it was cleaned with WEICON Cleaner Spray S
- ▶ this primer (bonding agent) was used: WEICON HP
- ▶ filling material: WEICON WPN
- ▶ top coat (smoothing layer): WEICON Ceramic HC 220
- ▶ for the success of the repair, it was essential that the surface be as smooth as possible
- ▶ all three products were applied wet-on-wet (pay attention to the layer curing times)
- ▶ after the repair was completed, the impeller had to be balanced



Cleaner Spray S

- ▶ 500 ml
- ▶ 10000147



WEICON HP

- ▶ 0.2 kg 10054393
- ▶ 0.5 kg 10054003
- ▶ 2.0 kg 10054004



WEICON WPN

- ▶ 2.0 kg 10056868
- ▶ 13,62 kg 10050041



WEICON Ceramic HC 220

- ▶ 0.2 kg 10060702
- ▶ 0.5 kg 10060705
- ▶ 2.0 kg 10060707



Advantages of our solution:

- ▶ optimised maintenance

Coating of a cyclone in the mining industry



DESCRIPTION:

- ▶ Mechanical cleaning, substrate pre-treatment, cleaning with WEICON Cleaner Spray S
- ▶ Application of adhesive layer with WEICON HP
- ▶ After curing, application of a second coat with WEICON WP
- ▶ Embedding of 3 mm ceramic balls into the still wet surface
- ▶ After curing, final sealing with WEICON HP
- ▶ Abrasion protection coating against limestone particles of 3 to 4 mm in size



Cleaner Spray S

- ▶ 500 ml
10000147



WEICON HP

- ▶ 0.2 kg
10054393
- ▶ 0.5 kg
10054003
- ▶ 2.0 kg
10054004



WEICON WP

- ▶ 0.2 kg
10054399
- ▶ 2.0 kg
10032320
- ▶ 10.0 kg
10032939

Advantages of our solution:

- ▶ protection against abrasion
- ▶ extension of service life
- ▶ no expensive purchase of new parts necessary

Interior coating of the cladding of a bucket elevator in a salt mine



DESCRIPTION:

- ▶ more than 120 m² of steel surface were coated using the spray method with 120 kg of WEICON GL-S and WEICON Ceramic HC 220
- ▶ in the bucket elevator, salt is transported upwards over six levels
- ▶ the interior of the bucket elevator is lined with steel sheets, which had been corroded by salt dust due to a simple paint coating inside
- ▶ cleaning with WEICON Cleaner Spray S after sandblasting
- ▶ the resin component was heated to approx. 50 °C before mixing
- ▶ application of a layer of WEICON GL-S
- ▶ application of a layer of WEICON Ceramic HC 220
- ▶ search for possible defects, followed by inspection of the layer thickness



Cleaner Spray S

- ▶ 500 ml
- ▶ 10000147



WEICON GL-S

- ▶ 0.2 kg 10060361
- ▶ 0.5 kg 10060362
- ▶ 2.0 kg 10060363



WEICON Ceramic HC 220

- ▶ 0.2 kg 10060702
- ▶ 0.5 kg 10060705
- ▶ 2.0 kg 10060707

Advantages of our solution:

- ▶ increases the intervals between service maintenance
- ▶ the condition of the coating is visible through the control layer (first layer), improving maintenance monitoring

Filling the gap on a rotor shaft in a gravel washing plant



DESCRIPTION:

- ▶ a 4 mm gap between the inner and outer shaft needed to be filled with WEICON WR, without air inclusions, to increase the shaft stability
- ▶ at intervals of one metre, threaded holes towards the gap were drilled in order to attach a hose with valve to them
- ▶ WEICON WR was pressed through the hose into the gap, until the top drill hole was reached
- ▶ after 24 hours, WEICON WR had completely cured



WEICON WR

- | | | |
|----------|----------|----------|
| ▶ 0.2 kg | ▶ 0.5 kg | ▶ 2.0 kg |
| 10054400 | 10000077 | 10000078 |

Advantages of our solution:

- ▶ no need to purchase an expensive new component for the system
- ▶ can be produced directly in the workshop

VIDEO



Maintenance work on the outlet base plate of a hopper in a mine



DESCRIPTION:

- ▶ sandblasting, then removal of sandblasting residues (dust)
- ▶ cleaning the surface (using WEICON Cleaner S, WEICON Surface Cleaner)
- ▶ application of wear protection WEICON WP
- ▶ use of PE foil to compress and smooth out the surface



Cleaner Spray S

- ▶ 500 ml
- 10000147



Surface Cleaner

- ▶ 150 ml
- ▶ 400 ml
- 10024317
- 10024313

Advantages of our solution:

- ▶ maintenance period extended from three to a minimum of six months, effectively doubling the service interval
- ▶ the plate can be recoated once the wear protection layer has worn away
- ▶ protects the base material
- ▶ reduces system downtime



WEICON WP

- ▶ 0.2 kg
- ▶ 2.0 kg
- ▶ 10.0 kg
- 10054399
- 10032320
- 10032939

Repair/coating of a gravel hopper in a concrete plant



DESCRIPTION:

- ▶ A heavily used bucket needed repairing
- ▶ Many years ago, the bucket was equipped with PU wear protection mats all around
- ▶ Over time, the mats have loosened, sand moisture and grit have infiltrated the mats and loosened them from the material support
- ▶ Preparation: Area calculation approx. 11.22 cm³ / approx. 1.4 m², marking, removal of damaged material
- ▶ Pre-treatment of the substrate: rust removal with Bristle Blaster, then cleaning with WEICON Industrial Cleaner
- ▶ Final cleaning with WEICON Industrial Cleaner
- ▶ Application of WEICON WR2 over a wide area
- ▶ After the drying phase, coating with WEICON Ceramic BL



Industrial Cleaner

- ▶ 500 ml
10055297



WEICON WR2

- ▶ 0.2 kg
10054401
- ▶ 0.5 kg
10000087
- ▶ 2.0 kg
10000088



WEICON Ceramic BL

- ▶ 0.2 kg
10054394
- ▶ 0.5 kg
10000093
- ▶ 2.0 kg
10005233

Advantages of our solution:

- ▶ low-cost permanent repair

Repair of a centrifugal separator in a concrete plant



DESCRIPTION:

- ▶ the polyurethane coating of the centrifugal separator had been damaged over time by conveying gravel and sand
- ▶ cleaning with WEICON Cleaner S
- ▶ application of WEICON 1K Primer G and flash-off time of approx. 30 minutes
- ▶ mixing of WEICON Urethane 85 resin and hardener thoroughly without air bubbles
- ▶ filling the damaged areas with WEICON Urethane 85
- ▶ application of WEICON Urethane 85 with WEICON Contour Spatula Flexy and paint brush and subsequent smoothing out



Cleaner Spray S

- ▶ 500 ml
- 10000147



Urethane 85

- ▶ 500 g
- ▶ 540 g
- 10057130
- 10057188
- Work Package
- Cartridge



1K Primer G

- ▶ 50 g
- 10104191

Advantages of our solution:

- ▶ fast and easy repair
- ▶ very good wear protection
- ▶ complete renewal of the polyurethane coating could be avoided
- ▶ high cost and time savings
- ▶ low material input (1 kg WEICON Urethane 85)

Repair of a damaged area on the conveyor belt of a bucket elevator in the cement industry



DESCRIPTION:

- ▶ removing coarse rubber residues from the damaged area
- ▶ roughening the repair area with abrasive cloth
- ▶ cleaning with WEICON Cleaner Spray S
- ▶ application of WEICON 1K Primer G
- ▶ application of WEICON Urethane 85



Cleaner Spray S

- ▶ 500 ml
- 10000147



Urethane 85

- ▶ 500 g
- ▶ 540 g
- 10057130
- 10057188
- Work Package
- Cartridge



1K Primer G

- ▶ 50 g
- 10104191

Advantages of our solution:

- ▶ ropes in the conveyor belt are protected against corrosion
- ▶ extension of the service life

Coating of rotary valve in a cement plant



DESCRIPTION:

- ▶ a mineral material is conveyed, which causes strong adhesion to the rotary valve and the scraper
- ▶ the stainless steel components (approx. 3.5 m²) were sandblasted, heated with a fan heater and then coated with a 2-layer system of WEICON Anti-Stick
- ▶ the use of WEICON Anti-Stick is intended to extend the service life



WEICON Anti-Stick

- | | | |
|----------|----------|----------|
| ▶ 0.2 kg | ▶ 0.5 kg | ▶ 2.0 kg |
| 10062938 | 10062940 | 10062941 |

Advantages of our solution:

- ▶ longer service life
- ▶ protection of the base material
- ▶ efficient performance



Repair and protection of a screw conveyor in a copper mine



DESCRIPTION:

- ▶ in copper mines, screw conveyors are used to transport ores and other materials. Particularly useful when the materials are fine-grained, powdery or loose. These materials are highly corrosive
- ▶ due to abrasion and wear, the blades lost up to 20 mm of metal
- ▶ the surface was roughened with a grinder to remove the protective paint and roughen the surface
- ▶ first, a layer of WEICON HP was applied as a primer
- ▶ then, a layer of WEICON WP was added “wet-on-wet” and compacted to make the surface as smooth as possible
- ▶ as a surface finish for visual inspection WEICON GL-S was added on one of the screws



Cleaner Spray S

- ▶ 500 ml
- ▶ 10000147



WEICON HP

- ▶ 0.2 kg
- ▶ 0.5 kg
- ▶ 2.0 kg
- ▶ 10054393
- ▶ 10054003
- ▶ 10054004



WEICON WP

- ▶ 0.2 kg
- ▶ 2.0 kg
- ▶ 10.0 kg
- ▶ 10054399
- ▶ 10032320
- ▶ 10032939



WEICON GL-S

- ▶ 0.2 kg
- ▶ 0.5 kg
- ▶ 2.0 kg
- ▶ 10060361
- ▶ 10060362
- ▶ 10060363



Advantages of our solution:

- ▶ very good wear protection
- ▶ cost-effective repair and maintenance
- ▶ fast and reliable repair solution reducing down time considerably

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Art.-No. 10104484

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