

# HARDFACING



STICK ELECTRODE

### Kobatek 512

CrMoV-alloyed hardfacing electrode resistant against high pressure and impact combined with abrasion including metal-metal friction. It is used on steels, alloy steels and carbon manganese steel base metals. The weld deposit is one of the most universal alloys in hardfacing applications and can also be applied on austenitic manganese steels. Very good weld deposit appearance and outstanding welding properties on both AC and DC+. Preheating is not required. Can be applied 3 layers over.

DC - ; AC  
 · Ø3.2x350 mm: 140-160 A  
 · Ø4.0x350 mm: 220-230 A



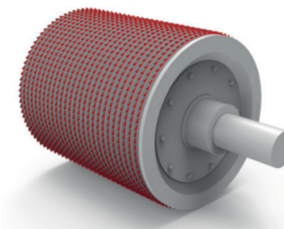
Hardness: 50-55 HRC

- Chipper rotors
- Screw conveyers
- Cold cutting tools
- Crusher hammers
- Cold pressing tools
- Excavator parts
- Mixing arms
- Drill bits
- Breaker bars
- Buckets and loaders
- Gyrotory crusher cones
- Dredge pump impellers
- Slideways and guide rails
- Excavator buckets

### Kobatek 574

Kobatek 574-Sugar is a high-efficiency coated electrode specifically developed for hardfacing applications on sugar mill rolls in the sugar cane industry and universally applicable on parts predominantly subject to grinding abrasion combined with low impact. Kobatek 574-Sugar has excellent welding properties and the molten metal flow is easily controlled due to the missing slag formation and homogenous droplet transfer in the spray arc. In general there is no need for any finishing by grinding.

DC + ; AC  
 · Ø2.5x350 mm: 150-120 A  
 · Ø3.2x350 mm: 140-170 A  
 · Ø4.0x350 mm: 180-250 A



Hardness: 60 HRC\*

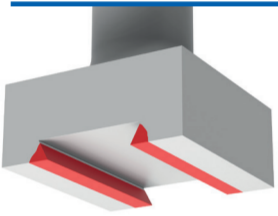
(\* pure weld metal)

- Hardfacing applications on sugar mill rolls in the sugar cane industry
- Conveyor screws
- Digging teeth
- Scraper blades
- Sand pumps
- Mixer wings

### Kobatek 520

DC electrode specially designed for low-alloyed steels with a tensile strength up to 900 N/mm<sup>2</sup> and the reclamation of the parts subjected to metal-to-metal friction under high pressure. The readily machinable deposit gives an alloy steel providing high mechanical properties and can be heat treated. It is also suitable for applications where resistance to deformation during service is required for maximum operational life.

DC + ; AC  
 · Ø3.2x350 mm: 90-120 A  
 · Ø4.0x350 mm: 110-150 A



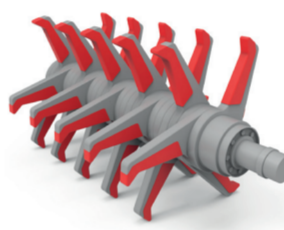
Yield Strength: 76 - 80 kg/mm<sup>2</sup>  
 Tensile Strength: 92 - 96 kg/mm<sup>2</sup>  
 Elongation (L=5d): 12 - 16%  
 Hardness: 300 - 360 HB

- Rollers
- Forging and forming dies
- Shafts
- Anvil dies
- Anvil guides of power hammer
- Excavator parts
- Hammers
- Pulleys
- Table rollers
- Turbine blades
- Cushion layers before hardfacing applications
- Flywheels

### Kobatek 576

Kobatek 576 is a high efficiency hardfacing electrode with high content of chromium carbide and boron carbide. The weld metal offers excellent abrasion resistance at high temperature up to 500°C and erosion resistance to the fine mineral particles in gas media. Coal mines, cement industry and iron and steel works are the most frequently used sectors of this product. In order to minimize the cracking risk, the part must be heated to at least 500°C before welding and should be cooled slowly after welding.

DC - ; + AC  
 · Ø3.2x350 mm: 120-160 A  
 · Ø4.0x450 mm: 150-190 A  
 · Ø5.0x450 mm: 200-250 A



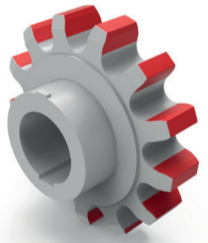
Hardness: 66 - 70 HRC

- Sinter crusher bars
- Mixer paddles
- Clod breakers
- Extrusion screw segments
- Ash plows
- Agglomeration and exhaust fans and valves
- Slag ladles
- Screens working in hot environment
- Tong bits
- Rake teeth in furnace
- Mixer screws and heads in the ceramics industry

### Kobatek 550

Kobatek 550 deposits medium carbon and CrMo alloyed hard-surfacing weld metal wear-resistant under conditions of high pressure and impact combined with mild abrasion. It is particularly suited for surfacing cold cutting tools and for re-building hard manganese steels. Weld deposit is air-hardening, non-mechinable and can resist plastic deformation without cracking. It is suitable for protective overlays on steels including plain carbon steels, carbon manganese steels, low alloy steels and also for welding of cementation steels.

DC + ; AC  
 · Ø2.5x350 mm: 60-80 A  
 · Ø3.2x350 mm: 90-130 A  
 · Ø4.0x350 mm: 120-160 A



Hardness: 54 - 60 HRC  
 28 - 32 HRC (80°C softening)  
 58 - 62 HRC (950°C hardening)  
 56 - 58 HRC (190°C tempering)

- Earth moving equipment
- Dragline bucket tooth
- Sprockets
- Farming machinery
- Bucket lips
- Bulldozer/scrapper blades
- Concrete mixers
- Conveyors
- Stamping dies
- Crusher jaws and hammers
- Plough shaves, pulping knives
- Tractor pads and rollers
- Gravel pump housing

### Kobatek 578

Kobatek 578 is high chromium-carbide hardfacing electrode. It has been designed to withstand high abrasive wear under pressure, combined with medium impacts which are specially caused by coarse sand and hard minerals. For overlaying carbon steels, low alloy steels and 12% austenitic manganese steels, it produces very thick deposits and so only one pass is usually required for most applications. Weld deposit is smooth, of good shape and with little or no slag residues. Deposits may check crack to relieve stresses but this will not adversely affect weld adhesion or wear characteristics. Can be machined only by grinding.

DC - ; AC  
 · Ø3.2x350 mm: 150-170 A  
 · Ø4.0x450 mm: 190-220 A



Hardness: 60 - 63 HRC\*

(\* Only one layer is recommended)

- Mixer blades
- Scrapper blades and mixers
- Dragline buckets (lips, points, cutting edges, teeth)
- Screw conveyors
- Wearing strips
- Edge runners and chutes
- Moulding screen segments
- Sludge pumps
- Conveyor chains
- Guide plates
- Fan blades
- Clinker chains

### Kobatek 551

Kobatek 551 is a 150% high recovery rutile coated electrode used for maintenance and repair welding of 12-15% Cr, 4% Ni containing ferritic Cr-steels and cast steels. It is also suitable of joining equal and similar ferritic Cr-steels. Weld metal exhibits high corrosion resistance to water, vapor and salt water. Apart from corrosion resistance, it also has a good capability in protecting against cavitation and erosion. It provides high welding performance on steels difficult to weld. Weld metal gives high resistance against pitting problem which is frequently encountered in gears.

DC +  
 · Ø3.2x350 mm: 90-140 A  
 · Ø4.0x350 mm: 140-170 A



Hardness: 42 - 46 HRC\*

(\* as welded)

- Continuous-cast rolls
- Steels and castings used for hydraulic turbines
- Water turbines rotors and compressor parts
- Repair welding of cracks in machine bodies
- Wear parts
- Erosive and corrosive attacks caused by sea water
- Valve bodies used in gas, steam and water fittings
- Buffer layers

### Kobatek 600B

Kobatek 600B is basic coated hardfacing electrode and provides high resistance to abrasion, metal-to-metal friction and cracking combined with impact. The weld metal has high toughness and is used for hardfacing of alloyed and non-alloyed steels. The best abrasion resistance is achieved by applying multipass welding applications. Thanks to its "Cr" content, the filler metal is resistant to non-dense corrosive effects. Weld deposit maintains its hardness up to 500°C. The risk of porosity and crack formation in the weld bead is very low. Can be machined only by grinding.

DC + ; AC  
 · Ø3.2x350 mm: 110-140 A  
 · Ø4.0x450 mm: 150-190 A  
 · Ø5.0x450 mm: 180-240 A



Hardness: 54 - 58 HRC\*

(\* Softening : Slow cooling in furnace at 850°C  
 Hardening : Air or oil cooling at 950 - 1000°C

- Upcut shears
- Hammer crushers and jaw crushers
- Cement pump screws
- Screw conveyors
- Cone crushers
- Mixers
- Bucket lips and teeth
- Rollers
- Drillers and scrapers
- Cutting edges of cold work tool steels
- Excavator blades
- Die casting moulds

### Kobatek 563

Kobatek 563 is CrMoW and V alloyed hardfacing electrode. It gives a weld metal with high resistance against impact and pressure, that maintains its hardness at operating temperatures up to 500°C. Thanks to the precisely adjusted combination of the Cr-Mo-W and V alloying elements, the weld metal exhibits a significantly higher wear resistance than the base metal. Technical and mechanical properties can be changed by heat treatment. It is also possible to weld hard or hardened metals by applying low preheating temperatures.

DC + ; AC  
 · Ø2.5x350 mm: 70-100 A  
 · Ø3.2x350 mm: 110-140 A  
 · Ø4.0x350 mm: 150-180 A



Hardness: 57 - 60 HRC  
 65 - 62 HRC (double tempering)

- Cold shear blades cutting edges
- Injection molds
- Manufacturing of machining tools
- Profile and slab cutting edges
- Cold drawing dies
- Punch
- Scrap choppers
- Turning tools and tool holders
- Die casting moulds

