

## EWAC HF 001

- Dense and spatter-free deposit.
- Resists high abrasion.
- Rapid deposition.
- All position.

### Typical Applications:

Pulverisers, skids, cement grinder rings, mill hammers, bucket teeth, excavator parts, screws, mixers scrapers.

### Typical Deposit Characteristics:

Hardness .....55-61 HRC

## EWAC HF 002

- Excellent resistance to abrasion. Smooth bead appearance.
- High resistance to erosion.
- Superior weldability with single layer hardness.

### Typical Applications:

Jaw crusher plate, excavator bucket, lips, teeth, fan blades, hammers, scrapper, augers, pulveriser.

### Typical Deposit Characteristics:

Hardness ..... 60-68 HRC (3 layers)

## EWAC HF 003

- Superior abrasion & moderate Impact resistance.
- Frigid arc coating with superior weldability.
- Smooth, ripple free beads.
- Excellent resistance to erosion.

### Typical Applications:

Augers, screw conveyors, scrapers, paddles, wear pads, impactor bar, pusher shoes, impeller.

### Typical Deposit Characteristics:

Hardness ..... 55-61 HRC (3 layers)

## EWAC HF 004

- High resistance to wear from combined, abrasion, pressure and moderate impact.
- Easy handling, rapid deposition rate, very thin slag.
- Thick single pass deposits with extra high yield.

### Typical Applications:

Reclaimer bucket, stacker bucket, dragline buckets, lips, tooth points, cutting edges, scraper blades, crushing hammers, conveyor chains mixer blades, sludge pump.

### Typical Deposit Characteristics:

Hardness ..... 62-68 HRC (2 layers)

## EWAC BU 101

- Deposits have high compressive strength.
- An alloy for protective coating on all ferrous metals.
- High toughness and resistance to deformation Rapid deposition in all positions.

### Typical Applications:

For built-up prior to hard facing for mill pinions, slide ways, hammers, wobblers, excavators, sprockets, rollers, shaft and gear teeth.

### Typical Deposit Characteristics:

Hardness ..... 25-35 HRC (3 layers)

## EWAC BU 102

- Tough overlay on manganese steel and alloy steel.
- For severe impact, shock and hammering applications.
- Frigid arc coating for lowest possible amperage.
- Work hardens in service.

### Typical Applications:

Crusher hammer, wobblers, frogs, sprockets, bucket teeth, wear parts, shovel track pads, under carriage components, scraper blades.

### Typical Deposit Characteristics:

Hardness  
As deposited ..... 80-90 HRB (3 layers)  
Work Hardened .....35-45 HRC

## EWAC BU 103

- High 'as-deposited' hardness.
- Work-hardens rapidly in service.
- Excellent crack resistance by absorption of internal stresses.
- Excellent ac/dc weldability and handling features.

### Typical Applications:

Track rollers, hydraulic turbines, crusher hammers, overhead gantry tracks, drive sprocket wheels, conveyor rolls, crossings and points, cushion layer applications prior to final hardfacing.

### Typical Deposit Characteristics:

Hardness  
As deposited ..... 15-25 HRB (3 layers)  
Work Hardened .....35-45 HRC

## EWAC BU 104

- Excellent resistance to impact and scoring.
- High work hardening rates. Excellent operating characteristics with fast deposition rate.
- Excellent crack resistance.

### Typical Deposit Characteristics:

Hardness  
As deposited .....80-90 HRB  
Work harden ..... 25-34 HRC (3 layers)  
Tensile Strength.....610 MPa (88,000 psi)

### Typical Applications:

For joining: under carriage parts, sprockets, ripper shanks. For Build-up: Gear teeth, Impactors, sprockets, trencher teeth, bucket teeth, hammers, augers, under carriage components, scrapper blades, crusher jaws.

## EWAC O-512

EWAC O-512 is a high-performance metal cored selfshielded wire alloy for automatic or semi-automatic hardfacing of carbon steel, low alloy steels and austenitic manganese steel. This alloy is designed with refractory carbide forming elements to withstand abrasion, erosion and corrosion at elevated temperatures.

### Typical Applications:

Sinter handling equipment, coke pusher shoes, clinker conveyer chains, hot slag conveyers, billet conveyer guide, mixer blades etc.

### Typical Deposit Characteristics:

Bulk Hardness .....60-66 HRC  
Carbides - Microhardness.....1200-1900 HV  
Matrix - Microhardness .....600-800 HV

## EWAC O-516

EWAC O-516 is a self-shielded metal cored wire designed for protection of wide range of components against abrasion and erosion at elevated temperatures. Recommended for all types of base materials such as carbon steels, low alloy steels and 14% manganese steels.

### Typical Applications:

Components handling sand, rocks, coal / coke particles, pneumatic conveyer systems, mixer blades, pump impellers, conveyor chutes, concrete mixers, asphalt handling etc.

### Typical Deposit Characteristics:

Hardness .....60-66 HRC

## EWAC O-517

- High resistance to impact, pressure & abrasion.
- Ideal for thick, multi-pass, protective coatings.
- Finely dispersed titanium carbides in tool steel type weld microstructure.

### Typical Applications:

For multi-pass intermediate layers and anti-wear coating on roller press rolls, crushers, tie tamping tools, cane knives, shredders, shovel buckets, augers & scraper blades etc.

### Typical Deposit Characteristics:

Hardness .....52-58 HRC

## EWAC O-521

- HiDeposits with superior toughness, crack resistance and impact resistance.
- High alloy deposit gives exceptional mechanical strength and corrosion resistance.
- High deposition rate.
- Easily machinable deposits.

### Typical Applications:

For repair and joining applications on "difficult" steels, low and high alloy steels and manganese steels. Also, suitable for use as intermediate or cushion layers below wear resistant weld overlay.

### Typical Deposit Characteristics:

Tensile Strength..... 65 kg/mm<sup>2</sup> (92,000 psi)

## EWAC O-540

- Optimum crack resistance.
- Excellent impact and abrasion resistance.
- Versatile joining and cushion layer for any protective coating.
- Work hardens in service.

### Typical Applications:

Track pads, crusher hammer, blow bars, bucket, track roller etc.

### Typical Deposit Characteristics:

Hardness:  
As deposited ..... 16-22 HRC (3 layers)  
Work Hardened ..... 35-45 HRC (3 layers)

## EWAC O-545

EWAC O-545 is a self-shielded metal cored alloy wire for wear-protective coatings on carbon steels, low alloy steels and 14% manganese steels. This is an iron chromium-carbon alloy system containing alloying elements such as Mo, Ni & B, which enhances service temperature of this alloy up to 450°C.

### Typical Applications:

Guide vanes, louver plates, nozzle ring segments, screws, fan impellers screens, sinter stars and grizzly bars, mixer blades, pump impellers, excavator bucket teeth, conveyor chutes etc.

### Typical Deposit Characteristics:

Bulk Hardness .....59-64 HRC  
Micro-Hardness:  
Carbides .....1150-1550 HV  
Matrix.....550-750 HV

## EWAC O-570

- Excellent resistance to grinding abrasion moderate impact.
- Low & medium carbon & alloy steels, Mn Steels.

### Typical Applications:

Excavator teeths, dredger buckets, scrapper bars crushers.

### Typical Deposit Characteristics:

Hardness .....52-60 HRC

## EWAC O-52B

- Good resistance to compression and plastic deformation.
- Multi-pass deposit capability.
- Resists plastic deformation, metal to metal wear.
- Low & medium carbon steels.

### Typical Applications:

Pinion, trac pads, stacker wheel, guide rolls.

### Typical Deposit Characteristics:

Hardness .....25-35 HRC

## EWAC O-564

- High resistance to pressure & impact.
- Low & medium carbon & alloy steels, Mn Steels, dissimilar steel.

### Typical Deposit Characteristics:

Hardness:  
Welded .....85-90 HRB  
Service.....25-35 HRC

## EWAC O-600

- Rapid deposition rate. No slag.
- Superior wear resistance.
- High hardness.
- High resistance to grinding abrasion.

### Typical Applications:

Coal mill crusher hammers, table liners, rolls and roller liners in cement plants as well as thermal power stations.

### Typical Deposit Characteristics:

Hardness .....56-62 HRC

## EWAC O-606

Low & medium carbon & alloy steels, Mn Steels.  
Excellent abrasion resistance.

### Typical Applications:

Scraper blades, crusher hammers, pug mill screws.

### Typical Deposit Characteristics:

Hardness .....56-62 HRC

## EWAC O-610

EWAC O-610 is an iron-based hardfacing alloy containing chromium, carbon, boron and other alloying elements. It is designed in the form of self-shielded metal-cored continuous wire for hardfacing parts, which are subjected to severe abrasive wear and moderate impact up to 350°C. Ideal for manufacturing of ready-to-use clad plates.

- Iron based chromium carbide alloy micro-alloyed with Nb and B.
- Balanced microstructure with primary and secondary carbides.
- Excellent resistance to sliding abrasive wear.
- Highly suitable for manufacturing of wear plates.

### Typical Applications:

For wear protection of parts in all major industries such as cement, steel, mining, gravel, earth moving etc. Wear resistance plates, Shovel buckets, loader bucket, dozer blades, dumper body, chutes, hoppers, bins, mixer arms, scraper blades, conveyor screws, louvers, cyclones etc.

### Typical Deposit Characteristics:

Bulk Hardness ..... 58-64 HRC (depending on thickness)  
Carbides - Microhardness.....1050-1450 HV  
Matrix - Microhardness .....550-750 HV

## EWAC O-630

- Low & medium carbon & alloy steels, Mn Steels.
- Single layer hardness & highest abrasion resistance.

### Typical Applications:

Augers, press screws, mixer blades, scrapers.

### Typical Deposit Characteristics:

Hardness .....62-68 HRC

## EWAC O-6436

EWAC O-6436 is a self-shielded metal cored wire specially designed for manufacturing of wear plates and protection of components against abrasion combined with compression especially on carbon steels, low alloy steels and 14% manganese steels.

### Typical Applications:

Wear resistance plates, scraper blades, cement conveyor screws, bucket shovel teeth and edges, conveyor chutes, mixer arms,

crusher hammers, pug mill screws, etc.

### Typical Deposit Characteristics:

Bulk Hardness .....58-63 HRC  
Micro-Hardness  
Carbides .....950-1350 HV  
Matrix.....500-650 HV

## EWAC 001 P

- Retains high hardness at elevated temperature.
- Resists galling, scoring and seizing.
- Excellent weldability. Non magnetic
- Exceptionally dense, smooth finish.

### Typical Applications:

Cams, screws, ceramic die cutters, fan blades, patterns, dies tools.

### Typical Deposit Characteristics:

Hardness .....55-62 HRC

## EWAC 003 P

- Superior toughness.
- Unlimited build-up capability.
- Good weldability.
- Excellent machinability with carbide tools.
- Low coefficient of friction.

### Typical Applications:

Shafts, gears, gauges, tools, valve pumps, feed rolls, moulds, splines, rear axle tubes.

### Typical Deposit Characteristics:

Hardness .....36-42 HRC

## EWAC COB 6

Cobalt based surfacing alloy for hot abrasion & corrosion resistance.

### Typical Deposit Characteristics:

Hardness .....35-45 HRC

## EWAC COB 12

- Exceptional resistance to heat with high hot hardness.
- Good all-round resistance to impact and abrasion.
- Dense deposit with excellent bead formation.

### Typical Applications:

Hot pressing dies, shear blades, hot cutting blades, hot hardness dies.

### Typical Deposit Characteristics:

Hardness ..... 40-50 HRC (3 layers)

## EWAC COB 21

Work Hardening cobalt based surfacing alloy with hot impact resistance & edge retention properties.

### Typical Deposit Characteristics:

Hardness  
As welded.....28-35 HRC  
Work Hardened .....45-50 HRC

## CP TOP 080

Basic, "low hydrogen" flux coating for best impact properties. Forceful & penetrating arc action ensures intimate bond with base material.

Excellent crack resistance by internal absorption of stresses. Weld deposits can be shaped by matching or by hand grinding.

### Typical Applications:

Repair & overlay of railway track, rail crossings & points etc. for medium carbon & manganese rail steel as well as for cast manganese steel. Product specially developed for rebuilding

of built-up crossing & reconditioning of cast manganese steel crossings. Overlay of track rollers, crusher hammers, overhead gantry tracks, drive sprocket wheels, mining buckets & shovels, conveyor rolls etc.

### Typical Deposit Characteristics:

Hardness	
As deposited .....	15-25 Rockwell C
Work Hardened .....	35-45 Rockwell C
Microstructure.....	Austenite (>95%) with traces of ferrite and Carbide
Deposit Efficiency (Core wire Method).....	101-115%
Type of Core Wire.....	Stainless Steel (Magnetic)

## CPCI 026

- Excellent operating characteristics.
- Dense deposits with good bonding.
- Optimum machinability.
- Stronger than conventional nickelbased cast iron welding alloys.

### Typical Applications:

Foundry defects, machine build up.

### Typical Deposit Characteristics:

Tensiles Strength.....	42 Kg/mm <sup>2</sup> (60,000 psi)
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## CPBF 024

For multi-layer overlay on all types plain carbon steels & ferrite/ martensitic low & medium alloy steels.

### Typical Applications:

Sinter star breaker.

### Typical Deposit Characteristics:

Hardness	
At 300°C.....	48-52 HRC
At 4000°C.....	42 HRC

## CPET 071

- Tubular flux cored electrode for low cost abrasive wear protection.
- Specially designed for highest deposition rate and high metal recovery.
- Primary chromium carbides in hard martensitic matrix.
- Excellent resistance to abrasion & mild impact.
- Moisture resistant coating.

### Typical Applications:

Coal burner nozzle, tips, crusher hammers, ID fans, grizzly bars, crusher housing, scraper blades, bucket teeth & lips.

### Typical Deposit Characteristics:

Hardness .....	55-62 HRC (2 layers)
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## CPET 072

- Excellent operating characteristics.
- Dense, finely rippled weld deposits.
- Superior resistance to severe abrasive wear.
- Super hard overlays on all steels.

### Typical Applications:

For hard-surfacing of fans and pump impellers, pug mill augers and knives, sand and gravel chutes, tongs, feed screws, ripper teeth and scraper mixer blades.

### Typical Deposit Characteristics:

Hardness .....	60-65 HRC (2 layers)
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## CPEM 021

- Low heat input.
- Compatibility with wide range of steels.
- High ductility.
- Excellent crack resistivity.

### Typical Applications:

Buckets, boom, stick, C frame & undercarriage components of earthmoving equipment.

### Typical Deposit Characteristics:

Tensile Strength.....	58 kg/mm (84,000 psi)
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## CP Buffer 40

Weld deposits are tough, ductile & suitable for depositing "sealing pass" on worn and fatigued surface prior to new hard facing. Excellent AC / DC+ weldability.

User-friendly welding characteristics with high deposition rates.

### Typical Applications:

Repair & overlay of railway track, rail crossings & points etc. for medium carbon and manganese rail steel as well as for cast manganese steel. Overlay of track rollers, crusher hammers, overhead gantry tracks, drive sprocket wheels, mining buckets & shovels, conveyor rolls etc.

### Typical Deposit Characteristics:

Hardness	
As deposited .....	15-25 Rockwell C
Work Hardened .....	25-40 Rockwell C
Microstructure.....	Austenite (>95%) with traces of ferrite and Carbide
Deposit Efficiency (Core wire Method).....	101-115%
Type of Core Wire.....	Stainless Steel (Magnetic)

## EWAC O-110

- Iron based chromium carbide alloy with superior abrasion resistance.
- Highly suitable for manufacturing of wear plates.
- Microstructure contains high volume fraction of primary carbides
- Excellent resistance to sliding abrasive wear.

### Typical Applications:

Wear resistance plates, scrapper blades, cement conveyor screws,

bucket shovel teeth and edges, conveyor chutes, dumper body, dozer blades, loader bucket, etc.

### Typical Deposit Characteristics:

Bulk Hardness.....	56-62 HRC (depending on thickness)
Micro-hardness	
Carbides.....	1050-1350 HV
Matrix .....	500-700 HV

**CP RS 050**

A new high Chrome-Manganese Electrode for overlays to resist severe impact & adhesive wear on Medium Carbon Steels & Manganese Steels.

- Basic, “low hydrogen” flux coating for best impact properties.
- Forceful & penetrating arc action ensures intimate bond with base material.
- Excellent crack resistance by internal absorption of stresses.
- Weld deposits can be shaped by machining or by hand grinding.

**Typical Applications:**

- Repair & overlay of railway track, rail crossings & points etc. for Medium Carbon Medium Manganese rail steel as well as for cast Manganese steel.
- Overlay of track rollers, crusher hammers, overhead gantry tracks, drive sprocket wheels, mining buckets & shovels, conveyor rolls etc..

**Typical Deposit Characteristics:**

Hardness	
As deposited .....	15-25 Rockwell C
Work Hardened .....	35-45 Rockwell C

**EWAC OS 760 MR**

- Excellent welding characteristics with easy slag removal.
- Crack-free, easy machinable deposit.
- Tough deposit with optimum hardness.
- Stable crystal structure at high temperatures.
- Excellent resistance to oxidation and corrosion.

- Resists thermal shock and metal-to-metal wear.
- Service life is comparable to that of Nickel alloys.

**Typical Deposit Characteristics:**

Hardness	
As deposited .....	150-200 BHN

**EWAC OS 780 SR**

- Excellent welding characteristics with easy slag removal.
- Multi-layer cladding capabilities.
- Crack-free, tough & easy machinable deposit.
- Thermo-mechanically stable and reinforced microstructure.
- Excellent oxidation & corrosion resistance.
- High resistance to thermal softening, thermal cycling, and metal to metal wear.
- Service life is comparable with super alloys abrasion.

**Typical Deposit Characteristics:**

Hardness	
As deposited .....	40-44 HRC
After tempering .....	40-42 HRC

**EWAC OS 870 PR**

- Crack-free, machinable weld deposit.
- Fine uniform, reinforced microstructure.
- Uniform clad surface hardness.
- Resistance to pick-up.
- High thermal conductivity & low co-efficient of friction.
- Resistance to thermal softening & metal-to-metal adhesive wear.

- Hard weld deposit resist abrasion and corrosion at elevated temperature.
- Alloy resists galling and thermal fatigue.

**Typical Deposit Characteristics:**

Hardness	
As deposited .....	48-52 HRC
After tempering .....	47-51 HRC

**EWAC Drill 008**

- Excellent resistance to high abrasion coupled with pressure.
- Tough copper alloy matrix withstands shock loading.
- Low temperature deposition retains hardness, sharpness and angularity of carbides.
- Optimum abrasion resistance and cutting action.

**Typical Applications:**

Drill bits, stabiliser, fishing tool, masonry drill, rotary cutting tool.

**Typical Deposit Characteristics:**

Hardness	
Carbides .....	1200 HV
Matrix .....	200 BHN

**VanCarb 078**

Advanced wear facing electrode designed for severe abrasion applications under pressure and moderate impact.

**Typical Applications:**

Dragline bucket, shovel tips.

**Typical Deposit Characteristics:**

Hardness .....	60-65 HRC
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**Unir GS DI 5**

Solid Nickel Iron alloyed wire for Gas-shielded Metal Arc welding of joining and cladding of Cast Iron , Ductile Iron parts. Joining of Cast iron to High alloys steel ( Heat resistant steel), Mild steel.

**Typical Deposit Characteristics:**

Yield Strength .....	200 MPa
Tensile Strength .....	400 MPa
Hardness .....	180 HRB

**EWAC 78**

- High anti wear deposit combined with corrosion resistance.
- Smooth crack free deposits, multi layer deposits possible.
- Worn out parts can be rebuild without removing old deposits.
- Can be used on a range of steel & alloys steel.

**Typical Applications:**

Industry, augers, impellers, mixer plates, stabilizer.

**Typical Deposit Characteristics:**

Hardness .....	1900-2300 HV 0.1 (tungsten carbide)
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## TriboTuf 6517

- Finely dispersed titanium carbides in martensitic matrix.
- Crack-free multilayer deposit. Consistency in hardness irrespective of number of layers.
- High resistance to impact, pressure & abrasion.
- Ideal for thick, multi-pass, protective coatings.

### Typical Applications:

Clinker breaker hammers, blow bars, roller press rolls, cane knives, shovel buckets, shredders, augers, scraper blades, tamping tools etc.

### Typical Deposit Characteristics:

Hardness .....52-60 HRC

## NanoCarb 110

- High single pass hardness.
- Exceptional abrasion & erosion resistance.
- Elevated temperature applications.
- Ultra - hard coatings with good toughness.
- Multi - layer deposits achievable.
- High deposition rate with high metal recovery.

### Typical Applications:

Grizzly bars, exhaust fans, mixer blades, furnace chutes, scrappers, sinter crusher bars, sinter plant fans, screw conveyers and many other equipment from severe abrasion and erosion at elevated temperatures.

### Typical Deposit Characteristics:

Hardness .....67-71 HRC

## EWAC TE 81

- Surfacing with minimum heat input & low dilution.
- High deposition rate with high metal recovery.

### Typical Applications:

Mill Paddles.

### Typical Deposit Characteristics:

Hardness .....60-64 HRC

## SuperGrip 88

- Very good arc strike / re-strike & operating stability, even through juice & bagasse residues. No slag.
- Uniform weld hardness, which increases in service due to work hardening. This effectively controls roughness of roll teeth to increase juice extraction & productivity.
- Improvement in service life of rolls due to optimum metallurgical structure of the weld metal against adhesive wear.
- Medium size of weld globules ensures long life of trash plate as well.

### Typical Applications:

Gripping & wear production of sugarcane crusher roll teeth "in situ" & with "juice-on".

### Typical Deposit Characteristics:

Hardness ..... 50-60 HRC (3 layers)

## EWAC TB 76T

Tube-cored gas brazing WC composite alloy in high strength matrix for wear protection of components exposed to severe abrasive and erosive wear conditions handling fine and coarse particles. High loading of WC in the matrix in the deposit ensures maximum abrasive wear protection. Heat resistance up to 350 Deg C.

### Typical Applications:

Tool drill bits, wear plates, mixer paddles, scraper knives, shovel, auger bits, eirich mixer blades, plow shares, sand muller mixer blades, cane knives, cultivator chisels etc.

### Typical Deposit Characteristics:

Matrix Hardness ..... 400 BHN  
Carbide Hardness ..... 1800 HV

## EWAC O-888

- High Deposition Rate and metal recovery.
- Smooth operating characteristics even through "Juice" & "Bagasse" residues.
- No Slag.
- Uniform Weld hardness for effective roughness of roll teeth, to increase juice extraction and productivity.
- Enhanced service life of rolls due to optimum metallurgical structure of the weld metal against adhesive wear.
- Optimum size of weld globules ensures prolonged life of trash plate as well.

### Typical Applications:

Semi-Automatic TeroCote treatment of sugarcane crusher roll teeth in dry arcing & "in-situ" with "juice-on".

### Typical Deposit Characteristics:

Hardness ..... 55-60 Rockwell C (as deposited)

