THE COMPANY

To Climb the rungs of success is an arduous task and a continuous effort towards bettering performance.

We at Diffusion have never looked back from the word go, always seeking new horizons. Incorporated in the year 1982, Diffusion Engineers attained the status of a public limited company in 1995.

This ISO : 9001-2008, ISO : 1400-2004, OHSAS : 18001-2007 certified young organization is effervescent with the zest of a youth and has introduced the revolutionary concept of superconditioning through a series of maintenance products that provide a new leas of life to engineering components and minimise scrap heaps of metal parts,

Diffusion manufactures pre-coated and antiwear industrial components, some of which are import substitutes for industries like:

- Nuclear
- Power
- Sugar
- Chemical
- Mining
- Cement
- Iron Ore Pelletisation

Some of the most important ana successful components superconditioned by Diffusion are :

- Roller Press Rollers of Cement Industries
- Pump Sleeves and Plungers
- Rotary & Discharge Chutes
- Mill Pinions
- ID Fans
- Jaw Crushers
- FK Pump Screws
- Guide Vanes
- Liners VRM

SUPERCONDITIONING

Superconditioning is not mere reclamation and reconditioning, Superconaitioning is an environment friendly concept which enhances part life, reduces life cycle costs and the demand for spares, ensures longer and continued availability of production equipment and conserves nonrenewable natural resources,

The concept of superconditioning was introduced by Diffusion Engineers Ltd., to the Indian core sector industries to ensure longer availability of production equipment used in continuous process operations.

With the new generation materials and newer techniques employed, it has now become possible to obtain greater service life from parts and equipment at highly economical costs.

PRODUCTS & SERVICES

- Lo Temp & Antiwear electrodes & flux coated gas welding rods
- TIG, MIG, Filler Wires
- Flux cored wires
- Sweat On Paste (SOP)
- LSN Diffusion Powder
- Superspray system for thermal spraying
- Weld overlayed wear resistant plates
- Coating & Repairing Compounds (DIFFCOR)
- Cobalt & Tungsten Carbide Alloys
- Service Welding of VRM Linear Rolls, Polycon Rolls, Concast Rolls etc,

OUR BRAND

DIFFCOR
New Generation Surface Engineering

COLLABORATORS

LSN DIFFUSION

DIFFUSION HERNON
High Performance Adhesive & Sealants

DURUM
DURUM VERSCHLIESS SCHUTZ GMBH, GERMANY

WE CARE FOR WEAR

PRODUCT SPECTRUM

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COLLABORATION

Hernon Manufacturing Inc., U.S.A. - for Adhesive and Sealants.
LSN Diffusion, U.K. - for Nickel, Cobalt & Iron Based Powders.

AGENCY

DURUM VERSCHLEISS - SCHUTZ Gmbh, Germany : For Tungsten Carbide Products and ot ducts.

PIONEERING SOLUTIONS

DIFFUSION introduced the concept of '**SUPER CONDITIONING**' to the Indian core sector indu es to ensure a quantum jump in the useful service life of production equipment used in continuous process operations. With the advent of "New Generation" materials & processing techniques, it has now become possible to obtain a much longer service life from equipments much more economically.

By way of developing the complete range of "Lo Temp and Antiwear Alloys", Diffusion has been waging a relentless war against the premature, unnecessary and uneconomical replacement of worn out equipment parts in Indian industry. DIFFUSION is now a name to reckon with in the field of RECLAMATION WELDING.

DISTRIBUTION & SERVICE NETWORK

DIFFUSION product and services are backed by a Nationwide Network of highly competent teams strategically located at Seven full-fledged branches across India besides a national network of Authd. Distributors & Stockists located in strategic towns & industrial areas, backed by Team of Engineers & Technicians offering entire range of products and on-the spot technical services & assistance.

Del engineers undertake on the spot study, non-destructive testing, welding design & development, spectrometer analysis, wear analysis, corrosion testing , dynamic impact testing & customised solutions for clients.

QC FACILITIES / R&d EQUIPMENTS

- **CHEMICAL CHARACTERISATION LABORATORY**
  - Wet Chemical Analysis Laboratory
  - Spectrometer (SPECTROLAB Gmbh, Germany)
  - Hydrogen Determination Apparatus
- **MECHANICAL TESTING LABORATORY**
  - Universal Tensile Testing Machine
  - CVN Impact Testing Machine
  - Rockwell Hardness Tester
  - Vicker's Microhardness Tester
  - Dynamic Impact Testing Apparatus
  - Portable Dynamic Hardness Tester
- **METALLOGRAPHY LABORATORY**
  - Metallurigical Microscope with CCTV Camera (2000x)
  - Image Analysis System with Metallurgical Modules
- **WEAR/TRIBOLOGY TESTING LABORATORY**
  - Dry Sand Rotating Wheel Abrasion Tester
  - (DSRW) - ASTM G-65 Standard
  - Two Body Abrasion Testing Apparatus
  - Particle / Slurry Erosion Test Apparatus
  - Solid Particle Erosion Tester

DIFFUSION offers to industries a spectacular range of maintenance & reclamation products for Super Conditioning.

- Lo Temp & Antiwear Welding Electrodes
- Solders and fluxes
- Cobalt and Tungsten Carbide Alloys
- Sop - Containing Unique Ultrahard Chromium Borides.
- Tubular Products
- No-Heat products for Cold Repair
- Gas Welding alloys
- LSN Diffusion Powders and Coated Electrode
- Superspray System for Thermal Spraying
- Wear Plates
- Flux Cored Wires

ANTIWEAR ALLOY

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
XALOY 52	HARDNESS (As deposited) : 22 - 25 HRc (Work hardened) : 45 - 50 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 100-140 120-160 150-200	An austenitic electrode for buildup and overlaying varieties of Mn steels. Deposits are rapidly work-hardening type, having extremely high toughness with excellent resistance to flow & fatigue under repeated pounding and impact loads. Applications include Railway points, crossings, switches, all types of hammers, crusher mantles etc.
ABROCAR 60	HARDNESS : 58 - 62 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 80-100 110-160 140-180	ABROCAR 60 is a newly formulated basic coated all position electrode for antiwear application on carbon steel & manganese steel. The deposits provide excellent high stress abrasion resistance under strong impact condition. It is used for repairs of cutting tools, screw conveyors, dipper teeth, bucket teeth etc.
ABRALOY 63	HARDNESS : 57 - 63 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 90-120 120-170 160-200	Newly formulated heavy coated high recovery electrode. Designed for extreme abrasion And mild impact conditions. Deposit consists of high % of primary chromium carbides nearly about 50 %. Surfacing of low alloy and mild steel under extreme abrasion and mild impact situation. Suitable for digger teeth,Bucket edges, Muller tyres, Screw conveyors and Mixer parts, Sprockets, Pinions.
DIFFUSALOY 68	HARDNESS : 61 - 66 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 95-130 130-170 160-200 Polarity : AC/DC+	Newly formulated heavy coated, high recovery electrode designed specially for extreme abrasion resistance at high temperature. Deposits consist of high percentage of primary chromium carbide and secondary vanadium carbides and Borides for optimum results. For use in still mills and sinter plants, On items such as Crusher sieves, Conveyor screws , Dredger components and Tip casting.
ABROCAR 84	HARDNESS : 58 - 62 HRc Size (mm) : 3.15 4.00 5.00 Current(amps) : 90-130 100-150 140-200	An Iron base alloy having carbides in a hard martensitic matrix ensures superior resistance to low-stress scratching abrasion by minerals. Applications include bucket teeth, crusher mantles pulverizer hammers, jaw crushers, plow shares, scrapers, road rippers, bucket lips, pug mill screws fan blades etc.
ARCALOY SUPER AC/DC	HARDNESS : 58 - 62 HRc Size (mm) : 4.00 x 450 mm Current(amps) : 90-130 100-150 140-200	Arcaloy Super AC / DC is specially designed for "arcing of cast iron and steel sugar mill crusher roller. Both "wet" and "dry" arcing. Arcaloy Super is formulated to deposit complex carbides to resist wear by abrasion, adhesion, compression & corrosion. It is an indigenously developed "high recovery" electrode to deposit "hard droplets" on tooth points of cane crusher rollers.

ANTIWEAR ALLOY

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
TUFTOOL 100	HARDNESS : 39 - 43 HRc STRENGTH TENSILE : 100 - 135 kgf/mm² Size (mm) : 3.15 4.00 5.00 Current (amps) : 85-120 110-150 140-180	A Cr Ni Mo alloy specially designed ! forging dies of forging industry. A hot working tools, sow blocks anv insert dies, rolls of cold rolling mill
HADMOLOY140	STRENGTH TENSILE : 80 kgf/mm² (Min.) YIELD STRENGTH : 52 kgf/mm² (Min.) HARDNESS : (as deposited) : 180 - 220 BHN (workhardened) : 400 - 450 BHN Size (mm) : 4.00 5.00 Current (amps) : 120-160 150-200	A workhardening, austenitic ty suitable for build up. Deposits h resistance to deformation toughness). Applications include pulverizer ham , bucket teeth, sprockets chain links, crush mantles, crusher jaws, bucket latch bars, keys, wear plates, shovel track pads etc.
TUFTOOL 200	HARDNESS : 35-43 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 90-120 110-140 150-200	A latest wear resistant alloy having Chromium, Vanadium & Tungsten as major alloy constituents. Applications include lining of tools, dies, rotary drills, piercing dies and mandrels.
ABRALOY 240	HARDNESS : 52 - 58 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 90-100 120-160 140- 200	A newly developed low heat input electrode with Cr, V to resist against severe abrasion, corrosion & mild to moderate impact. Used on carbon steels & austenitic manganese steels. Recommended for crusher hammer, guides, bucket lips, scrapper blades, coal nozzles and burners.
ABRALOY 300	HARDNESS : 57 - 60 HRc Size (mm) : 3.15 4.00 5.00 Current(amps) : 80-120 120-160 150-200 Polarity : AC/DC+	A high alloyed Chromium Iron type of electrode suitable for high abrasion and moderate impact. Superb resistance to low-stress scratching, high stress grinding abrasion and low angle particle impact erosion. Applications include conveyor screws, dozer and bits, dozer blades, grinding mill diaphragms, rubber mixing blades, dredger cutter, impellers etc.
TUFALOY 320	HARDNESS (as deposited) : 28 - 32 HRc (Flame hardened) : 35 - 40 HRc Size (mm) : 4.00 5.00 Current (amps) : 120-160 150-200	A machinable product for wear resistant buildup and overlays. Resists wear due to high impact, moderate friction and mild abrasion. Suitable for mill pinions, carrier and track roller, idlers, crane wheels, pinions and gears, tail bars, girth gears etc.
SUPERALOY 495	HARDNESS (on I layer) (on II layer) (As Deposited) : 47 - 49 HRc 41 - 43 HRc (After 1st tempering for 1 hr. at 600° C) : 49 - 51 HRc 44 - 47 HRc (After 2nd tempering for 1 hr. at 600° C) : 51 - 53 HRc 47 - 49 HRc (After 3rd tempering for 1 hr. at 600° C) : 52 - 54 HRc 50 - 53 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 80-110 120-150 150-190	It is a special electrode depositing a sound, highly alloyed weld metal which is designed to offer excellent resistance against metal to metal wear at temperatures as high as 650°C. This electrode can be used for hardfacing any component subjected to metal to metal wear at elevated temperature upto 650°C. Hence it is suitable for a variety of wearfacing applications viz. Continuous casting driving rolls, Hot forging dies, Hot forming dies, Mandrels, Draw rings, Hot punching tools, Hot forming tools, Guide rings, Wear rings, Hot drawing dies, Hot trimming dies etc.

ANTIWEAR ALLOY

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
SUPERALOY 550	HARDNESS : 50 - 55 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 85-100 110-160 140-180	An iron carbide type electrode to resist very high abrasion. Suitable for Plow shares, scrapers, screw conveyors, pug mill screws, coal chutes, dipper teeth, bucket teeth, crusher plates, tamping tools, etc.
DIFFUSALOY 555	TENSILE STRENGTH : 115 kgf/mm² HARDNESS : 50 - 55 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 85-120 105-140 125-165 Polarity : AC/DC+	A newly developed basic coated electrode designed to give a highly alloyed weld metal. The weld metal is machinable and exhibits a high degree of toughness. Extremely suitable for building up large composite dies or extensive repair of similar dies found in steel, chemical industries, cryogenic as well as nuclear industry. Hot forging dies, Hot forming dies, Mandrels, Draw rings, Hot Punching tools, Hot forming tools, Guide rings, Wear rings, Hot drawing dies, Hot trimming dies etc.
DIFFUSALOY 560	Hardness : 50 - 60 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 90-110 120-160 140-180	A basic coated hardfacing electrode, giving a smooth arc and minimum spatter. The slag fully covers the bead and is easily detachable. The sound weld deposit has low hydrogen content and has a very high hardness. It can be used on carbon & low alloy steels, manganese steel and malleable iron. Application include hardfacing of buckets, pads, bucket teeth, jaw crusher, coal crusher, scrapers, dozer blades, dipper teeth, screw conveyers, metal cutting and forming tools.
DIFFUSALOY 565 CrNi	HARDNESS (On M.S.) (On Cast Iron) (Third Layer) : 41 - 43 HRc 48 - 50 HRc (First Layer) : 42 - 45 HRc 18 - 25 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 85-120 105-140 125-165	This is a specially developed basic electrode, which gives a highly alloyed weld metal which exhibits an excellent combination of moderately high hardness, toughness, corrosion resistance to various aqueous solutions. Ideally suitable for resisting humid corrosion, abrasion and moderate impact. Slurry Pump Casings, Impellers and other cast iron components.
TUFALOY 600 X	HARDNESS (as deposited) : 220 - 240 BHN (work hardened) : 420 - 475 BHN Size (mm) : 3.15 4.00 5.00 Current (amps) : 100-140 120-160 150-200	An austenitic electrode for buildup and overlaying varieties of Mn steels. Deposits are rapidly work-hardening type, having extremely high toughness with excellent resistance to flow & fatigue under repeated pounding and impact loads. Applications include Railway points, crossings, switches, all types of hammers, crusher mantles etc. Developed exclusively for repairing of points and crossings upto traffic density of 15 GMT.

ANTIWEAR ALLOY

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
MACROLOY 712	TENSILE STRENGTH : 100 kgf/mm² (Min.) HARDNESS (Single layer) : 45 - 50 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 80-110 100-130 140-180	Straight chrome stainless steel ... resist against cavitation erosion, p... impact erosion, fluid flow erosion ... rosion. Hardness can be retained at 60... able for all types of valves, rotar discs, ... sleeves, refiner plugs and sockets etc.
MACROLOY 812	TENSILE STRENGTH : 100 kgf/mm² (Min.) (after heat treatment at 580 - 620°C) Elongation : 14% (Min.) HARDNESS : 32 - 35 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 90-120 110-140 130-180	For build up on straight chrome ... ic steel. Deposits are tough and resist... avitation erosion, particle impact erosio... ion and moderate corrosion. Suitable for ... plugs and sockets, impellers, pump sleeves... casings, hydro-electric turbine runners, b... and for new or worn out sugar mill trash pl... and fibrizer anvils.
TUFALOY 1200 X	HARDNESS : (as deposited) : 200 - 250 BHN (work hardened) : 450 - 500 BHN Size (mm) : 3.15 4.00 5.00 Current (amps) : 100-130 130-170 150-220	Modified chemistry than Xaloy 52 giving a better ratio of Mn to Chromium. Suitable for all types of hammers, crusher mantles etc. Developed exclusively for repairing of points and crossings upto traffic density of 25 GMT.
HADMOLOY 1400	TENSILE STRENGTH : 60 kgf/mm² (Min.) HARDNESS (as deposited) : 180 - 200 BHN (work hardened) : 400 - 450 BHN Size (mm) : 4.00 5.00 Current (amps) : 120-160 150-200	Hadmoloy 1400 is a specially formulated Ni-Cr-Mn type Anti-wear' electrode suited for high strength, tough crack & wear resistant joints. Recommended for joining mild steel to manganese steel & cushioning of Hadfield manganese steel in coal, cement, steel industries.
ABRALOY 3015	HARDNESS : 55 - 60 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 95-130 135-175 160-200 Polarity : AC/DC+	Newly formulated heavy coated, high recovery electrode designed specially for severe abrasion resistance and mild to moderate impact. Soft fusion, self-releasing slag and a shiny surface of the weld bead. Recommended on carbon steels & austenitic manganese steels. Mainly used on pump bodies, mixer blades, concrete pumps, conveyer worms, crushing and pulverizing plants, bucket teeth and coke oven slides. Used for wear protection on coal crushing hammers, rolling mill guides, dragline lips, plough shares, scraper blades, tamping tools, coal chutes, coal feeder plates, coal nozzles and coal burners etc.
TUFALOY 3200	TENSILE STRENGTH : 100 kgf/mm² (Min.) Elongation : 14% (Min.) HARDNESS : 37 - 45 HRc Size (mm) : 3.15 4.00 Current (amps) : 90-120 120-140	For moderate impact and medium to high abrasion. Weld deposits retain hardness upto 500° C. Applications include turbines, cast chromium valve bodies, oil refinery equipment, burner pipers, hot forging dies, mill pinions, earthmoving machinery, tumblers etc.

ANTIWEAR ALLOY

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
DIFFUSALOY 4351	TENSILE STRENGTH : 77 kgf/mm² (Min.) Elongation : 15% (Min.) HARDNESS : 38 - 42 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 80-120 110-150 150-190	A special purpose basic coated electrode with excellent arc stability and an easily detachable slag on a smooth bead. The weld metal is a Cr-Ni-Mo martensitic stainless steel. When deposited on mild steel, it gives a hardness of 40-42 HRc on second layer and 37-39 Rc on fifth layer. The weld deposit has excellent resistance to corrosion, pitting and impact loads. Typical applications include surfacing of steam turbines blades, valve seats and high pressure valves. It can also be used for the repair of pulp and paper plant equipment.
DIFFUSALOY 6 WZ	HARDNESS : 60 - 64 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 90-120 120-150 150-200 Polarity : AC/DC+	A specially developed semi-basic high speed tool steel electrode depositing a highly alloyed heat treatable weld metal. For repair and rebuilding of composite high speed tool steel dies, tools. Provides maximum hardness of edges at high temperatures. Excellent for knife edges, and machine tool parts subject to heavy frictional wear. Ideal for building composite blanking or punching dies.
DIFFUSALOY 6100 WZ	HARDNESS : 60 - 64 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 90-110 120-150 140-190 Polarity : AC/DC+	A specially developed semi-basic high speed tool steel electrode depositing a highly alloyed weld metal. It has excellent weldability in flat, horizontal and vertical upward positions. The weld bead is smooth and has excellent bond with the base metal. Used for repair and rebuilding of high speed tool steels, cutting tools , piercing and shaving tools , hot and cold blanking and trimming dies , hot and cold shear blades , stamping dies, Ingot lifting tongs , rolling mill guides etc.

SUPER ANTIWEAR ALLOY

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
ABRALOY 61 AC/DC+	HARDNESS : 60 - 65 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 95-130 135-180 160-200	Newly formulated heavy coated, high recovery electrode designed specially for extreme abrasion resistance at high temperature. Hardness is retained up to 500 °C. Used for hardfacing of parts subject to strong abrasive wear, friction, heat and corrosion. Hardfacing on tools used in steel, coal and ore mining as well as in the cement industry.
SOP	HARDNESS : 68 - 72 HRc VOLUMETRIC COVERAGE : 300 cm³ per kg. of paste	Composed of ultra hard Chromium Boride crystals. This is the most abrasion resistant material available. Restricted to thin layer, maximum upto 1.5 mm thickness.
ABROCAR 184	HARDNESS : 58 - 62 HRc (Single Layer) : 60 - 65 HRc (Three Layer) Size (mm) : 3.15 4.00 5.00 Current (amps) : 90-130 100-160 140-200	Abrasion resistant alloy having complex carbides. Superior resistance to high stress grinding abrasion, excellent resistance to galling and scratching abrasion. Applications same as Abrocar 84 & also recommended for high temperature applications, like coal nozzles & coal burners etc.

2.50 mm size electrodes can also be manufactured as per requirement.

SUPER ANTIWEAR ALLOY

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
ABRALOY 2412	HARDNESS : 60 - 65 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 95-130 135-170 165-200 Polarity : AC/DC+	A newly formulated heavy coate[d] electrode designed specially fo[r] resistance and mild to moderate[ly] Mainly used on conveyor worm[s] grates in mineral dressing eq[uip] and cement pumps, Coal burn[er] Mincer hammers, Sinter brea[ker] Conveyors, Clinker Convey[or] Slurry pumps, Billet Conv[eyor] pusher shoes, vertical Coal mi[ll] ...gh recovery ...re abrasion ...r. ...er crushers, ...t, concrete ...s, Fibrizer / ...s, Hot Slag ...s, Augers, ...des, Coke ...etc.
ABRALOY 3000 D	HARDNESS : 63 - 68 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 90-130 120-150 150-200	High recovery electrode desi[gned] ...especially to resist severe high tempera[ture] ...abrasion & erosion. Deposit consists of pri[mary] ...& secondary carbides. Hardness is retained u[p] ...000°C. Applications include coal burner ...pes, fibrizer / mincer hammers, sinter breaker arms, hot slag conveyors, clinker conveyor chains, augers, slurry pumps & coke pusher shoes.
ABRALOY 3505	HARDNESS : 60 - 64 HRc Size (mm) : 4.00 5.00 Current (amps) : 120-160 150-200	ABRALOY 3505 is a basic coated high recovery electrode which deposits a hard weld metal rich in chromium carbides. The deposit has excellent low stress grinding abrasion resistance. Due to its high hardness, recommended for a single layer hardfacing. Deposit provides antiwear coating on carbon steel, Mn steel. Applications include hardfacing of cane knives, dozer blades, & other mining equipments.
ABRADUR 3605	HARDNESS : 60 - 64 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 120-150 150-200 180-240	A high recovery electrode having Chromium, Nickel, Mo and Boron carbide to resist high temperature abrasion, erosion and moderate impact. Very much suitable for fibrizer hammers, sinter breaker arms, augers, slurry pumps etc.
ABRALOY 3720	HARDNESS (On III Layer) : 61 - 65 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 100-140 140-175 160-200	Specially formulated, highly alloyed heavy coated electrode with high weld metal efficiency. Special alloy addition gives the unique weld deposit which is extremely rich in different types of carbides, exhibits excellent performance in high temperature applications. It is used for hardfacing the components which are subjected to high abrasive wear, erosion and friction. Coal burner pipes, Clinker Conveyor chains, Augers, Slurry pumps, Billet Conveyor Guides, Coke pusher shoes, vertical Coal mill rollers, grates in mineral dressing equipment where live coal and slag is treated etc.
SUPERALOY 7000 TCC	HARDNESS (on I layer) : 63 - 65 HRc (on II layer) : 66 - 70 HRc Size (mm) : 5x350 Current(amps) : 100-225AC/DC +	A tubular hardfacing electrode containing complex carbides. Apart from primary Tungsten carbides, alloy also has secondary carbides of metals, like Niobium, Chromium, Vanadium and Molybdenum. This alloy has no soft matrix and provides exceptionally high wear resistance to abrasion, erosion and friction. Applications include dragline bucket lips, bulldozer blades, shovel teeth, muller plows, coal chutes, bed knives etc.

2.50 mm size electrodes can also be manufactured as per requirement.

CREEP RESISTANT ALLOY

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
DIFFUSALOY 817	TENSILE STRENGTH : 45 kgf/mm² (Min.) Elongation (L=4d) : 30% (Min.) CVN Impact (+20°C) : 65 J (Min.) HARDNESS (As welded) : 19 - 24 HRc (As hardened) : 38 - 43 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 110-140 140-170 170-210	Specially formulated, unique, highly alloyed electrode for overlay build up and repair of worn out parts subject to oxidation, corrosion and thermal/mechanical stresses at high temperature. Deposits are tough, crack free and work hardening type. Heavy coated electrode having metal recovery of 150%. Hot forging Dies. Hot trimming Dies. Restoring cutting edge of Hot cutting and shaping tools, valve seals.
DIFFUSALOY 925	TENSILE STRENGTH : 60 kgf/mm² (Min.) Elongation : 30% (Min.) CVN Impact (+20°C) : 65 J (Min.) Size (mm) : 3.15 4.00 Current (amps) : 60-100 75-130	A specially designed electrode for welding of steels like Sandvik 2, RK 65, Alloy 20, HV 9, Carpenter 20 etc. Resistance to corrosion upto 1200°C. Suitable for welding of low alloy steels and joining different steels to mild steels and also for cryogenic components. Designed for all positional welding.
SUPERALOY 1001	HARDNESS : 52 - 57 HRc Size (mm) : 3.15 4.00 Current (amps) : 70-100 90-120	A cobalt base electrode with excellent weldability which will not gall, score or seize in service. Hot hardness at 600° C is about 42 HRC. Applications include guide rollers, screws, ceramic die cutters, patterns, die tools etc.
SUPERALOY 1006	TENSILE STRENGTH : 85 kgf/mm² (Min.) HARDNESS : 40 - 44 HRc Size (mm) : 3.15 4.00 Current (amps) : 70-100 90-180	A cobalt base electrode for high temp, applications. Deposits exhibit edge retention property with no tendency to softening and scaling at elevated temperatures. Good resistance to abrasion, friction and corrosion.
SUPERALOY 1012	HARDNESS : 44 - 50 HRc Size (mm) : 2.5 3.15 4.00 5.00 Current (Amps) : 60-85 85-120 120-150 150-190	Finest alloy developed for high temperature service. Special cobalt base formulation with high Tungsten assures higher hardness and resistance to abrasive wear under high heat and corrosive conditions. Used for super conditioning of valve seats and knives in carpet and chemical industries, Hot punches, Turbine blade tipping, saw blade tipping, bar mills guide rolls, cutter rolls, conveyer screws, wire drawing blocks, Hot shear blades, Edger rolls, Hot trim dies and swaging mandrels.

CREEP RESISTATNT ALLOY

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
SUPERALOY 1750	TENSILE STRENGTH : 65 Kgf/mm² (Min.) Elongation : 30% min. Size (mm) : 3.15 4.00 Current (amps) : 70-100 90-130	A Nickel base all position electrode for joining & surfacing of high temperature resistance alloys such as C-276, Ni, Mo 16, C... Also used for cladding on low alloy steels. Applicable for surfacing o... which operate at high ... corrosive media. Deposi... embrittlement at low or hig... punches etc. ...rature under ...not prone to ...atures.
SUPERALOY 1752	TENSILE STRENGTH : 620 N/mm² (Min.) Yield Strength : 420 N/mm² (Min.) Elongation (L=5d) : 35% (Min.) CVN Impact (+20°C) : 90 J (Min.) Size (mm) : 2.5 3.15 4.00 Current (amps) : 70-100 90-120 125-165 Welding Condition : AC/DC+	A specially formulated el... ...which yields an Inconel type deposit that ... ...ot require any special post-weld heat tre... ... to develop its optimum properties. The weld deposit possesses ... ...cellent ability to resist corrosion and ...idation at high temperatures in applications such as furnace components and reactor vessels. It shows excellent toughness at cryogenic temperatures (upto -269°C). Weld deposit gives tough joints and also used for surfacing on heat resistant Cr and CrNi steels/cast steel grades and Ni-base alloys.
SUPERALOY 1755 Mo	HARDNESS (as deposited) : 180 - 240 BHN Work Hardened : 350 - 370 BHN Size (mm) : 2.5 3.15 4.00 Current (amps) : 70-100 100-130 130-170	Superaloy 1755 Mo is a low heat input basic coated electrode which yields an inconel type deposit. The deposit retains its high hardness at elevated temp. 550-1100° c. Applications include joining of various type of stainless steels, Ni-base alloys, especially austenitic to ferritic steel, welding of joints in nuclear engineering, welding of cryogenic steels, and anti-corrosion surfacing of furnace components.
SUPERALOY 1768	TENSILE STRENGTH : 65 kgf/mm² Size (mm) : 2.5 3.15 4.00 Current (amps) : 60-90 90-130 130-170	A semi basic coated electrode which yields an Inconel type deposit that does not require any special post-weld heat treatment to develop its optimum properties. Applications include joining of various types of stainless steels, Ni-base alloys, dissimilar joints, especially austenitic to ferritic steel, welding of weld cladding on low alloy steels, reactor vessels, welding of joints in nuclear engineering, welding of cryogenic steels, anti-wear and anti-corrosion surfacing of furnace components, heat treatment furnaces and fixtures, making transition joints, gate valves in freon gas plants and similar applications.

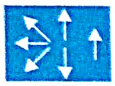
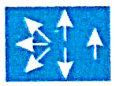
CREEP RESISTANT ALLOY

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
SUPERALOY 1770	TENSILE STRENGTH : 65 kgf/mm² (Min.) Size (mm) : 2.5 3.15 4.00 Current (amps) : 70-100 100-130 150-175	Superaloy 1770 is specially developed electrode for joining various types of stainless steel, nickel base alloys & dissimilar joints. Applications include welding of cryogenic steels, gate valves, heat treatment furnace parts & reactor vessels. Also used for antiwear & anti corrosion surfacing.
SUPERALOY 1780	TENSILE STRENGTH : 60 kgf/mm² (Min) Elongation : 32% (Min) Size (mm) : 2.5 3.15 4.00 5.00 Current (amps) : 65-90 80-120 130-155 165-190	A specially designed alloy which gives Inconel type deposit that possess all the mechanical properties in as welded weld metal only. Its high strength coupled with high ductility, good creep and heat resistance at high temperatures up to 1000°C and excellent low temperature toughness makes it the automatic choice for high as well as low temperature applications. Joining of various types of stainless steels, Ni-base alloys, dissimilar joints, especially austenitic to ferritic steel, welding of weld cladding on low alloy steels, reactor vessels, welding of joints in nuclear engineering, chemical industry, petrochemical industry, glass works, welding of cryogenic steels, anti-wear and anti-corrosion surfacing of furnace components, heat treatment furnaces and fixtures, Kiln Tyres Drills and cutters, Heavy earth moving cement mill components, making transition joints, gate valves in freon gas plants and similar applications.
DIFFUSALOY 2535	Size (mm) : 2.5 3.15 4.00 5.00 Current (amps) : 60-90 90-125 130-170 170-220	It is a special high recovery electrode depositing a fully austenitic weld metal, with exceptionally high corrosion resistance to a variety of industrial acids. It is well suited for joining and hardfacing on the same or similar stabilized or non-stabilized, fully austenitic and molybdenium and copper based cast steels. For joining the base materials mentioned above, or as an overlay, in phosphoric acid and sulphuric acid plants, the weld metal has excellent corrosion resistance against many organic acids also.

DIEBUILD SERIES

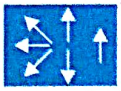
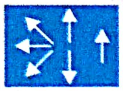
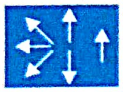
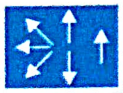
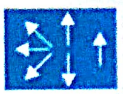
TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
DIEWELD	HARDNESS : 32 - 36 HRc TENSILE STRENGTH : 70 kgf/mm² (Min.) Size (mm) : 3.15 4.00 5.00 Current (amps) : 100-120 110-150 150-170	Newly developed low heat input electrode that gives a Cr-Ni-Mo- V alloy steel deposit which is considered to be standard for die block repairs, both patch work type as well as extensive. The deposit has good machinability & gives improved die life, & hence it is automatic choice for the repair & reclamation of hot forging dies. As deposited hardness is 32 HRC. A post weld stress relief heating to 450 1 Hr / 2 Hr would further improve toughness air work.
DIEBUILD N	HARDNESS : 45 - 48 HRc TENSILE STRENGTH : 100 -120 kgf/mm² Size (mm) : 3.15 4.00 5.00 Current (amps) : 80-110 100-140 130-170	A basic coated electrode which s a rich Cr-Ni- Mo-V weld metal containing arbon but otherwise similar to 55 Ni Cr Mo excellent for building up working face posite hot forging dies, both large as well as The deposit has excellent wear stance at elevated temp. (Upto 650°C), eminently suitable for the reclamation of repairing all types of hot dies, equally useful for small patch work as well as extensive repairs.
DIEBUILD E	HARDNESS : 41- 45 HRc TENSILE STRENGTH : 100 -110 kgf/mm² Size (mm) : 3.15 4.00 5.00 Current (amps) : 80-110 100-140 130-170	A basic electrode which is designed to give a low carbon alloy steel weld deposit similar to H 12 in its alloy content. It is extremely suitable for building up large composite dies or extensive repairs of similar insert dies used in hot-forging. The weld metal has an excellent heat cracking resistance and resistance to thermal shock. It exhibits superior wear resistance at high temperature as compared to DIE-BUILD-N. The deposit is machinable & has a hardness of 41 - 45 HRc. Its hardness can be controlled as desired by employing a suitable post weld heat treatment / tempering.
DIEBUILD S	HARDNESS : 41- 47 HRc TENSILE STRENGTH : 100 - 110 kgf/mm² Size (mm) : 3.15 4.00 5.00 Current (amps) : 85-110 100-130 130-160	Basic coated electrode of this series, gives a highly alloyed low carbon weld metal similar to BH 10 A. The weld metal is machinable and exhibits a high degree of toughness, excellent hot strength and wear resistance at elevated temperature along with good heat cracking resistance. It stands up well against temperature shocks and even admits water cooling from 500 °C to 650 °C. Suitable for building up large composite dies or extensive repair of similar dies used in steel, chemical industry, as well as nuclear industry.

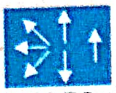
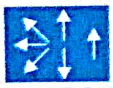
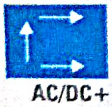
DIEBUILD SERIES

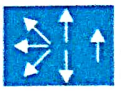
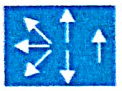
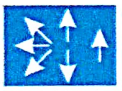
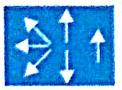
TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
DIFFUSALOY DIE 100  AC/DC+	TENSILE STRENGTH : 75 kgf/mm² (Min.) Hardness : 42 - 45 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 80-120 120-150 150-190	A newly developed electrode with Cr-Ni-Mo specially for forging die repairs in forging industry. The deposited weld metal is highly resistant to cracking even with higher impact load. It is an all position electrode with high strength for repair of large forging dies, hot working tools, hammer bases, sow blocks anvil, devotails and insert dies, rolls of cold rolling mill. Any surface requires impact and friction resistance.
DIFFUSALOY DIE 101  AC/DC+	TENSILE STRENGTH : 115 kgf/mm² (Min.) HARDNESS : 37 - 42 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 80-120 120-150 150-190	A newly developed electrode with Cr-Ni-Mo-W-Co specially for forging die repairs in forging industry.It is used for welding high-strength tempered low-alloy steels as well as process welding on steels castings, cast steels of corresponding strength. It is an all position electrode with high strength for repair of large forging dies, hot working tools, hammer bases, sow blocks anvil, devotails and insert dies, rolls of cold rolling mill.
DIFFUSALOY DIE 105  AC/DC+	Hardness : 47 - 54 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 80-120 120-150 150-190	A newly developed electrode with Cr-W-V used for similar type steel and also for overlaying the edges or surfaces of tools made of low alloyed steels. Weld deposit have good high temperature resistance which is very helpful in increasing the life. This product is very much suitable for forging die repairs in forging industry. Used for hot shear blades, drawing blocks, hot forging dies, impact moulding dies, slab shears, containers, swages etc.
DIFFUSALOY DIE 122  AC/DC+	TENSILE STRENGTH : 125 kgf/mm² (Min.) Yield Strength : 85 kgf/mm² (Min.) Hardness (On Third Layer) : 35 - 40 HRc Size (mm) : 3.15 4.00 5.00 Current (amps) : 80-120 120-150 150-190	A newly developed basic coated electrode with Cr-Mo specially for forging die repairs in forging industry. The combination of Cr-Mo makes the weld metal deposit tough and also gives the high strength. Weld deposit have good high temperature resistance. It gives a wear resistant weld deposit and can be used to reclaimed hot-forging dies and to overlay the edges and flat areas of low alloyed high density steel tools. Used for repair of large forging dies, slab shears, drawing dies, containers, hot working tools, hammer bases, sow blocks anvil, devotails and insert dies, rolls of cold rolling mill.

TUBULAR PRODUCT

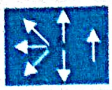
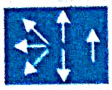
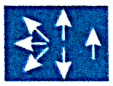
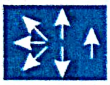
TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
TUBALOY 23	HARDNESS (as deposited) : 58 - 60 HRC (multilayer) : 62 - 64 HRC Size (mm) : 6.00 8.00 11.00 Current (amps) : 80-125 140-190 190-250	A special alloy consists of hard austenitic matrix with carbides of chromium, niobium, molybdnum, tungsten and vanadium. This is designed for resistance to severe abrasion and erosion at both ambient and elevated temperatures (up to 800 °C). Used for sinter fans, sinter breakers, blast furnace bells and hoppers, kiln, wear plates, clinker wear plates.
TUBALOY 33	HARDNESS : 50 - 55 HRc (Multi Layer) : 56 - 60 HRc Size (mm) : 6.00 8.00 11.00 Current (amps) : 80-125 140-190 190-250	An austenitic iron type of tubular electrode designed for welding of manganese steels to obtain a very abrasion resistant and impact resistant surface. It is also used for hardfacing on carbon and low alloy steels. Applications include crusher hammers, mantles and liners bucket lips and teeth, blow bars etc.
TUBALOY 35	HARDNESS (Single layer) : 50 - 60 HRc (Multilayer) : 58 - 62 HRc Size (mm) : 6.00 8.00 11.00 Current (amps) : 80-125 140-190 190-250	An austenitic iron type of tubular electrode having tough austenitic matrix with large quantities of chromium and molybdenum carbides. Deposit resists grinding abrasion. Can be applied directly on grey cast iron and low carbon steels without preheating. Suitable for crushing equipments, earthmoving and agricultural machineries.
TUBALOY 108	HARDNESS (as deposited) : 15 - 20 HRc (Work hardened) : 45 - 48 HRc Size (mm) : 6.00 8.00 11.00 Current (amps) : 80-125 140-190 190-250	A chrome-manganese type of tubular electrode having vanadium as alloy constituent. Deposit work- hardens rapidly and gives resistance to both abrasion and impact. Applications include crusher mantles, hammers, blow bars etc.

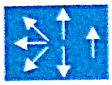
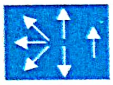
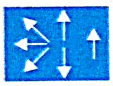
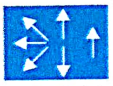
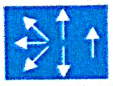
TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
SUPERMATIC  AC/DC+	TENSILE STRENGTH : 48 kgf/mm² (Min.) Elongation : 22% (Min.) Size (mm) : 2.50 3.15 4.00 5.00 Current (amps) : 60-90 80-120 110-170 140-200	For all position contact welding with minimum heat input on low carbon steels. Used for fabrication of thin sheets, tanks, pipe lines, containers and also for sugar mill roller journals, shafts etc.
DIFFUSALOY GZB LH	TENSILE STRENGTH : 43 kgf/mm² Elongation : 30% Size (mm) : 3.15 4.00 5.00 Current (amps) : 110-130 140-180 200-240	A specially developed electrode with a unique coating that makes it possible to deposit a weld metal which is almost pure iron, containing very little silicon and carbon and quite low manganese as well. Hence it is ideal for the repair of galvanizing bath tanks. This electrode is used in the welding of tanks of galvanizing baths and for filling up the worn out portions of the galvanizing bath tanks.
UNILOY 608  AC/DC+	TENSILE STRENGTH : 65 kgf/mm² (Min.) Elongation : 25% (Min.) Hardness : 160 - 190 BHN Size (mm) : 2.50 3.15 4.00 5.00 Current (amps) : 45-85 60-110 100-140 140-190	A high alloy electrode for joining and cushioning medium and high carbon, low and high alloy steels and stainless steels. Suitable for heat and corrosion resistance with better ductility. Bucket corner cracks, truck links, track pads, parting tools, furnace parts, cushioning layer on jaw crushers, hammers, repairs of tools and for corrosion resistant overlays on carbon steels.
DIFFUSALOY 618  AC/DC+	TENSILE STRENGTH : 60 - 65 kgf/mm² (Min.) Elongation : 35% (Min.) Hardness (as deposited) : 80 - 100 HRb (work hardened : 30 HRc (Min) Size (mm) : 3.15 4.00 5.00 Current (amps) : 60-100 100-160 140-190	For joining and overlaying manganese steels and for joining these to other steels. Excellent resistance to heat (upto 900°C) and corrosion. Applications include shovel, excavator and dragline, track pads, mantle and other manganese steel parts.
DIFFUSALOY 618 X  AC/DC	TENSILE STRENGTH : 60 - 65 kgf/mm² (Min.) Elongation : 35% (Min.) Size (mm) : 4.00 5.00 Current (amps) : 100-160 140-190	High recovery electrode for joining and overlaying manganese steels and joining these to other steels. Excellent resistance to abrasion, friction, heat and mild corrosion. Applications include shovel, excavator and dragline, track pads, mantle and other manganese steel parts.
UNILOY 620  AC/DC+	TENSILE STRENGTH : 65 kgf/mm² (Min.) Elongation : 25% (Min.) Hardness : 160 - 180 BHN Size (mm) : 3.15 4.00 Current (amps) : 60-110 110-140	For joining and overlaying medium and high carbon steels. Also for restrained joints and for joining carbon steels to stainless steels. Deposits offer high tensile strength, ductility, heat and corrosion resistance. Applications include track pad, furnace parts and for cladding stainless steels.

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
UNILOY 624  AC/DC+	TENSILE STRENGTH : Upto 85 kgf/mm² (Min.) Elongation : 30% (Min.) Hardness : 220 BHN Size (mm) : 2.50 3.15 4.00 5.00 Current (amps) : 45-80 60-110 100-150 140-190	A duplex structure joining electrode recommended for unknown and dissimilar steels. Deposits are tough, having very tensile strength and recommended for ... ox main shaft, counter shafts, repair of ... nd dies, joining wear plates, tip adapto... ydraulic excavators, buckets etc.
UNILOY 624 S  AC/DC+	UTS : Upto 85 kgf/mm² (Min.) Elongation : 25% (Min.) Hardness : 200 - 220 BHN Size (mm) : 2.50 3.15 4.00 5.00 Current (amps) : 50-80 60-110 100-150 140-190	A specially designed high stre... ustenitic electrode with duplex structure... ing and overlaying dissimilar and a ver... range of alloy steels. Easy to use with ... arc, low spatter and even bead format... iversally accepted product, having uses in... lly every type of industry.
DIFFUSALOY 628  AC/DC+	UTS : 60 kgf/mm² (Min.) Elongation (L=4d) : 25% (Min.) Hardness : 160 - 190 BHN Size (mm) : 2.50 3.15 4.00 Current (amps) : 50-85 60-110 100-150	Specially designed for joining and ...erlaying on medium carbon steel, low and high alloy steels, stainless steels and silicon steels (laminations). Deposit exhibits high tensile strength, ductility, heat and corrosion resistance. Recommended for welding of silicon steel stampings.
UNILOY 685	TENSILE STRENGTH : 68 kgf/mm² (Min.) Elongation : 30% HARDNESS : 160 - 190 BHN Size (mm) : 2.5 3.15 4.00 5.00 Current (amps) : 45-85 80-110 100-140 140-190	A unique low heat input electrode with superior alloy formulation for high strength joining and cushioning of medium and high carbon steels, tool and die steels, stainless steels, and stainless to carbon steels. Also recommended for overlays on carbon steels for corrosion resistance and high temperature service upto 1100°C. Parting tools, joining hadfied steel parts in earth-moving machinery, track pads furnace parts, cooler plates, sugar mill roller journals etc.
DIFFUSALOY 800 ELH  AC/DC+	TENSILE STRENGTH : 55 - 60 kgf/mm² Yield Strength : 44 - 48 kgf/mm² Elongation (L=5d) : 30% (Min.) CVN Impact (+20° C) : 80 J (Min.) Size (mm) : 3.15 4.0 5.00 Current (amps) : 100-140 130-170 160-200	A basic coated all positional 'Extra Low Hydrogen' electrode providing X-Ray quality welds on mild steels, medium carbon and low alloy high strength steels. Deposits are free from hydrogen induced embrittlement. Can be used on dirty steels and applications include automotive frames, hubs, steel gears, sprockets, loco frames, steelcasting defects etc.
DIFFUSALOY 815 SPECIAL  AC/DC+	TENSILE STRENGTH : 630 N/mm² (Min.) YIELD STRENGTH : 530 N/mm² (Min.) Elongation (l=4d) : 16% (Min.) CVN Impact (+20° C) : 50 J (Min.) Size (mm) : 3.15 4.00 5.00 Current (amps) : 90-120 120-150 150-200	A newly Specially formulated basic coated Cr Ni Mo V alloy designed for welding Creep Resistant Boiler and pipe steels and cast steel of identical composition, subjected to operating temperatures of upto +600°C. It is recommended for joining or building up carbon steels, alloy steels, without porosity or cracking, with exceptionally high mechanical properties. Applications include welding cast steel of identical composition, creep-resistant Cr Ni Mo V steels in boiler and piping system construction etc. Specially for material grade such as G 17Cr Mo V 5-10.

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
DIFFUSALOY 818  AC/DC+	TENSILE STRENGTH : 56 - 62 kgf/mm² Yield Strength : 48 kgf/mm² (Min.) Elongation : 20% (Min.) Size (mm) : 3.15 4.00 5.00 Current (amps) : 100-140 130-170 160-200	A basic coated 'Low Hydrogen Electrode' for low alloyed Cr-Mo steels, tempered steels etc. Designed for all positional welding and scale resistant upto 550°C. Ideal for manufacturing vessels and pipe lines etc.
DIFFUSALOY 1018  AC/DC	TENSILE STRENGTH : 73 kgf/mm² (Min.) Yield Strength : 69 kgf/mm² (Min.) Elongation (L=4d) : 20% (Min.) CVN Impact (-50° C) : 30 J (Min.) Size (mm) : 3.15 4.00 5.00 Current (amps) : 90-140 140-180 190-250	All positional hydrogen controlled electrode with alloying elements like Ni-Cr-Mo providing high strength deposit. Deposit gives radiographic quality and resist creep upto 550°C. Ideal for repairing of parts of HEMM, armour steel etc.
DIFFUSALOY 6180  AC/DC+	TENSILE STRENGTH : 70 kgf/mm² (Min.) Elongation (L=5d) : 30% (Min.) CVN Impact (+20° C) : 50 J (Min.) Size (mm) : 3.15 4.00 5.00 Current (amps) : 80-120 100-160 140-190	A superior joining electrode having excellent resistance to impact and abrasion. Electrode exhibits ability to weld in all position, easy slag detachability and extra crack resistivity. Major application includes high strength joining and heavy build up of Mn steel in mining and earth moving industries.
CA 7018	TENSILE STRENGTH : 55 - 60 kgf/mm² YIELD STRENGTH : 44 kgf/mm² (Min.) Elongation (l=5d) : 25% (Min.) CVN Impact (–20° C) : 75 J (Min.) Size (mm) : 3.15 4.00 5.00 Current (amps) : 100-140 130-170 160-200	A low Hydrogen "Lo Temp" electrode designed for X-ray quality welds on mild steels, medium carbon and low alloy strength steels. Deposits offer resistance to hydrogen-induced embrittlement. It is an all positional electrode for joining of medium carbon low alloy steels and machining steel without porosity or cracking. The deposits are radiographic type having very high physical properties. Applications include pipelines, tankers, crane booms, steel gears, loco frames etc.
DIFFUSALOY 8018 W2  AC/DC+	TENSILE STRENGTH : 50 kgf/mm² (Min.) Yield Strength : 36 kgf/mm² (Min.) Elongation (L=5d) : 22% (Min.) % Reduction in Area : 40% (Min.) CVN Impact (+20° C) : 50 J (Min.) Size (mm) : 2.5 3.15 4.00 5.00 Current (amps) : 60-85 90-120 120-150 150-200	A unique product designed specially for welding the low-alloy, high-strength 'weathering' grade steels such as ASTM A588 and A242. A specially formulated coated 'Extra Low Hydrogen' 'Low Temp' alloy designed for X-ray quality welds on mild steels, medium carbon and low alloy high strength steels. It is recommended for joining or building up carbon steels and alloy steels, without porosity or cracking (especially of the hydrogen induced type), with exceptionally high physical properties. An all-position electrode with high impact strength.

STAINLESS STEEL

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
DIFFUSALOY ZF **AC/DC+** 	TENSILE STRENGTH : 60 kgf/mm² Elongation : 30 - 45 % Size (mm) : 2.00 2.5 3.15 4.00 Current (amps) : 35-45 50-70 80-100 110-140	A specially developed 'ZERO FERRITE' ...ainless steel electrode for all positional weldi... ...is fully austenitic stainless steel grade 316 L ... ...able for Urea reactors, chemical plants wh... ...osion resistance is required against stron... ...ing or nitrogenous media.
DIFFUSALOY **253 MA**  **AC/DC+**	TENSILE STRENGTH : 70 kgf/mm² (Min.) Elongation (L=5d) : 25% (Min.) CVN Impact (+20° C) : 50 J (Min.) Size (mm) : 2.5 3.15 4.00 5.00 Current (amps) : 45-70 85-115 100-135 135-170	High strength low temp austenitic ... steel electrode that contain special ... ...loying elements. Stable Fusion, Easy Sla... ...l and Smooth and Bright bead appearanc... It is used in Furnace compo... ...Ovens, Petrochemical and Refinery tub... ...s, In Power boilers etc.
DIFFUSALOY **304 L**  **AC/DC+**	TENSILE STRENGTH : 53 kgf/mm² (Min.) Elongation : 35% (Min.) Size (mm) : 2.00 2.5 3.15 4.00 Current (amps) : 35-45 50-60 80-100 110-140	An ELC type basic coated contro... ferrite electrode, resists corrosion & high temperature upto 800°C. The weld metal has excellent creep strength. Used for joining and overlaying AISI 301, 302, 304, 308 and also in dairy & chemical industry.
DIFFUSALOY **309 L**  **AC/DC+**	TENSILE STRENGTH : 53 kgf/mm² (Min.) Elongation (L=5d) : 30% (Min.) HARDNESS : 160 - 190 BHN Size (mm) : 2.5 3.15 4.00 5.00 Current (amps) : 40-90 60-110 100-140 140-190	A 'Low Temp' all positional austenitic stainless steel electrode for the welding of stainless steels of AISI types 309, 316 clad steels and 310. It is also used for dissimilar and unknown stainless steels and for joining these to steels. Recommended for overlays on carbon steels of corrosion resistance and high temperature service upto 1100°C. Ideal for welding furnace parts, heat exchangers, heat treatment boxes, kiln cooler plates and for clad steels.
DIFFUSALOY **309 Mo**  **AC/DC+**	TENSILE STRENGTH : 58 kgf/mm² (Min.) Elongation (L=5d) : 26% (Min.) Size (mm) : 2.5 3.15 4.00 5.00 Current (amps) : 40-70 70-100 90-135 130-165	A 'Low Temp' all positional austenitic stainless steel electrode for the welding of stainless steels of AISI types 309, 316 clad steels and 310. It is also used for dissimilar and unknown stainless steels and for joining these to steels. Recommended for overlays on carbon steels of corrosion resistance and high temperature service upto 1100°C. Ideal for welding furnace parts, heat exchangers, heat treatment boxes, kiln cooler plates and for clad steels.
DIFFUSALOY **316 L**  **AC/DC+**	TENSILE STRENGTH : 55 kgf/mm² Elongation (L=4d) : 30% (Min.) Size (mm) : 2.5 3.15 4.00 5.00 Current (amps) : 40-70 80-100 100-130 130-160 CVN Impact Strength (20° C) : 9-12 kgfm/cm²	A 'Low Temp' Extra Low Carbon all positional austenitic stainless steel electrode for the welding of stainless steels of AISI types 316, 316L, 317 and 318. Deposits of Diffusaloy 316L offer superior resistance to intergranular corrosion. For production and maintenance applications in chemical and paper industries, where service conditions demand excellent resistance to pitting and corrosion under strongly oxidizing media.

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
DIFFUSALOY 347  AC/DC+	TENSILE STRENGTH : 53 kgf/mm² (Min.) Elongation : 30% (Min.) Size (mm) : 2.5 3.15 4.00 5.00 Current (amps) : 40-70 60-100 80-130 130-160 CVN Impact Strength (- 20° C) : 8-12 kgfm/cm²	A specially designed Low Temp austenitic stainless steel electrode for all position welding of stabilized austenitic stainless steel grades, like AISI 321, 347 etc. The special additions make the weld metal resistant to intergranular corrosion. Excellent for applications in Dairy, Food, Chemical and Nuclear plants. Since the weld metal is stabilized, it is not susceptible to sensitization, i.e. Chromium carbide precipitation.
DIFFUSALOY 905  AC/DC+	TENSILE STRENGTH : 55 kgf / mm² (Min.) Elongation : 30% (Min.) Size (mm) : 2.5 3.15 4.00 5.00 Recommended Welding Current (Amps) : 50-75 80-110 100-140 140-180	A special low heat input electrode developed with superior alloy formation which offers controlled Ferrite-Austenite structure for high strength joining and cushioning of medium and high carbon steels, tool and die steels. Special Application includes Anchor joining, Stainless steel to mild steel, Inlet feed Pipe of Sponge Iron Plant. Parting tools, joining Hadfield steel parts in earthmoving machinery, track pads, furnace parts, cooler plates, sugar mill roller journals etc.
DIFFUSALOY 908 L  AC/DC+	TENSILE STRENGTH : 53 kgf/mm²(Min.) Elongation (L=4d) : 35% (Min.) CVN Impact (+20°C) : 80 J (Min.) Size (mm) : 2.50 3.15 4.00 5.00 Current (amps) : 40-70 55-100 75-130 125-160	An ELC type austenitic stainless steel electrode for all positional welding of AISI 301, 302, 304, L and 308 stainless steels. Alloy exhibits exceptional weldability with spatter free deposits. Excellent for welding all above grades of stainless steels in dairy, food and chemical industries and nuclear plants with minimum carbide precipitation.
DIFFUSALOY 910  AC/DC+	TENSILE STRENGTH : 57 kgf/mm² (Min.) Elongation (L=4d) : 30% (Min.) CVN Impact (+20°C) : 80 J (Min.) Size (mm) : 2.50 3.15 4.00 5.00 Current (amps) : 40-70 60-100 80-135 130-175	An all positional austenitic stainless steel electrode for the welding of AISI 309 and 310 stainless steels. Excellent resistance to high temperature oxidation (upto 1100°C). Applications include furnace parts, heat exchangers, heat treatment boxes, furnace stands, heating elements, kiln cooler plates and for clad steels.
DIFFUSALOY 916 L  AC/DC+	TENSILE STRENGTH : 55 kgf/mm² (Min.) Elongation (L=5d) : 30% (Min.) CVN Impact (+20° C : 80 J (Min.) Size (mm) : 2.50 3.15 4.00 5.00 Current (amps) : 40-70 60-100 75-130 125-160	An ELC type all positional austenitic stainless steel electrode for welding of AISI 316,316 L, 317 and 318 stainless steels. Superior reistance to intergranular corrosion. Minimum carbide precipitation helps in welding of components in chemical, paper and fertilizer industries.
DIFFUSALOY 917 L  AC/DC+	TENSILE STRENGTH : 56 kgf/mm² (Min.) Elongation (L=5d) : 35% (Min.) Size (mm) : 2.50 3.15 4.00 5.00 Current (amps) : 40-70 60-110 90-150 135-185	An ELC type austenitic stainless steel electrode for all positional welding of AISI 317, 317 L, 318 stainless steel. Joining and overlaying on a wide range of dissimilar steels. Special alloy chemistry provides a better working temperature from -60°C to +550°C. Weld metal is resistant to hot cracking and microfissuring.

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
NODURON 60	TENSILE STRENGTH : 45 - 50 kgf/mm² HARDNESS : 180 BHN Elongation (l=5d) : 15% (Min.) CVN Impact (–20° C) : 75 J (Min.) Size (mm) : 3.15 4.00 5.00 Current (amps) : 70-100 120-160 160-210	A specially developed basic graphite coated electrode consisting of a very complex flux chemistry. The flux coating is designed to give a fully covering slag, which can be easily removed after the bead is cooled. Hence both the transition zone as well as HAZ are FULLY MACHINABLE, even with a HIGH SPEED STEEL TOOL. It used for welding all types of cast irons - Grey cast iron, malleable cast iron, nodular cast iron or ductile iron-pearlitic as well as ferritic varieties. It can also weld cast iron to steel, dirty, oily cast irons thick to thin cast irons.
FEROCAST 102	Size (mm) : 3.15 4.00 Current (amps) : 80-120 100-150	For conditioning the contaminated surface on cast iron prior to use of superior machinable cast iron product. Deposits are quick freezing type and non-machinable.
CACI 150	HARDNESS : 140 - 180 BHN U.T.S. : 37 - 44 kgf/mm² Size (mm) : 2.50 3.15 4.00 5.00 Current (amps) : 40-70 70-110 90-120 120-170	CACI150 is an electrode with Ferro Nickel core wire for welding cast iron without preheating. Recommended for repairing of cast iron, filling foundry defects with perfect colour match. Can be used for malleable and S.G. Iron.
CINOD 160	TENSILE STRENGTH : 35 - 40 kgf/mm² HARDNESS : 150 - 210 BHN Size (mm) : 2.50 3.15 4.00 5.00 Current (amps) : 50-85 80-120 100-140 120-170	A high nickel type of electrode formulated for high strength joining of nodular iron with exceptional crack resistivity. The deposits are machinable. Suitable for pump casing, valve bodies, valve flanges, beli housing, motor covers etc.
CACI 540	TENSILE STRENGTH : 35 - 40 kgf/mm² HARDNESS : 140 - 170 BHN Size (mm) : 2.50 3.15 4.00 5.00 Current (amps) : 45-75 75-110 100-140 130-170	A newly formulated low heat input, highly crack resistant cast iron electrode for Nodular iron casting, malleable, as well as grey irons with excellent machinability. Recommended for high strength joints on C.I. housings, dies & for joining cast irons to steels.
CACI 650	TENSILE STRENGTH : 30 - 35 kgf/mm² Size (mm) : 2.50 3.15 4.00 5.00 Current (amps) : 45-75 75-110 100-140 130-170	A new economical nickel-copper alloy for build up and joining various types of cast iron and cast iron to steels. The deposits are machinable and very much suitable for filling up cast iron castings, pump bodies, rebuilding missing sections etc.

CAST IRON

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
GRELOY 850	TENSILE STRENGTH : 30 - 35 kgf/mm² HARDNESS : 150 - 180 BHN Size (mm) : 2.50 3.15 4.00 5.00 Current (amps) : 45-80 60-110 80-130 100-170	A pure nickel electrode for m... ...num machinability, suitable for build up a... ...e for joining various types of cast iron and ... ...on to steels. Applications include machine ba... ...inder blocks, motor / generator/pump ca... ...eller, machine slide etc.
SUPERCINOD 1600	TENSILE STRENGTH : 40 - 48 kgf/mm² YIELD STRENGTH : 30 - 40 kgf/mm² HARDNESS : 150 - 200 BHN Size (mm) : 2.50 3.15 4.00 5.00 Current (amps) : 50-85 80-120 100-140 100-170	A special cast iron electrode with ... ...overy. Specially designed for ductile, m... ...e and crack resistant repair welding on ... ...odular cast iron and malleable iron and jo... ...me to steel. Recommended for use on dirty, aged & burnt cast iron.

METAL WORKING

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
SUPERCUT	Size (mm) : 3.15 4.00 5.00 Current (amps) : 125-300 150-325 175-350	AC/DC cutting electrode for cutting, piercing & removing all metals using standard electric arc welding equipment.
SUPERGOUGE	Size (mm) : 3.15 4.00 5.00 Current (amps) : 130-190 200-260 275-325	An AC/DC, highly efficient electrode for chamfering and grooving all ferrous & non-ferrous metals using std. electric arc welding eqpt. No air or oxygen is necessary.
CARBOFUSE DC (-)	Size (mm) : 7.00 8.00 Current (amps) : 130-60 140-280	Dual electrode for gouging or bevelling all metals by air- arc gouging process (carbofuse G) as well as for fusing paste SOP (Carbofuse F). Special copper coating remains intact & does not get overheated unlike the normal rods.

BRAZING ALLOY

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
DIFFUSALOY 155	TENSILE STRENGTH : 40 - 45 kgf/mm² Brazing Temp. : 820 - 870°C Size (mm) : 3.15 x 450	A general purpose brazing alloy for joining mild, low carbon and galvanised steel, copper and copper-base alloys. For fillet and butt joints on mild steel, low carbon and galvanised steel sheets, tubes and plates, dissimilar joints between steel and copper, brasses and bronzes. Available in bare as well as coated variety.
DIFFUSALOY 181	TENSILE STRENGTH : 50 - 60 kgf/mm² Brazing Temp. : 820 - 870°C Size (mm) : 3.15 x 450	For build up and overlaying cast irons and steels and also suitable for joining dissimilar metals including copper alloys. Applications include spur gear teeth, bearing surfaces and shafts. Alloy deposits have low - coefficient of friction and are machinable. Available in bare as well as coated variety.
DIFFUSALOY 202	TENSILE STRENGTH : 27 - 33 kgf/mm² Brazing Temp. : 750 - 850°C Size (mm) : 1.6 x 450 to 3.15 x 450	A low-melting, self-fluxing alloy for joining copper assemblies and for joining copper-base alloys. Applications include electric motor manufacture, commutator joints, electrical contacts, refrigeration tubes and assemblies.
DIFFUSALOY 242	TENSILE STRENGTH : 40 - 45 kgf/mm² Brazing Temp. : 700 - 850°C Size (mm) : 1.6 x 450 Shim (mm) : 0.12 x 25	High tensile, low bonding temperature, silver type alloy for high strength joining of all metals except white metals. Excellent for joining brass, mild and alloy steels to stainless steel. Applications include T square, butt and flange joints.
DIFFUSALOY 252	TENSILE STRENGTH : 48 - 53 kgf/mm² Brazing Temp. : 600 - 750°C Size (mm) : 1.6 x 450 Shim (mm) : 0.12 x 25	A high silver brazing alloy for high strength and for thick and thin flowing applications. Ideal for tungsten carbide tipping, carbon, alloy steels, stainless steels, nickel alloys, copper and copper alloys and dissimilar metals. Forlap, "T" square butt and flange joints.
DIFFUSALOY 262	TENSILE STRENGTH : 58 - 65 kgf/mm² Brazing Temp. : 600 - 750°C Size (mm) : Rod : 1.6 x 450 Shim (mm) : Shim : 0.12 x 25	An extremely versatile low melting alloy having very high percentage of silver with excellent weldability for thin flow applications on copper nickel, carbon and alloy steels. Provides high strength joints on dissimilar metal joining applications.

For all brazing alloys separate flux is to be used except for Diffusaloy 155C & Diffusaloy 181C which are flux coated type. Silver alloys of any composition can be provided depending upon requirement & applications.

POWDER ALLOYS FOR NECK RINGS

Application	Powder	Hardness HRC	Finishing	Powder size range (μm)				Materials of neck rings	
				1	2	3	4	Cast iron	Aluminium-bronze
POWDER WELDING	LSN N-150-PW	13-17	Finished by grinding	106-20	90-20	75-20	53-20	•	
	LSN N-250-PW	22-27	Finished by grinding	106-20	90-20	75-20	53-20	•	
	LSN N-300-PW	28-33	Finished by grinding	106-20	90-20	75-20	53-20	•	
	LSN N-340-PW	31-36	Finished by grinding	106-20	90-20	75-20	53-20	•	•
PTA	LSN NA-322-PL	30-35	Finished by grinding	180-75	150-63	125-53		•	
	LSN NA-321-PL	30-35	Finished by grinding	180-75	150-63	125-53		•	
	LSN NA-330-PL	30-35	Finished by grinding	180-75	150-63	125-53			•

POWDER ALLOYS FOR MOULDS AND COMPONENTS

Application	Powder HRC	Hardness	Finishing	Powder size range (µm)				Repairs	Guide rings	Guide sleeves	Baffles	Bottom plates	Funnels	Blow heads	Blank Moulds		Finish moulds	
				1	2	3	4								 Edges	 Neck and baffle matches	 Edges	 Neck and bottom plates
POWDER WELDING	LSN N-150-PW	13-17	Can be filed	106-20	90-20	75-20	53-20	•										
	LSN N-180-PW	16-21	Can be filed	106-20	90-20	75-20	53-20	•					•	•	•			
	LSN N-250-PW	22-27	Can be filed	106-20	90-20	75-20	53-20		•		•	•	•	•	•		•	
	LSN N-270-PW	24-29	Finished by carbide tools and grinding	106-20	90-20	75-20	53-20		•	•	•	•	•	•		•		•
	LSN N-300-PW	28-33	Finished by carbide tools and grinding	106-20	90-20	75-20	53-20		•	•	•	•	•	•		•		•
	LSN N-310-PW	28-33	Finished by carbide tools and grinding	106-20	90-20	75-20	53-20		•	•		•	•	•	•		•	
	LSN N-340-PW	31-36	Finished by carbide tools and grinding	106-20	90-20	75-20	53-20		•			•	•	•		•		•
PTA	LSN N-350-PL	22-27	Can be filed	180-75	150-63	125-53									•		•	
	LSN N-270-PL	24-29	Finished by grinding	180-75	150-63	125-53			•			•						
	LSN N-281-PL	25-30	Finished by grinding	180-75	150-63	125-53			•			•						
	LSN N-321-PL	30-35	Finished by carbide tools and grinding	180-75	150-63	125-53			•			•				•		•
	LSN N-322-PL	30-35	Finished by carbide tools and grinding	180-75	150-63	125-53			•			•				•		•
	LSN N-330-PL	30-35	Finished by carbide tools and grinding	180-75	150-63	125-53			•			•				•		•

COBALT-BASED POWDER ALLOYS FOR SURFACE ENGINEERING

POWDER	Powder size range (µm)						Hardness HRC	APPLICATION			DESCRIPTION AND SUGGESTED USES
	Flame Spray			PTA/Laser cladding				Flame spray	PTA GTA	Laser Cladding	
	1	2	3	1	2	3					
LSN C-06PL				180-75	150-63	125-53	38-43		•	•	Recommended to resist corrosion, impact and oxidation at elevated temperatures. Can be applied by PTA or laser. Steam and chemical valves. Hot steel handling equipment such as tongs, shear blades, guides.
LSN C-12PL				180-75	150-63	125-53	47-52		•	•	Provides good wear and corrosion resistance at elevated temperatures
LSN C-21PL				180-75	150-63	125-53	27-35		•	•	C-21 provides good corrosion and chemical resistance combined with good ductility and resistance to thermal shock. Used for gas turbine blades, extrusion dies and forging equipment.
LSN C-480FS	125-45	106-38	90-38				45-50	•			Spray fusible version of C-06-PL. Contain melting point reducers to alloy self-fluxing action.
LSN C-590FS	125-45	106-38	90-38				56-61	•			Spray fusible version of C-12-PL. Contain melting point reducers to alloy self-fluxing action.

NICKEL-BASED POWDER ALLOYS FOR SURFACE ENGINEERING

POWDER	Hardness HRC	APPLICATION					DESCRIPTION AND SUGGESTED USES
		Powder welding	Flame spray	PTA GTA	HVOF	Laser Cladding	
LSN N-120	10-15	•					Formulated to produce overlay for non-magnetic steels. Oil and gas explorations: stabilizers.
LSN N-251	23-28			•		•	Excellent corrosion resistance to oxidising media and high resistance to intregranular corrosion and stress corrosion cracking. Good high temperature strength. Oil and gas explorations: stabilizers.
LSN N-280	25-30	•					Low hardness alloy. Formulated to produce high quality, low porosity overlays and easy applications. Oil and gas explorations: used in combination with tungsten carbide segments to protect down hole drilling stabilisers.
LSN N-321	30-35	•		•		•	Good oxidation and bond strength provides a suitable baffle layer when applying high hardness/highly stressed overlays. Oil and gas explorations: stabilizers..
LSN N-330	30-35	•	•	•	•	•	Versatile alloy. Affords good wear and oxidation resistance combined with easy machining. Suitable for repair. Used on con-cast steel rollers. Shafts, sleeves and pistons.
LSN N-380	35-40	•	•	•	•	•	Used where required good ductility, oxidation and corrosion resistance with good machinability. Uses-Petroleum industry: pump shafts, bushes and sleeves, wear rings, sucker rod couplings, centrifugal pump parts. Mining: crusher shafts.
LSN N-480	45-50	•	•	•	•	•	Good abrasion and corrosion resistance. Uses include diesel valves, rocker arms, bearings, pumps sleeves, seal rings, piston rods, brick moulds, mixer blades.
LSN N-530	50-55		•		•		Medium to high hardness with reasonable ductility. Applications: shafts, sleeves and plungers.
LSN N-550	53-58			•		•	Medium to high hardness alooy. Used extensively in the plastics/chemical industries for the protection the flights of screw conveyers.
LSN N-551	52-57			•		•	Special formulation. Forms complex carbide precipitates for excellent abrasion resistance.
LSN N-570	55-60		•		•		Special formulation. Forms complex carbide precipitates for excellent abrasion resistance.
LSN N-580	55-60	•	•	•	•	•	High hardness alloy with excellent resistance to heat and abrasion. Used for the protection of shafts and plungers. Can be finished by carbide tools and grinding.
LSN N-600	57-62		•				Similar to LSN N-580, contains Cu and Mo for higher corrosion resistance.
LSN N-610	59-64		•	•	•	•	Highest hardness NiCrBSi alloy with excellent resistance to heat and abrasion. Used for the protection of shafts and plungers. Machineable by carbide tooling and grinding.
LSN N-611	57-62		•		•		Contains Cu and Mo for excellent corrosion and abrasion resistance.
LSN N-620	59-64	•	•	•	•	•	Most wear resistant alloy in the range. Forms complex carbide precipitates for excellent abrasion resistance.

SURFACING ALLOYS\ NICKEL POWDER WELDING

Diffusion code	LSN code	Hardness HRC	Ni	P	Cr	B	Si	C	Fe	Mo	Cu	W	Application
	N-120	15-20	base			1	2.2				19		Suitable for non-magnetic steels (e.g. industry stabilisers). Soft repair alloy, filed.
225	N-150	13-18	base	2		0.8	2.3		0.2				Suitable for minor repairs, Can be fi by filing.
27	N-180	16-21	base	2		0.8	2.3		0.5				Low hardness, high ductility and exc impact resistance.
	N-200	16-23	base		1	1.5	2.4		1				Repair powder. Excellent at high temperatures
227	N-250	22-27	base	2.1		1.1	2.8		0.3				Used for protection of a variety of Glass Mould components. High quality, low porosity deposits.
	N-270	24-29	base	2.1	2.8	0.9	2.7		0.5				Glass Industry Moulds. Used for protection of mould edges and matched seams.
	N-280	26-29	base			1.7	2.6		0.5				Specially formulated for hardsurfacing of Stabilisers used in the Oil Industry.
230	N-300	28-33	base	2.1	4	0.85	1.8	0.15	0.5	3.5			Developed for Glass Mould components including guide rings, sleeves, baffles. Good for thick deposits.
228	N-310	28-33	base	2		1.1	3.7		0.5				Similar to N-300 but with higher hardness. Can be used to repair some aluminium bronze components.
	N-340	32-36	base	2.1	4	1	2.8	0.15		3			Excellent for G.I. neck ring components. Produces porosity free deposits with good high temperature abrasion resistance.
	N-370	35-39	base	2.1	4	1.3	2.8	0.15	0.5	3.2			Similar to N-340 but with higher hardness. Can be used to repair some aluminium bronze components.
43	N-380	35-40	base		8	1.9	3.1	0.5	2.5				Good all-round repair alloy with low/medium hardness and good impact resistance.
	N-480	45-50	base		13	2.5	3.4	0.45	4.5				Medium hardness and reasonable impact resistance. Good abrasion and corrosion resistance.
63	N-580	55-60	base		15	3	4.6	0.7	4.5				High hardness alloy. Excellent abrasion resistance. Low ductility. Not suitable to resist impact.
88	N-620	59-64	base		17	3	4	0.8	4			17.3	High hardness and excellent resistance to sliding wear. Not suitable for machining without suitable tooling.

Diffusion code	LSN code	Hardness HRC	Ni	Cr	B	Si	C	Fe	Mo	Cu	W	Application
	N-331	30-35	base	6.3	1.2	4	0.37	1.75				Good ductility and crack resistance. Suitable for hydraulic pistons and shafts.
	N-380	35-40	base	8	1.9	3.1	0.5	2.6				Good ductility, oxidation and corrosion resistance. Medium hardness. Used in Petroleum industry: pump shafts, bushes, sleeves, sucker rod couplings.
	N-390	35-43	base	10	1.75	3.2	0.45	2.5			7.5	Excellent resistance to erosion by particle impingement at high temperatures. Used in waste to energy incinerators.
	N-480	45-50	base	13	2.5	3.4	0.45	4.5				Good abrasion and corrosion resistance. Uses include: diesel valves, rocker arms, bearings, pump sleeves, seal rings, piston rods.
	N-530	50-55	base	13	3	4	0.6	3.75				High hardness with reasonable ductility. Applications include shafts, sleeves and plungers.
	N-580	55-60	base	15	3	4.6	0.7	4.5				High hardness alloy with excellent resistance to heat and abrasion. Used for protection of shafts and plungers.
	N-570	55-58	base	13.7	2.6	3.7	0.6	3.5	15			Alloy precipitates complex carbide hard phases which afford excellent resistance to sliding wear. Can be finished with carbide tools and grinding. Widely used for glass mould NNPB plungers.
	N-591	57-61	base	12.5	3	3	0.5	3.8	12.5			Similar to N-570. Higher hardness and lower ductility. Can be finished with carbide tools and grinding.
628A	N-610	59-64	base	17	3.3	4.3	0.9	4				Highest hardness NiCrBSi alloy with excellent resistance to abrasion up to 650°C. Used for coating shafts and plungers.
	N-611	57-62	base	14.5	3.3	3.9	0.6	2.5		2.8	3	Similar to N-610 but with superior resistance to corrosion when exposed to certain acids and aqueous media.
	N-616	58-64	base	17	3.8	4	0.6	3		2.5	3.3	High Cr and Mo contents provide excellent resistance to chemical corrosion. Suitable for applying as thick coating if required.

LSN code	Hardness HRC	Ni	Cr	B	Si	C	Fe	Mo	AI	Mo	Nb	Mn	Application
N-260	22-30	base	3.4	1.25	3.2	0.2	1.25						Low hardness, high ductility and ...ily machinable. Suitable for repair ... protection of glass mould com... ...s.
N-281	25-30	base	3	1.1	2.9	0.12	1		0.8				Similar to N-260. Suitable for ... ...m bronze substrates.
N-321	30-35	base	5	1	3.6	0.25	1.25		0.75				Low/Medium hardness allo... ...ed for Glass Mould Neck Rings.
N-330	30-35	base	5.8	1	4.1	0.3	1.5						Good wear and hot wear r... ...Suitable for Glass Mould Neck Rings... ...m bronze substrates. Also su... ...s a ductile intermediate bond layer wh... ...ying low ductility overlays.
N-380	35-40	base	8	1.9	3.1	0.5	2.5						Good ductility, oxidation and corrosion resistance. Medium hardness. Suitable for component repair and surface build up.
N-390	35-43	base	10	1.75	3.2	0.45	2.5	7.5		7.5			Excellent high temperature wear resistance. Good machining properties.
N-480	45-50	base	13	2.5	3.4	0.45	4.5	7.5		7.5			Good abrasion and corrosion resistance. Reasonable ductility and crack resistance.
N-550	51.56	base	17.5	2	5	1	5						Specially formulated to retain high hardness when applied by PTA welding. Widely used in Plastics industry (screw conveyor flights).
N-580	55.60	base	15	3	4.6	0.7	4.5						High hardness alloy with good resistance to wear and corrosion.
N-i625* Inconel*	N/A	base	21.8		0.4		4	9			3.6	0.5	Excellent corrosion resistance, used extensively in chemical processing. Also suitable as an intermediate layer when applying hard protective alloys to difficult substrates.
N-500	~50	base		3	3.1								High hardness, good ductility and resistance to abrasion. Often combined with fused tungsten carbide for a wear resistant coating to extend the service life of coal and oil sand extraction equipment.

Grade	Hardness HRC	Co	C	Cr	Cu	B	Si	Fe	Mo	Ni	W
PTA and HVOF Grades											
C-01	50-58	base	2.5	29			1.8				12.5
C-06	38.46	base	1.2	29			1.2				4.5
C-06H	42.46	base	1.4	30			1.3				5.5
C-06L	40-44	base	1.2	29							4.5
C-12	47-53	base	1.5	29			1.7				8
C-12H	50-54	base	1.7	30			1.45	0.5			9
C-F	35-46	base	1.8	25.5						24	12
C-21	27-35	base	0.3	27			0.5	2.5	5.5	2.5	
C-190	52-60	base	3.3	27			0.9				14
Self Fluxing Flame Spray Grades											
C-430	40-46	base	0.6	16		2	1.9			23.5	7.6
C-480	45-50	base	1.1	18.5	0.8	1.7	3	2.5		13.3	8
C-590	56-61	base	0.8	19		3.5	2.75	2.5		18	10
C-600	58-63	base	1.5	19		3	3.1	1		14	15
C-620	60-64	base	1.3	19		3.5	3.1	1.5		14	17

SURFACING ALLOYS\ CARBIDE BLENDS

Diffusion Grade	LSN Grade	Application	Tungsten Carbide	%Tungsten Carbide	Matrix Hardness HRc
	NWA-591-35FS	Flame Spray	Agglomerated & sintered	35	57 - 61
	NWA-580-25FS	Flame Spray	Agglomerated & sintered	25	55 - 60
	NWA-610-40FS	Flame Spray	Agglomerated & sintered	40	59 - 64
	NWA-541-40HV	HVOF	Agglomerated & sintered	40	53 - 58
	NWA-571-40HV	HVOF	Agglomerated & sintered	40	55 - 60
705	NWC-580-50PL	PTA	Cast	50	55 - 60
	NWA-330-60PL	PTA	Cast	60	30 - 35

LSN Grade	Fe	Ni	B	Cr	C	Mn	Si	O	AD	Hall Flow	HRc	HR
F-801-HD	Bal	5.5	3.4	14	2.1	0.3	3		4.5 gm/c	12-17 sec		
F-801-LD	Bal	5.9	3.3	14.1	2	0.3	2.75	0.17	2.7-3.5gm/c	25-35 sec		
F-139	Bal	0	5	20	0.75							
F-400	Bal	12	3.5	32	0.6						38-43	
F-600*	Bal	12	3.6	32	0.6						>50	
F-650*	Bal	8	4.1	32	0.6						>55	

ATOMIZED POWDER SIZE DISTRIBUTION

Powder weld (Puddle torch)

Code	Particle Size Range µm	Mesh #
PW1	106 to 20	140 to 625
PW2	90 to 20	170 to 625
PW3	75 to 20	200 to 625

Flame spray and fuse

Code	Particle Size Range µm	Mesh #
FS1	125 to 45	120 to 325
FS2	106 to 38	140 to 400
FS3	90 to 45	170 to 325

HVOF and plasma spray

Code	Particle Size Range µm	Mesh #
HV1	63 to 20	230 to 625
HV2	53 to 20	270 to 625
HV3	53 to 15	270 to (N.A.)
HV4	63 to 15	230 to (N.A.)
HV5	53 to 15	270 to 550

PTA and Laser

Code	Particle Size Range µm	Mesh #
PL1	180 to 75	80 to 200
PL2	150 to 63	100 to 230
PL3	125 to 53	120 to 270

Braze filler metals are supplied in the following standard PSDs

Code	Particle Size Range µm	Mesh #
BF1	<106	<140
BF2	<90	<170
BF3	<63	<230
BF4	<53	<270
BF5	<45	<325

HIGH TEMPERATURE BRAZING FILLER METALS, PASTES AND AIDS

High temperature brazing, developed some 60 years ago, has become an essential tool used in the manufacture of components made from stainless steel and other high temperature materials, especially for complex or intricate designs with many joints. The LSN Diffusion manufacturing and technical team members have been part of the continuous development in brazing filler metal chemistries and application technologies.

Today LSN Diffusion offers the widest possible range of nickel based brazing filler metals, brazing pastes and aids. Small lot sizes of customized or experimental brazing filler metals can be supplied to aid in development projects. Larger production quantities are supplied on a spot or long-term contract basis.

Customized binders

LSN Diffusion offers a range of standard and customized binders used to facilitate the placement of the brazing filler metal.

The binders may be organic or water based and designed for manual, automatic, spray, stencilling and print based methods.

Frequently used binders include:

\\ LSNi-BrazBinder

\\ LSNi-BrazBinder-2

LSNi-BrazStop

LSNi-BrazStop is a versatile allpurpose masking agent used to prevent the flow of brazing filler metal where it is not required. Available as a water-based formulation and in 1 litre and bulk containers.

BRAZING FILLER METAL GRADES

LSN code	Ni	Cr	B	Si	P	Fe	C	Mn	W	Cu	Melting range °C	AWS A5.8	AMS	EN ISO 17671:2010	Description
LSNiBraz 1	Base	14	3.25	4.5		4.5	0.75				980-1060	BNi-1	4775	Ni 600	Strong, [illegible] resistant joints. Suitable [illegible] highly stressed assembl[illegible] e.g. jet engines.
LSNiBraz 1a	Base	14	3.1	4.5		4.5					980-1070	BNi-1a	4776		Carbon [illegible] alternative to LSNiB[illegible] good resistance to che[illegible] corrosion.
LSNiBraz 2	Base	7	3.25	4.4		3					970-1000	BNi-2	4777	Ni 620	Excel[illegible] high stress and temp[illegible] applications e.g. turbi[illegible] nents. Also food [illegible] g equipment.
LSNiBraz 3	Base		4.5								980-1040	BNi-3	4778	Ni 630	Com[illegible] cellent strength and [illegible] resistance. Wide[illegible] for furnace brazi[illegible] aft parts, food hand[illegible] uipment and medi[illegible] vices.
LSNiBraz 4	Base		1.85	3.5							980-1070	BNi-4	4779	Ni 631	Low diffusion and wide melting range. Excellent for wide gap joints.
LSNiBraz 5	Base	19		10							1080-1135	BNi-5	4782	Ni 650	Good oxidation and corrosion resistance at elevated temperatures. Boron free, suitable for nuclear reactor uses.
LSNiBraz 6	Base				11						875-875	BNi-6		Ni 700	Low brazing temperature. Suitable for thin wall sections (jet engine components, tubing, heat exchangers).
LSNiBraz 7	Base	14			10.1						890-890	BNi-7		Ni 710	Excellent braze wetting at low temperatures with low erosion. Good high temperature corrosion properties.
LSNiBraz 8	Base			7				23		4.5	980-1010				Minimal erosion. Highly suitable for brazing thin walled assemblies such as heat exchangers and honeycomb.
LSNiBraz 9	Base	15	3.7								1020-1050	BNi-9		Ni 612	Combines good joint ductility and high hardness.
LSNiBraz 10	Base	12	2.5	3.5		3.5	0.5		16		880-950	BNi-10		Ni 670	High strength at elevated temperatures with good ductility. Suited to brazing substrates containing Mo, W and Co.
LSNiBraz 11	Base	10	2.5	3.5		3.5	0.4		12		970-1095	BNi-11		Ni 671	Similar to LSNiBraz 10 but with free flow. Suitable for thin walled components where close gaps are not possible.
LSNiBraz 12	Base	25			10						880-950	BNi-12		Ni 720	Low processing temperature. Good strength and corrosion resistance.
LSNiBraz 100	Base	25.5		3.5	7						900-1010				Combined properties of high strength and ductility at low brazing temperatures. Good corrosion resistance and low substrate erosion. Widely used in the automotive industry (EGRs).
LSNiBraz 101	Base	13.5			9					5.7	890-970				
LSNiBraz 102	Base	31		4	5.8						990-1050				
LSNiBraz 103	Base	30		4	6						990-1045				

FLUX CORED WIRE

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
CORDIFF 49	HARDNESS : 58 - 62 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 170-230 200-250 260-310 300-360 Voltage (V) : 23-26 24-27 25-28 25-30 Wire Stick-out (mm) : 25-30 25-30 35-45 35-45	A CrC type tubular wire for an abrasion resistant overlay on plain carbon steel, Hadfield manganese steel & gray cast iron. Deposit exhibits multiple hard phases, ensures resistance to low stress scratching abrasion. This wire is recommended for use in mining industries, cement mills etc.
CORDIFF 50	HARDNESS : 50 - 55 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 170-230 200-250 260-310 300-360 Voltage (V) : 23-26 24-27 25-28 25-30 Wire Stick-out (mm) : 25-30 25-30 35-50 35-50	A high carbon, high chrome, tubular wire depositing a weld metal having excellent abrasion resistance under moderately high impact. It is useful for build up of crusher parts, bucket lips & teeth. Multipass deposit is possible.
CORDIFF 55	HARDNESS : 58 - 60 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-240 220-260 260-320 300-360 Voltage (V) : 24-26 25-28 28-30 28-30 Wire Stick-out (mm) : 20-30 20-30 35-45 35-45	A CrC type flux cored wire having excellent resistance to abrasion and moderate impact. Very much useful for the application to resist abrasion accompanied by corrosion. The resulting deposits cannot be heat treated, machined or forged.
CORDIFF 55 Mo	HARDNESS : 57 - 60 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-240 220-260 260-320 300-360 Voltage (V) : 24-26 25-28 28-30 28-30 Wire Stick-out (mm) : 20-30 20-30 38-40 35-45	High C, Cr - Mo alloyed flux-cored wire electrode for hardfacing on parts that are exposed to high abrasive mineral wear. The weld deposit of this electrode has a higher temperature resistance (upto 450°C). Used for pumps, mixer parts, conveyor screws, tyres and liners of cement and power plants.
CORDIFF 59 L	HARDNESS : 55 - 60 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-240 220-260 260-320 300-360 Voltage (V) : 24-26 25-28 28-30 28-30	It is a tubular wire, which deposits a high CrC alloy. It can be used whenever high abrasion accompanied by corrosion is expected. A maximum deposit thickness of 8 mm is recommended. The resulting deposits cannot be heat treated, machined or forged. Applications include Bucket teeth and lips, sand pumps (wet sand possible), catalyst piping, impellers and screws.
CORDIFF 60	HARDNESS : 61 - 63 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-240 220-260 260-320 300-360 Voltage (V) : 24-26 25-28 28-30 28-30 Wire Stick-out (mm) : 25-30 25-30 38-40 35-45	High C, Cr - Nb alloyed flux - cored wire for severe abrasive wear. The weld deposit consists of chrome and niobium - carbides. Weld metal is non machinable. Maximum deposit should be limited to three layers. Very much useful for hardfacing various critical parts of mining equipments, cement and mineral industries.

FLUX CORED WIRE

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
CORDIFF 61	HARDNESS : 63 - 65 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-240 220-260 260-320 300-360 Voltage (V) : 24-26 26-28 28-31 27-30 Wire Stick-out (mm) : 25-30 25-30 38-40 35-45	High C, Cr -Nb-B-alloyed flux -cored wire with special carbides for extreme ness. This combination results in high abra istance. Very much suitable for the ha of mining equipments, augers, impellers gers etc.
CORDIFF 65 Z	HARDNESS : 63 - 65 HRc Hardness reduction : at 400°C app. 4% : at 650°C app. 10% Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-240 220-260 260-320 300-360 Voltage (V) : 24-26 26-28 28-31 27-30 Wire Stick-out (mm) : 25-30 25-30 38-40 35-45	High C, Cr- Mo- Nb- V- W- allo cored wire, which forms extremely hard c This is used for hardfacing extremely strong mineral wear. The dep ains its wear resistance upto 650°C. This wi commended for use in sintering plants, rs, and blast furnace bells.
CORDIFF 67	HARDNESS : 63 - 67 HRC Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 170-230 220-260 260-330 300-360 Voltage (V) : 22-25 24-27 25-29 27-30 Wire Stick-out (mm) : 25-30 25-30 38-40 35-45	Highly alloyed C-Cr-V tubular wire for extreme abrasive wear even at elevated temperatures. Vanadium addition gives the fine grain structure due to which the weld deposit prevents the washout of the matrix and therefore the deposit is very good for extreme high scratch abrasion. Applications include Hardfacings on parts for coal mining equipment, cements and minerals industries etc
CORDIFF 70 T4	HARDNESS : 160 - 180 BHN Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 175-222 175-350 200-375 240-400 Voltage (V) : 23-27 24-28 25-28 26-30 Wire Stick-out (mm) : 25-30 25-30 38-40 35-45	CORDIFF 70 T4 is a tubular wire which produces a low alloyed deposit used for both joining and buildup. The weld metal has a high tensile strength and crack resistance. This special alloy is designed to join and buildup of machine bases, booms, shovel and agriculture equipment, wheels and supporting rollers.
CORDIFF 71T1	TENSILE STRENGTH : 500 - 655 N/mm² YIELD STRENGTH : 400 N/mm² (Min.) Elongation : 22% (Min.) CVN Impact (+20° C) : 47 J (Min.) Wire Diameter (mm) : 1.2 1.4 1.6 Current (Amps) : 110-180 130-220 160-250 Voltage (V) : 20-26 22-28 24-30	Specially developed flux cored wire for all positional welding, which gives radiographic weld metal quality with low hydrogen. It gives high deposition rate. Stable arc. Low spatter loss with easy slag removal. Suitable for welding mild and mild tensile steels. Wire can be use on general rusty and mill scale surface. Using 80%Ar/Balance CO2 or 100% CO2 as the shielding gas. Suitable for welding mild and mild tensile steels material such as St37-2, St-52-3, St-35.8, St-45.8, and also for welding ship building steels, Bridges, Towers, Vehicles, Rolling stocks, Chemical parts and Macherinery, wagons, steel frame etc.

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
CORDIFF 71T5	TENSILE STRENGTH : 525 - 655 N/mm² YIELD STRENGTH : 425 N/mm² Elongation : 22% (Min.) Wire Diameter (mm) : 1.2 1.4 1.6 Current (Amps) : 110-180 130-220 160-250 Voltage (V) : 20-26 22-28 24-30	Specially developed basic flux cored wire for all positional welding, which gives radiographic weld metal quality with low hydrogen. It gives superior strength and impact properties. Arc is stable, low spatter loss with easy slag removal. Using 80%Ar/Balance CO2 or 100% CO2 as the shielding gas. Suitable for Multipass welding of Structural steels, Boiler quality steels, Pressure vessels, Heat Exchanger, Ship-Building, Bridges and Heavy machinery parts.
CORDIFF 200 K	HARDNESS (as deposited) : 180 - 200 BHN (work hardened) : 400 BHN Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-220 220-250 260-300 300-340 Voltage (V) : 24-26 25-27 25-27 26-28 Wire Stick-out (mm) : 25-30 25-30 38-40 35-45	The austenitic weld deposit of the highly alloyed flux - cored wire electrode is corrosion resistant, work hardening, anti - magnetic, heat and thermal shock resistant upto 850° C. Because of the high elongation (40%) the alloy is suitable for ductile buffer layers on old hardfacings and difficult to weld steels.
CORDIFF 203	HARDNESS : 200 BHN Tensile Strength : 63 kg / mm sq. Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-220 220-250 260-300 300-340 Voltage (V) : 24-26 25-27 25-27 26-28 Wire Stick-out (mm) : 25-30 25-30 38-40 35-45	A tubular wire ideal for general fabrication and build up prior to hard surfacing with a special flux including internal vapour phase shielding, which eliminates the need for external shielding gas. Suitable for fillet and butt welds, on site fabrication and maintenance.
CORDIFF 250 K	HARDNESS (as deposited) : 220 - 250 BHN (work hardened) : 450 - 500 BHN Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-220 220-250 260-300 300-340 Voltage (V) : 24-26 25-27 25-27 26-28 Wire Stick-out (mm) : 25-30 25-30 38-40 35-45	Austenitic high manganese and chromium alloyed flux cored wire electrode, The fully austenitic weld deposit is corrosion resistant, non - magnetic, has high plasticity and acts as a buffer, especially on old hardfacing. Deposits are work hardening upto 500 BHN. The deposits resist shrinkage, stress and high impact loading.
CORDIFF 300	HARDNESS : 280 - 325 BHN Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-220 220-250 260-300 300-340 Voltage (V) : 24-26 25-27 25-27 26-28 Wire Stick-out (mm) : 25-30 25-30 38-40 35-45	A low alloyed flux - cored wire electrode for building up applications that can be used for multi - layer welding because the weld metal is crack - free and ductile. Deposits are machinable with carbide tools. Used primarily on tractor wheels, steel shafts, gear and trunion, rail links etc.

FLUX CORED WIRE

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
CORDIFF 308 L	TENSILE STRENGTH : 57 kgf/mm² (Min.) Elongation (L=5d) : 35% (Min.) Wire Diameter (mm) : 1.2 1.6 2.0 2.4 2.8 Current (Amps) : 120-200 180-230 220-250 260-300 300-340 Voltage (V) : 21-25 24-27 25-28 26-28 27-30 Polarity : DC+	Specially developed C-Cr-Ni stainless steel flux cored wire with high alloying content, which produces bright and smooth bead. Due to the presence of Ferrite, the metal has lower susceptibility to cracking intergranular corrosion resistance as ca content is low. For welding and joining steel 304, 304L, 308L a austenitic stainless alloy steels. Also recon type steels and wear resistant overlays for tough and ls.
CORDIFF 309 L	TENSILE STRENGTH : 60 kgf/mm² (Min.) Elongation : 30% (Min.) Wire Diameter (mm) : 1.2 1.6 2.0 2.4 2.8 Current (Amps) : 120-200 180-230 220-250 260-300 300-340 Voltage (V) : 21-25 24-27 25-28 26-28 27-30 Polarity : DC+	Specially developed C- o stainless steel flux cored wire with high ng content, which produces bright and s bead. Such as stainless steel to mild ste Stable and smooth arc, with very good slag detachability. For welding and joining of austenitic stainless steel 301, 302, 304, 305, 308 and 309 type stainless steel. Also recommended for tough and wear resistant overlays on all steels.
CORDIFF 324	TENSILE STRENGTH : 70 kgf/mm² (Min.) Elongation : 20% Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-220 220-250 260-300 300-340 Voltage (V) : 24-26 25-28 26-28 27-30	It is a specially developed flux cored wire with high alloying content, which produces bright and smooth bead. Chemistry is so controlled; the ferrite-austenite duplex structure provides resilience with very high strength. It is used for High strength, crack resistant joining of unknown and dissimilar steels, Hadfield High Carbon and alloy steels. Also recommended for tough and wear resistant overlays on all steels.
CORDIFF 341	TENSILE STRENGTH : 80 kgf/mm² (Min.) Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 170-230 220-260 260-330 300-360 Voltage (V) : 22-26 24-27 25-29 27-30	Specially developed flux cored wire with alloying content of C, Cr and Mo which offer a tough microstructure, specially suitable as a buffer layer and for heavy build up. Weld deposit exhibits high tensile strength, adequate creep rupture strength, and good impact toughness. Used for base layer build up of Roller Press Rolls. Also suitable as a buffer layer and for heavy build up, Impact proof, Frogs, Coarse crusher, Crusher Jaws, HP Rolls, Rails, Beaters.
CORDIFF 356 (SA WIRE)	HARDNESS : 40 - 42 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 160-260 240-280 280-340 320-400 Voltage (V) : 20-26 22-26 24-27 25-28 Wire Stick-out (mm) : 25-30 25-30 38-40 35-45	High Cr, Ni, Mo, Nb, V - alloyed wire. The welding deposit is resistant to corrosion, impact and heat. Best results are achieved by 2-3 layers. Exclusively developed for application like continuous casting rolls etc.

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
CORDIFF 362 (SA WIRE)	HARDNESS : 40 - 47 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 160-240 220-260 260-340 300-370 Voltage (V) : 22-26 22-27 24-28 25-30	It is a Cr, Ni, Mo alloyed tubular wire. The welding deposit is highly suitable for welding on tough, corrosion resistant continuous cast rolls and also wear parts from the steel industry and large machinery. Exclusively developed for applications like continuous casting rolls, Bridge store, depositions to thick areas of water, steam and gas fittings for operating temperatures to 450° C; rope pouring roles; on alloying buffer layers.
CORDIFF 400	HARDNESS : 380 - 430 BHN Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-220 220-250 260-300 300-340 Voltage (V) : 24-26 25-27 25-27 26-28 Wire Stick-out : 25-30 25-30 38-40 35-45	Tubular wire produces a low alloyed deposit for build - up and hardfacing of about 400 BHN. The deposit is tough and resists to impact load. Can be used for multi - layer welding with interpass temperature of 250° C. Very much suitable for cable rolls, coupling, back up rolls, chain links, wheel rims etc.
CORDIFF TT 400	HARDNESS : 55 - 60 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 170-230 220-260 260-330 300-360 Voltage (V) : 22-26 24-27 25-29 27-30	A specially developed tubular wire electrode, which produces highly alloyed deposit for hardfacing of parts subject to extreme wear and impact. The alloy primarily consists of primary Cr carbides and other complex carbides. It gives an extremely wear resistant weld metal with standing intermediate strength of Impact. Used for hardfacing on parts subjected to extreme wear and impact. Screens, wear plates etc.
CORDIFF 450	HARDNESS : 43 - 45 Hrc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-220 220-250 260-300 300-340 Voltage (V) : 24-26 25-27 25-27 26- 28Wire Stick-out : 25-30 25-30 38-40 35-45	Very similar to CORDIFF 400 with higher hardness. For base materials with higher carbon content a buffer layer or preheating must be employed. Applications are wheel rims, chain links, bucket chains etc.
CORDIFF 480 NBS	HARDNESS : 58 - 62 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 170-230 220-260 260-330 300-360 Voltage (V) : 22-26 24-27 25-29 27-30 Welding Parameters : Current : DC+	A tubular wire CORDIFF 480 NBS deposits a high C-Cr-Nb alloyed weld metal used for hardfacing which gives excellent resistant to extreme abrasive wear. Weld deposit consists of chrome and niobium carbides which offers an excellent resistance to abrasion. Good results are achieved by welding in two layers. Used for Hardfacings on parts for coal mining equipment, steel industry, cement industry and mineral industries.

FLUX CORED WIRE

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
CORDIFF 502 (SA WIRE)	HARDNESS : 48 - 51 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 160-260 240-280 280-340 320-400 Voltage (V) : 20-26 22-26 24-27 25-28 Wire Stick-out (mm) : 25-30 25-30 38-40 35-45	Tubular wire depositing a weld metal similar to 440 but more alloyed. Applications include concast rolls, pinch ... hot strip mill table rolls etc. Excellent ...sion resistance and resistance to thermal fat...
CORDIFF 600 OA	HARDNESS : 53 - 56 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-220 220-250 260-320 300-350 Voltage (V) : 24-26 25-27 25-28 27-30	It is a tubular wire which produces ...to V alloyed deposit. The weld metal ... high hardenability and produces a hardnes... 55 Rc even with relatively slow cooling r... Crack resistance is good provided adequate ... heat and interpass temperature are applied toge...er with slow cooling after welding. Resistance to tempering is good. Best choice for intermediate hardfacing layer for Roller Press Rolls. Parts subjected to abrasion, impact and compressive loads, sand pumps, dredge pump parts, dredge ladder rolls, etc.
CORDIFF 601	HARDNESS : 56 - 60 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-220 220-250 260-300 300-400 Voltage (V) : 24-26 25-27 25-27 26-28 Wire Stick-out (mm) : 25-30 25-30 38-40 35-45	CORDIFF 601 is a tubular wire. It deposits Cr-Mo-W-V alloy. Deposits have high hardenability and give hardness upto 60 HRC even on slow cooling. Resistance to tempering is good. Best suited for abrasion, impact, compressive loads, sand pump, pump parts, tool joints etc.
CORDIFF 603	HARDNESS : 46 - 48 Hrc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-220 220-250 260-300 300-400 Voltage (V) : 24-26 25-27 25-27 26-28 Wire Stick-out (mm) : 25-30 25-30 38-40 35-45	Cr, Mo, V, W-alloyed flux cored wire with excellent properties to resist abrasion and impact. The welding deposit has a high hot hardness upto 550° C. Very much suitable for sealing area of blast furnace bells.
CORDIFF 801 ER	HARDNESS : 60 - 67 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-240 220-260 260-320 300-360 Voltage (V) : 22-26 23-28 25-30 26-31 Welding Parameters : Current : DC+	It is a specially developed tubular wire electrode, which produces highly alloyed deposit of Fe-C-Cr-Ni-B and other special alloyed elements.The alloy primarily consists of carbides, borides and other complex carbides. It has excellent toughness for this high hardness range. Application includes Hardfacing on parts of coal mining equipment, cement, steel and mineral industries subjected to fine particle erosion.

FLUX CORED WIRE

TYPE	TECHNICAL DATA	DESCRIPTION & APPLICATION
CORDIFF 814	HARDNESS : 44 - 48 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-220 220-250 260-300 300-340 Voltage (V) : 24-26 25-27 25-27 26-28	A flux cored wire electrode, depositing a [illegible] Ni-Mo-V weld metal containing [illegible] content. Excellent for building up the [illegible] of composite hot forging dies, both [illegible] small. The deposit has excellent [illegible] at elevated temperatures, very good [illegible] and thermal shock resistance. The [illegible] heat resistant flux-cored wire [illegible] maintenance and to increase the [illegible] working tools, e.g. hot forging dies, [illegible]
CORDIFF 2455	HARDNESS : 45 - 55 HRc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 170-230 220-260 260-330 300-360 Voltage (V) : 22-25 24-27 25-29 27-30 Welding Parameters : Current : DC+	It is highly alloyed C-Cr-Mo-Ni-Nb-W tub[illegible] for abrasive wear, erosion and impact even at elevated temperatures. The weld deposit with Nickel rich matrix specially developed for high corrosion and abrasion with erosion wear, good impact resistance at this hardness without the danger of chipping off, and high temperature resistance. It is used for Blast furnace bells, fire graters, crusher, sinter wheel breakers, smelter loading chutes, Hardfacings on parts for coal mining equipment, cements and minerals industries etc.
CORDIFF 4015	HARDNESS : 220 - 240 BHN Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-220 220-250 260-300 300-340 Voltage (V) : 24-26 25-27 25-27 26-28 Wire Stick-out : 25-30 25-30 38-40 35-45	A tubular wire depositing a martensitic stainless steel weld metal, exhibiting good high temp, strength, corrosion resistance and thermal fatigue resistance. Applications include valve sealing surfaces, bridge bearings, slide ring seals, valve concast rolls etc. wherever temperature of about 550°C, corrosion and metal to metal abrasion are involved.
CORDIFF 4351	HARDNESS : 38 - 42 Hrc Wire Diameter (mm) : 1.6 2.0 2.4 2.8 Current (Amps) : 180-220 220-250 260-300 300-340 Voltage (V) : 24-26 25-27 25-27 26-28 Wire Stick-out : 25-30 25-30 38-40 35-45	A newly developed flux cored wire provides tough and corrosion resistant overlay against wear from sea water plant and power plant operation. Very much suitable for protecting parts in chemical, food and paper industries.

TECHNICAL DETAILS FOR CORDIFF FLUX CORED WIRES (OPEN ARC TYPE)

Size (mm)	1.6	2.0	2.4	2.8
Current in Amps	180-200	220-250	260-300	300-340
Voltage (V)	24-26	25-27	25-27	26-28

All Diffusion make FCW (OA Type) deposited through wire feeder machine require no seperate shielding gas. The wire flux content ensures deposition consistency over a wide range of conditions. Increase in voltage produces flatter beads. Excessive spatter indicates the need to reduce voltage. Reduced amperage assists minimum dilution and penetration.

Use CV or CCCV power source for best result.

COATING & REPAIRING COMPOUND (DIFFCOR)

MAINTANCE AND REPAIR COMPOUNDS

TYPE	TECHNICAL DATA	USE & APPLICATION
CERAMETAL1 is the finest poly-ceramic rebuilding compound for metals damaged by erosion / corrosion. A two component, trowel able, non-sagging synthetic metal compound specially designed to rebuild all types of fluid flow equipment which have been eroded / corroded.	Pot life : 18 min. Full cure : 14 hrs. Compressive Strength : 14600 p.s.i. Hardness (Shore D) : 88 Tensile Strength : 9000 p.s.i. Continuous use temp: 120°C-150°Cmax. Coverage : 2.1 Kg/SQ.M @1 mm thickness Mixing Ratio : Base Activator By Volume : 3 : 1 By Weight : 6.1 : 1 Unit Size : 1 kg	CERAMETAL 1 is ideal for repair and rebuilding of: ■ Pumps, pump casing ■ Tube sheets ■ Water boxes ■ Heat exchangers ■ Valves, Impellers, Propellers, ■ Tanks, ■ Blow thru ■ Piping
CERA-METAL 2 is a solvent free, fluid grade poly-ceramic coating and surfacing compound for fluid flow environments. Easily applied by brush, it is the finest material available for repairing and preventing erosion/corrosion damage caused by fluid flow and entrained solids, impingement and bimetallic action. Specially formulated to resist abrasive erosion.	Pot life : 25 min Hardness(Shore D) : 87 Compressive Strength : 13000 p.s.i Coverage : 2.75 kg/Sq.M @1 mm thickness Mixing Ratio : Base Activator By Volume : 3 : 1 By Weight : 6.3 : 1 Max Service Temp. : 100°C-150°C max. Full Cure : 18 hrs Unit Size. : 1 Kg	Cera-Metal 2 is ideal for repair and preventing erosion/corrosion damage to:- ■ Pumps, Pump Casing ■ Impellers ■ Heat exchangers ■ Valves ■ Tube sheets ■ Tanks ■ Rotary Air Lock Feeder ■ Struts/rudders ■ Water boxes ■ Piping.
CERA-METAL 3 is a low friction corrosion resistant two component solvent-free lining compound specially designed to combat erosion/corrosion found in fluid flow environments. It is easily applied by brush or roller, keeping application cost to a minimum. The finished system can be spark tested to ensure that no pinholes or holidays are present in the lining. It is a 'resin rich' system that 'wets out' surfaces completely thus ensuring maximum adhesion. It is the most economical chemical and corrosion resistant coating system for the most aggressive industrial environments. It exhibits excellent adhesion to concrete as well as metal surface.	Pot life : 60 min. Hardness(Shore D) : 86 Full cure : 24 hrs. Compressive Strength : 12763 p.s.i. Tensile Strength : 5946 p.s.i. Coverage : 1.5 Kg/Sq.M @1mm thickness Mixing Ratio : Base Activator By weight : 3.5 : 1 By volume : 3 : 1 UNIT SIZE : 1 Kg	Cera-Metal 3 is ideal for compound to combat erosion/corrosion :- ■ Heat exchangers ■ Tube sheets ■ Pumps ■ Pipes ■ Valves ■ Impellers
CERABEAD is a Ceramic Bead filled Putty lining compound incorporating a blend of Ceramic Beads and Powders. It exhibits outstanding abrasion resistance, adhesion and toughness.	Pot life : 25 min Full Cure : 12 hrs. Hardness(Shore D) : 88 Compressive Strength : 13700 p.s.i Coverage : 4 kg/Sq.M @2 mm thickness 4 kg/Sq.M @1 mm thickness (for CERBEAD S) Mixing Ratio : Base Activator By Weight : 3 : 1 By Volume : 3 : 1 Unit Size : 1 Kg	CERABEAD is used where maximum abrasion resistance is needed. Typical applications include:- ■ Wood chip conveyors ■ Mining operations ■ Cyclones ■ Sand & gravel conveyors ■ Hoppers ■ Lining large pump housings in coal & wood fired power plants.

MAINTANCE AND REPAIR COMPOUNDS

TYPE	TECHNICAL DATA	USE & APPLICATION
CERABEAD-XTREME is a tough composite material filled with ultra resilient, high strength to weight ratio special fibers, ceramic beads and ultra hard densely packed ceramic particles that outstands all material against erosive & pneumatic abrasive environment.	Pot life : 25 min. Full cure : 18 hrs. Compressive Strength : 17000 p.s.i. Hardness(Shore D) : 89 Coverage : 4 kg/Sq. M @2 mm thickness 4 kg/Sq.M @1 mm thickness (for CERBEADXTREME S) Mixing Ratio : Base Activator By Volume : 2.7 : 1 By Weight : 2 : 1 Unit size : 1 kg	CERABEAD- XTREME is useful for:- ■ Ash handling pipes and valves ■ Sand pumping equipment ■ Pipe elbows, chutes for clinker, cement, sand ■ Pump housings, impellers, lining ■ Coal pulverizers and exhausters Slurry pumps ■ Screw conveyors.
INSTAMETAL is an easy, effective, rapid curing metal repair compound, the best material for fast, effective leak sealing repairs. It is an indispensable too-box item of rapid curing, cold applied synthetic metal compound that lets you make effective repairs to all types of machinery and equipment which can be back in service with minutes. It Will bond to just any surface making it an ideal choice for emergency repairs to all types of mechanical equipment.	Pot life : 3 min. Full cure : 1 hrs. Compressive Strength : 8000 p.s.i. Tensile Strength : 7000 p.s.i. Unit Size. : 0.5 kg Mixing Ratio : Base Activator By Volume : 2 : 1 By Weight : 3.2 : 1 Continuous use temp. : 100°C	Leak sealing repairs to :- ■ Pipes ■ Tanks ■ Casings ■ Ducts ■ Transformers ■ Threaded fittings, ■ Oil pan/sumps
UNIMETAL is a two component, solvent-free, Cold-curing, high performance synthetic metal compound for all mechanical repairs. It has an outstanding adhesion to all metals, ferrous and nonferrous alloys as well as to glass, fiberglass and composites. It can be completely machinable after curing.	Pot life : 18 min. Hardness(Shore D) : 85 Full cure : 18 hrs. Compressive Strength : 14500 p.s.i. Tensile Strength : 9000 p.s.i. Coverage : 2.7 Kg/Sq.M @1mm thickness Mixing Ratio : Base Activator By weight : 3.7 : 1 By volume : 3 : 1 UNIT SIZE : 1 Kg	UNIMETAL can be used for all types of mechanical equipment such as:- ■ Damaged shaft ■ Oversize bearing housings ■ Cracked casings ■ Sloppy keyways ■ Irregular matting surfaces ■ Cracked engine blocks
FLEXI-METAL is an exceptional cold vulcanizing process for repair and rebuilding of flexible Components. Easy to use with simple mixing ratio allowing only sufficient material to be used for each repair minimizing wastage. It can be used on surfaces including metals, concrete, wood and rubber. It forms a tough elastomeric repair with no shrinkage and when fully cured can be machined and sanded to aid finishing process.	Pot life : 18-20 min Full cure : 12 hrs. Theoretical Coverage 1.25 kg per sq m (@1mm thickness) Hardness(Shore A) : 85 Unit Size : 0.500 Kg. Tensile Strength : 1275 p.s.i. Mixing Ratio : Base Activator By weight : 9 : 1	FLEXI-METAL can be used for repairs and rebuilding of flexible components such as:- ■ Conveyor belts ■ Hoses ■ Rubber rollers ■ Rubber impellers ■ Flexible ducting ■ Non-highway tyres ■ Chutes ■ Hoppers and valves
DIFF-BOND is high-strength epoxy bonding compound for metallic and non metallic and ceramic material. Its highly thixotropic material with no sagging and running and can be applied on vertical and horizontal surface Originally developed for ceramic tile bonding. DIFF-BOND compound is high solid 100% reactive and does not contain any solvents or diluents. This highly dimensionally stable system has very low shrinkage after cure.	Compressive strength : 72 Mpa Tensile strength : 16 Mpa Hardness, Shore D : >82 Pot life : 30 Min (@30°C) Full cure : 18 Hrs Mix Ratio : Base Activator By weight : 1 : 1 By volume : 1 : 1	Easy application to:- ■ Metals ■ Concrete surfaces ■ Ceramic tile

COATING & REPAIRING COMPOUND (DIFFCOR)

ANTICORROSIVE COATING

TYPE	TECHNICAL DATA	USE & APPLICATION
DIFFGLASS -1000 is modified Polyester resin based Glass flake filled poly-ceramic rebuilding compound for metals damaged by erosion / corrosion. DIFFGLASS-1000 is a specially designed two component system that withstands from sea water to harsh chemicals.	Coverage : 2.1 Kg/SQ.M (@1 mm thickness) Hardness ShoreD : > 80 Tensile Strength : 6000 p.s.i. Compressive Strength : 12000 p.s.i. Mixing Ratio Unless Specified : Base Activator Use As per Given : 98.5 : 1.5 Unit Size. : 1Kg	DIFFGLASS-1000 ... eal for repair and rebuilding of Pumps, Tube ... Water boxes, Valves, Imp... propellers, Tanks, Pipelin...
DIFFGLASS VINSTER is vinyl ester resin based Glass Flake Coating designed to meet medium to high corrosive environment. DIFFGLASS VINSTER is excellent resistant to acidic condition.	Coverage : 2.5 Kg/SQ.M (@1mm thickness) Hardness (Shore D) : 82 Tensile Strength : 2800 p.s.i. Compressive Strength : 14000 p.s.i. Mixing Ratio Unless Specified : Base Activator Use As per Given : 98 : 2 Unit Size : 1Kg	■ Tank Lining ■ Municipal W... ...atment plant ■ Water Treatm... ...nt ■ Pipe lining ■ Oil production facilities ■ Chemical processing plants
DIFFGLASS XTREME is a heavy-duty lining system for concrete and steel substrates that offers unique combination of vinyl ester novolac resin with Glass flake reinforcement and inert mineral fillers produce a dimensionally stable coating with extremely low permeability and ideally suited for immersion service splash/spillage exposure of concentrated acids and aggressive solvents.	Coverage : 2.5 Kg/SQ.M (@1mm thickness) Hardness (Shore D) : 84 Tensile Strength : 3000 p.s.i. Compressive Strength : 12000 p.s.i. Mixing Ratio Unless Specified : Base Activator Use As per Given : 98.5 : 1.5 Unit Size : 1Kg	■ Process area floors ■ Steel process and storage tanks ■ Scrubbers in FGD systems ■ Concrete waste treatment sumps ■ Trenches, pedestals, curbs ■ Secondary containment ■ Truck loading/unloading areas ■ Chemical pump pads ■ Drum storage areas ■ Chemical storage tanks
DIFFABRAGLASS is a synthetic highly cross-linked, epoxy novolac vinyl ester resin thermosetting polymer based coating, reinforced with advanced composite Compound like silicon carbide & Ceramic fillers.	Coverage : 2.5 Kg/SQ.M (@1 mm thickness) Hardness Shore D : > 80 Tensile Strength : 4000 p.s.i. Compressive Strength : 10000 p.s.i. Mixing Ratio Unless Specified mix as per given : Base Activator : 98.5 : 1.5 Unit Size : 1Kg	■ Pipe elbows, chutes. ■ Pump casings & Impellers ■ Pipelines & valves. ■ Agitators of chemical handling vessels

COATING & REPAIRING COMPOUND (DIFFCOR)

FLOOR COATING

TYPE	TECHNICAL DATA	USE & APPLICATION
DIFF-FLEX is a high tech polyurethane high solids, low viscosity, chemical resistant urethane with excellent wear and durability coating combining excellent strength with outstanding flexibility. The solvent free formula product mixed with fillers for extra thickness and to lower the cost per unit. The material is spread to achieve a self-leveling and fast curing. Selected rubber texture granules and/or sand may be broadcast on the not yet completely cured surface. **DIFF-FLEX** has excellent chemical resistance to acids/alkalies/solvents in spillage and occasional contact situations.	Coverage : 1.15 kg per sq m (@1mm thickness) Hardness (Shore A) : 85 Unit Size : 1 Kg Pot Life : 25 min. Full cure : 18 hrs. Tensile Strength : 1575 Mix Ratio : Base Activator By Weight : 7 : 3	DIFF-FLEX is [illegible] seamless, flexible resistant, [illegible] protective [illegible] as mechanical [illegible] areas, shower [illegible] display [illegible] Industrial [illegible] Floor.
DIFF-TUFF is a high-solids, high-build, epoxy protective coating for tough industrial environments & Floors. Especially formulated with its blend of penetrates and surface tension-control agents for concrete surface to solve, corrosion due to oily surface, chemical spillage with minimal surface preparation. The result is a tough, durable coating with excellent resistance to weather, moisture, and chemical fumes. DIFF-TUFF with special preparation is durable anti-slip protection in a variety of industrial settings, and for every maintenance coating job.	Coverage : 1.15 kg per sq m (@1mm thickness) Hardness (Shore D) : 80 Tensile Strength : 30 Mpa Compressive Strength : 14000 p.s.i. Mixing Ratio : Base Activator By Volume : 2.4 : 1 By Weight : 3.5 : 1 Full Cure : 24 hrs (at 30°C) Pot Life : 55 min (at 30°C) Unit Size : 1Kg	DIFF-TUFF coating protects and slips proofs on Concrete & steel surface in industrial facilities bridges, marine weathering, and other exposures Good chemical resistance to splash/spillage, fumes and immersion in neutral, fresh and salt water.
DIFFGUARD is a 100% solids, multi-functional, two component polymer coating suited for concrete substrates in aggressive chemical environments.	Coverage : 1.5 Kg/SQ.M (@1 mm thickness) Hardness Shore D : 82 Tensile Strength : 8000 p.s.i. Compressive Strength : 14000 p.s.i. Pot life : 35 Min Mixing Ratio : Base Activator By Volume : 1 : 1 By Weight : 1 : 1 Unit Size : 1 Kg.	■ Process area floors ■ Secondary containment ■ Pump pads, pedestals, curbs

COATING & REPAIRING COMPOUND (DIFFCOR)

STRUCTURAL COATINGS

TYPE	TECHNICAL DATA	USE & APPLICATION
DIFF-GLASS PRIME is a two-pack polyamine cured epoxy priming surface tolerant compound incorporating a rust inhibitor and passivator.	Hardness : 84 Shore D Unit Size : 0.5 Kg Pot life : 40 minutes Coverage : 3Sq m per 1kg @100 micron Mixing Ratio : Base Activator By weight : 7.5 : 2.5 By Volume : 1.5 : 1	Suitable where corrosion protection is required ■ Costal atmosphere ■ Petrochemical pl ■ Fertilizer plants
DIFF-CERAGLASS is High solid, Heavy duty glass flake filled modified epoxy coating system designed to meet aggressive environments with excellent resistant to acid, bases and solvent.	Hardness Shore D : 85 Coverage Kg/SQ.M : For *TW version: 2.7 @1 mm thickness For **SP version: 1.8 Kg/SQ.M @1 mm thickness Pot life : 35 Min Mixing Ratio : Base Activator By Weight : 2.5 : 1 By Volume : 2 : 1 Unit Size : 1 Kg Full Cure : 18 hrs	DIFF-CERAGLAS for :- ■ Chemical slurr ■ Impellers / pro ■ Tanks ■ Pipelines External Coating structures, Tanks Walkways, Pipelines.
DIFF-TOP is a aliphatic polyurethane based top coat system for external application with various color combination	Hardness Shore A : 80 Coverage : 1Kg/SQ.M 1mm thickness Mixing Ratio : Base Activator By Volume : 5 : 1 Unit Size. : 0.5 Kg Full Cure : 12 hrs at 30°C	Suitable as topcoat for exterior marine and industrial environment for pipeline and structure.

INSULATION

TYPE	TECHNICAL DATA	USE & APPLICATION
DIFF INSULATE a two component solvent free, high polymeric resin system especially designed for electrical insulation. DIFF INSULATE is filled with highly dielectric insulating material and forms non porous film with excellent adhesion to metallic, non metallic surface and offers a good combination of mechanical, thermal and electrical insulating properties. Prevents, Flashovers, Downtime & Equipment Damages.	Pot life : 20 min Full Cure : 12 hrs. Hardness(Shore D) : 85 Breakdown Voltage : 33.67 KV at 1.3mm coating thickness Compressive Strength : 13000 p.s.i Coverage : 1.5 kg/Sq.M @1 mm thickness Mixing Ratio : Base Activator By Weight : 7 : 3 By Volume : 2 : 1 Unit Size : 0.5 Kg	DIFF INSULATE is used primarily as insulation of :- ■ Aluminum bus bars ■ Copper bus bars ■ Other steel barrier materials of electrical distributing system. ■ Naked Conductor ■ Bus Support Insulators Electrical Insulator Ends ■ Metal supports Structures Di -electric floor matting in Sub-Station/HT panels

PRODUCTS FOR PREP ARATION / JOINING / CRACKS / REBUILDING

PREPARATION	CAST IRON	STEEL/CAST STEEL	STAINLESS STEEL	LOW ALLOY STEEL	DIFFICULT TO WELD UNKNOWN STEEL	HADFIELD MANGANESE STEEL	NI ALLOYS
SUPER GOUGE SUPER CUT	FEROCAST 102 CINOD 160 GRELOY 850 SUPERCINOD 1600 CACI 540 CACI 150 NODURON 60 CACI 145 CACI 650	DIFFUSALOY 800 ELH CA - 7018 SUPER MATIC DIFFUSALOY - 706 DIFFUSALOY - 6180 CA - 012 D UNILOY - 624 S	DIFFUSALOY 908L DIFFUSALOY 910 DIFFUSALOY 916L DIFFUSALOY 917L DIFFUSALOY 925 DIFFUSALOY 925 UNILOY 608 DIFFUSALOY 905 DIFFUSALOY 309L DIFFUSALOY ZF DIFFUSALOY 347 DIFFUSALOY - 628	DIFFUSALOY 818 DIFFUSALOY 805 DIFFUSALOY GZB LH DIFFUSALOY 1018 DIFFUSALOY - 8018W DIFFUSALOY - 815 SPECIAL	UNILOY 624 DIFFUSALOY 6180 DIFFUSALOY 618 CA 012D UNILOY 620 UNILOY 685 UNILOY - 624 S	DIFFUSALOY 618 DIFFUSALOY 618X HADMOLOY 140 HADMOLOY 1400 TUBALOY 108 XALOY - 52 TUBALOY - 600X	SUPERALOY 1768 SUPERALOY 1770 SUPERALOY 1780 DIFFUSALOY 817 SUPERALOY 1750 SUPERALOY 1752 SUPERALOY Mo 1755 UNILOY 2535

PRODUCTS FOR ANY WEAR PROBLEM

METAL TO METAL WEAR TOOLING	MODERATE IMPACT+ ABRASION	LOW STRESS SCRATCHING +ABRASION	HIGH IMPACT+ ABRASION	HIGH IMPACT+ HEAT	ABRASION+HEAT+ CORROSION	ABRASION+HEAT+ IMPACT	PARTICLE/ SLURRY EROSION	HIGH EROSION+ HEAT
TUFALOY 320 MACROLOY 712 MACROLOY 812 TUFALOY 3200 SUPERALOY 550 TUFTOOL 100 TUFTOOL 200	ABRALOY 3505 ABRALOY 184 ABRALOY 3000D ABRALOY 3605 DIFFUSALOY 560	ABROCAR 84 ABROCAR 300 ABROCAR 240 DIFFUSALOY 63 ABROCAR 3015	HADMOLOY 140 HADMOLOY 1400 XALOY 52 TUFALOY 600X TUFALOY 1200X DIFFUSALOY 618 DIFFUSALOY 618X DIFFUSALOY 6180 TUBALOY 33 ABROCAR 60	SUPERALOY 1768 DIEBUILD N DIEBUILD S DIEBUILD E SUPERALOY 1770 DIE 100 DIE WELD SUPERALOY 1755 Mo SUPERALOY 1750 DIFFUSALOY 555 SUPERALOY 1780 DIFFUSALOY 817 SUPERALOY 495 DIFFUSALOY 101 DIFFUSALOY 105 DIFFUSALOY 122	ABRALOY 3000D ABRALOY 3505 SUPERALOY 1768 TUBALLOY 23 MACROLOY 712 MACROLOY 812 DIFFUSALOY 4351 ABRALOY 3720 ABRALOY 61 ABRALOY 2412	ABRALOY 3000D DIFFUSALOY 817 DIFFUSALOY 495 DIFFUSALOY 4351 DIFFUSALOY 68 DIFFUSALOY 3720 ABRALOY 3605	SOP ABRALOY 3000D DIFFUSALOY 68 DIFFUSALOY 3720 ABRALOY 60 ABRALOY 61	ABRALOY 3000D DIFFUSALOY 6WZ SUPERALOY 1001 SUPERALOY 1006 SUPERALOY 1012 SUPERALOY 7000TCC DIFFUSALOY 6100WZ SUPERALOY 495

FLUX CORED WIRES DEPENDING UPON WEAR CONDITIONS

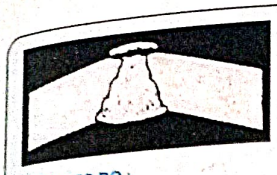
Flux Cored Wires for Joining and Buffer layer

STEEL	DIFFICULT TO WELD UNKNOWN STEEL	STEEL/CAST STEEL
CORDIFF 71T1	CORDIFF 324	CORDIFF 200K
CORDIFF 71T5	CORDIFF 234	CORDIFF 250K
CORDIFF 70T4	CORDIFF 201	CORDIFF 240K
CORDIFF 203		CORDIFF 270K
CORDIFF 341		

Flux Cored Wires for Surfacing / Hard Facing

METAL TO METAL	ABRASION + IMPACT+ CORROSION	HIGH IMPACT + ABRASION	ABRASION+HEAT+ IMPACT	[illegible]
CORDIFF 300	CORDIFF 480 NBS	CORDIFF 270 K	CORDIFF 4351	CORDIFF 301 ER
CORDIFF 4351	CORDIFF 50	CORDIFF TT 400	CORDIFF 65	
CORDIFF 450	CORDIFF 55 MO	CORDIFF 59	CORDIFF 65 Z	
CORDIFF 600 OA	CORDIFF 55	CORDIFF 600 OA	CORDIFF 59 L	
CORDIFF 4015	CORDIFF 57	CORDIFF 600 TIC	CORDIFF 67	
CORDIFF 400	CORDIFF 60	CORDIFF 603		
	CORDIFF 61	CORDIFF 601		
SA WIRES			**SA WIRES**	
CORDIFF 356 UP			CORDIFF 356 UP	
CORDIFF 300			CORDIFF 362	
			CORDIFF 502	

CAUSES AND CURES OF COMMON WELDING PROBLEMS



DISTORTION

WHY :

1. Uneven heating
2. Improper sequence.
3. Deposited metal shrinks.

WHAT TO DO :

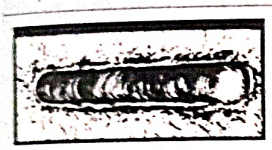
1. Tack or clamp parts properly.
2. Form parts before welding.
3. Dispose of rolling or forming strains before welding.
4. Distribute welding to prevent uneven heating.
5. Examine structure and develop a sequence.

CRACKED WELDS ....WHY?

1. Wrong electrode.
2. Weld and parts sizes unbalanced.
3. Faulty welds.
4. Faulty preparation.
5. Rigid joint.

WHAT TO DO :

1. Designed structure and welding procedure eliminate rigid joints.
2. Heat parts before welding.
3. Avoid welds in string beads.
4. Keep ends free to move as long as possible.
5. Make sound welds of good fusion.
6. Adjust weld size to parts size.
7. Allow joints a proper & uniform free space.
8. Work with amperage as low as possible.



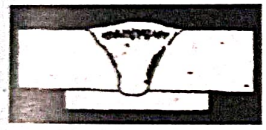
WELD STRESSES

WHY :

1. Faulty welds.
2. Faulty sequence.
3. Rigid joints.

WHAT TO DO :

1. Allow parts to move freely as long as practical.
2. Make as few passes as practical.
3. Peen deposits.
4. Anneal according to thickness of weld.
5. Move parts slightly in welding to reduce stresses.



POOR FUSION

WHY :

1. Wrong speed.
2. Current improperly adjusted.
3. Faulty preparation.
4. Improper electrode size.

WHAT TO DO :

Adjust electrode and vee sizes.
Weave must be sufficient to melt sides of joint.
Proper current will allow deposition and penetration.
Keep weld metal from curling away from plates.

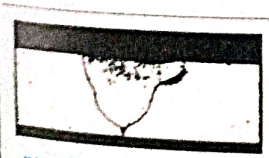
MAGNETIC BLOW

WHY :

1. Magnetic fields cause the arc to deviate from its intended course.

WHAT TO DO :

1. Use steel blocks to alter magnetic path around arc.
2. Divide the ground into parts.
3. Weld in same direction the arc blows.
4. Use a short arc.
5. Locate the ground properly on the work.
6. Use A-C welding.



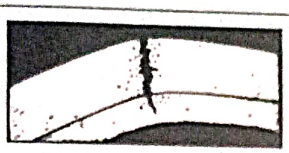
POOR PENETRATION

WHY :

1. Speed too fast.
2. Electrode too large.
3. Current too low.
4. Faulty preparation.

WHAT TO DO :

1. Use enough current to obtain desired penetration - weld slowly.
2. Calculate electrode penetration properly.
3. Select electrode according to welding groove size.
4. Leave proper free space at bottom of weld.



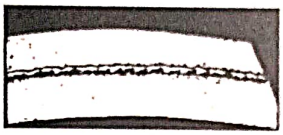
BRITTLE WELDS

WHY :

1. Wrong electrode.
2. Faulty preheating.
3. Metal hardened by air.

WHAT TO DO :

1. Preheat at 300° to 500° F. If welding a medium carbon steel or certain alloy steels.
2. Make multiple layer welds.
3. Anneal after welding.
4. Use stainless or low hydrogen electrodes for increased weld



WARPING

WHY?

1. Shrinkage of
2. Faulty clam
3. Faulty prepara
4. Overheating at

WHAT TO DO :

1. Peen joint edges before welding.
2. Weld rapidly.
3. Avoid excessive space between parts.
4. Clamping parts properly - back - up to cool.
5. Adopt a welding procedure.
6. Use high speed, moderate penetration electrodes.

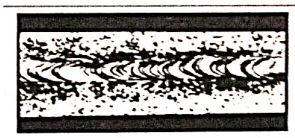
UNDERCUTTING

WHY :

1. Faulty electrode manipulation.
2. Faulty electrode usage.
3. Current too high.

WHAT TO DO :

1. Use a uniform weave in butt welding.
2. Avoid using an overly large electrode.
3. Avoid excessive weaving.
4. Use moderate current, weld slowly.
5. Hold electrode at safe distance from vertical plane in making horizontal fillet weld.



SPATTER

WHY :

1. Arc blow.
2. Current too high.
3. Arc too long.
4. Faulty electrodes.

WHAT TO DO :

1. Whitewash parts in weld area.
2. Adjust current to needs.
3. Adjust to proper arc length.
4. Lighten arc blow.
5. Pick suitable electrode.

POROUS WELDS ...WHY ?

1. Short arc with exception of low hydrogen & stainless.
2. Insufficient puddling time.
3. Impaired base metal.
4. Poor electrode.

WHAT TO DO :

1. Check impurities in base metal
2. Allow sufficient puddling time for gases to escape.
3. Use proper current.
4. Weave your weld to eliminate pin holes.
5. Use proper electrode for job.
6. Hold longer arc and penetration.

POOR PENETRATION

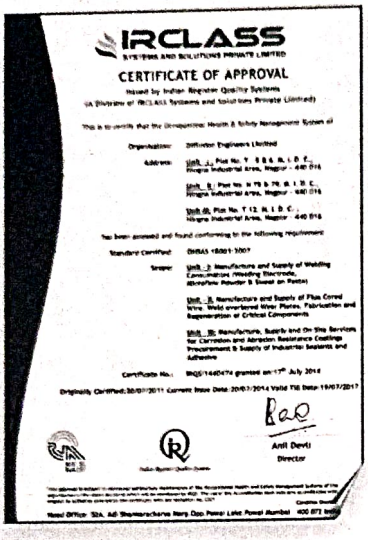
WHY :

1. Faulty electrode.
2. Overhang.
3. Improper use of electrode.
4. Wrong arc and current voltage.

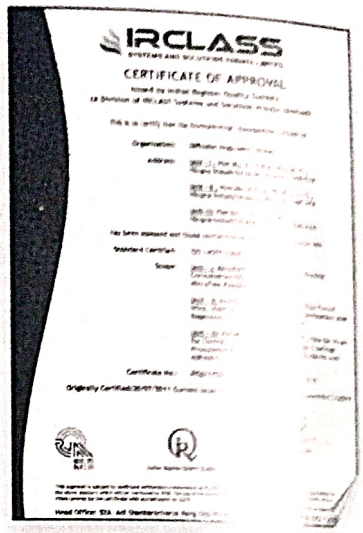
WHAT TO DO :

1. Use a proper welding technique
2. Avoid overheating.
3. Use a Uniform weave.
4. Avoid overly high current.

QUALITY CERTIFICATE


IRCLASS
CERTIFICATE OF APPROVAL


Indian Register Quality Systems
CERTIFICATE OF APPROVAL


IRCLASS
CERTIFICATE OF APPROVAL

ENVIRONMENT POLICY

DEL is committed to conduct its operation in such a manner as compatible with environment and economic development of the community.

The organization Aims at:

- Create environment awareness amongst its employees and develop programmes for protecting environment.
- Strive to progressively bring about an improvement in the environmental performance adopting Eco-friendly; techniques/ processes, for optimal use of energy and to reduce hazardous wastes;
- Establish procedures and devise suitable method for disposal of toxic, other hazardous wastes;
- Comply with the relevant Statutory and Regulatory requirements.
- Conduct reviews and evaluation to measure progress of compliance with the policy.
- Create green environment in and around works.

WELFARE

Employee Welfare is a prime concern at Diffusion.

Facilities like Gratuity, Regular Medical Check-ups and other benefits are given to the employees.

Diffusion workforce is a happy workforce and undoubtedly gives the best to the Company.

SERVICES

Diffusion's qaualified and trained team of engineers and welding technicians provide service from a countrywide network of offices.

TRAINING TO CUSTOMERS :

Through the Diffusion Knowledge Center to keep the customers abreast of the latest welding technology and increasing the awareness level in the field of Superconditioning.