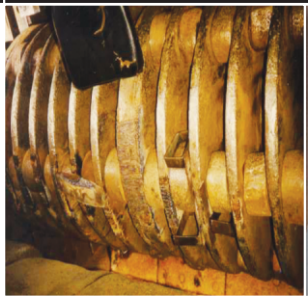
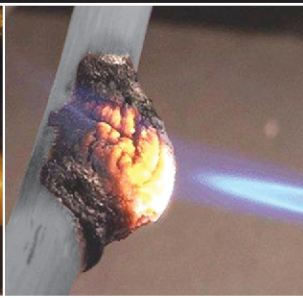
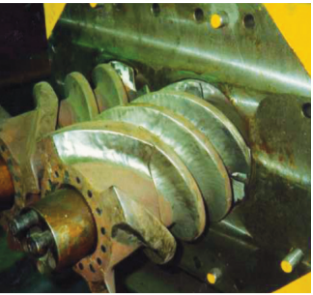
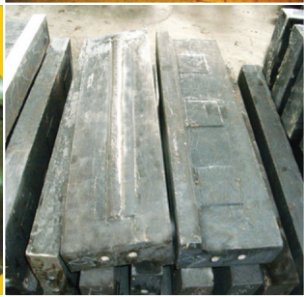
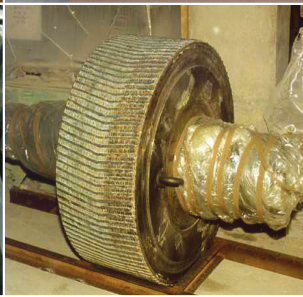
SUPERON®

"World Class Products"

MECHANICAL MAINTENANCE ENGINEER'S PRODUCT HAND BOOK

SUPERON SCHWEISSTECHNIK (I) LTD.

Superon Schweisstechnik India Ltd. was established in the year 1994.

A full range of low-heat input repair & reclamation MMAW products are being manufactured in technical collaboration with:

Kjellberg FINSTERWALDE ESTD. 1922

www.kjellberg.de

M/s Kjellberg Finsterwalde GMBH, Germany

OERLIKON

www.airliquidewelding.com

M/s Oerlikon Schweisstechnik AG, Switzerland

Superior performance features, unique alloys, cost effective pricing, high quality, service welder back-up national sales team & distributor network are making Superon one of India's fastes growing manufactures in this field.

Tow state of the art ISO 9001 : 2008, Certified manufacturing plants are located at Delhi & Manesar, Haryana.

TÜVRheinland® CERT ISO 9001

ISO CERTIFIED OPERATIONS

Corporate Office

Plant-II, Manesar

Plant-III, Gurgaon

Plant-IV, Gurgaon

QUALITY CONTROL SYSTEMS

Mechanical & Chemical Testing Equipments

Spectrometer

Computerised UTM

Mechanical Lab

World Class Quality Control Facilities

Multi-Alloy Spectrograph

Hand Held X-ray Analyser (PMI)

Computerised UTS Testing

Inhouse Die Reconditioning

STANVAC - SUPERON GROUP
INNOVATIVE PROTECTIVE COATINGS

Stanvac – Superon group is today, India's leading innovator in the manufacture & marketing of specialised solutions for industrial repair, wear, corrosion, abrasion, electrical insulation, fire suppression, cleaning & degreasing, speciality lubrication…. India's widest variety of such, high performance *"World Class Products"*.

Estd in 1994, with import tie-up's with a number of world leaders, production of indigenized solutions began in 2004.

We today offer the following **"unique"**. innovative technology, protective coatings, via technology transfer from leading research & development institutions.

A. METAL SURFACE PROTECTION - Against corrosion, temperature, leakages, Corrosion under imulation.

B. CONCRETE SURFACE PROTECTION - Against water seepages, oil & acid spillage, algae & fungus formation, crack repairing, tankage boot sealing...

C. ELECTRICAL INSULATION & FIRE PROTECTION - Insulation, anti-tracking, di-electric flooring, cable fire protection...

D. SUPERIOR ALTRNATIVES - Solvent free epoxy coatings & linings, acid protection coatings, ceramic epoxy putties & coating, metal repair putties, rubber repair putties & coatings, photo

Best in class performance via unique **"Proprietary"** features, ensures solutions to a number of long standing problems in civil, utilities maintenance departments.

Technology Partners

IIT, Bombay

CBRI, Roorkee

ERDA, Vadodara

IICT, Hydrabad

STANVAC - SUPERON GROUP
SPECIALITY LUBRICANTS

Stanvac – Superon group is today, India's leading innovator in the manufacture & marketing of specialised solutions for industrial repair, wear, corrosion, abrasion, electrical insulation, fire suppression, cleaning & degreasing, speciality lubrication…. India's widest variety of such, high performance *"World Class Products"*.

Estd in 1994, with import tie-up's with a number of world leaders, production of indigenized solutions began in 2004.

We today offer a full range of imported & indigenously manufactured speciality lubricants including:

A. **GREASES -** Lithium, lithium complex, bentone, moly, synthetic, silicone, high speed, high temperature....

B. **LUBE OILS -** Hydraulic, gear, chain, turbine...

C. **METAL WORKING FLUIDS -** Water soluble, semi-synthetic, synthetic....

D. **RUST PREVENTIVES -** oil based, solvent based, water based...

Superior performance is **GUARANTEED** via the scientific tribological ACR approach, enabling better lubrication + cost economy, at **NO RISK** to the equipment.

Partners

SENTINEL® Synthetic Lubricants

Brugarolas

Bulk Blending

Speciality Grease Blending

Tribological Testing

STANVAC - SUPERON GROUP
MRO SPECIALITIES

Stanvac – Superon group is today, India's leading innovator in the manufacture & marketing of specialised solutions for industrial repair, wear, corrosion, abrasion, electrical insulation, fire suppression, cleaning & degreasing, speciality lubrication…. India's widest variety of such, high performance *"World Class Products"*.

Estd in 1994, with import tie-up's with a number of world leaders, production of indigenized solutions began in 2004.

We today offer the following "superior featured", innovative technology, MRO specialiaties, sourced from the world's leading companies.

A. AEROSOL SPRAYS - Cleaners & degreasers, rust penetrators, lubricants, rust preventatives, zinc & ss sprays, contact cleaners, insulation coatings...

B. BULK CLEANERS & DEGREASERS - Environment friendly "green" cleaning solutions.

C. BULK RUST & SCALE REMOVERS - Non fuming, metal & user safe formulations.

D. REPAIR EPOXIES & SEALANTS - Composite epoxy sticks, two part epoxies, PUF & RTV sealants...

Best in class performance via unique **"Proprietary"** features, ensures solutions to anumber of long standing problems in mechanical & electrical maintenance departments.

Partners

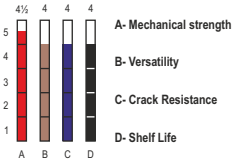
AERVOE · AC-90 · WEICON · RMC Rochester Midland Corporation · NEPTUNE · SOUDAL

Wide Range

Aerosol Plant

A

ALUMINIUM & ALUMINIUM ALLOYS



SUPER STANALLOY AL 11 DC+

TYPICAL APPLICATIONS :

Automotive Engine blocks, Cast housings, Desalination parts & pumps, holding tanks, moulds, piston, fans, frames & parts in dairies and breweries.

OUTSTANDING FEATURES :

- ★ Excellent arc stability.
- ★ Hermitically sealed packs for longer shelf life.
- ★ Corrosion resistant Joining, overlaying and filling.
- ★ Rapid deposition.
- ★ Compatible with wrought aluminium alloys.

RECOMMENDATIONS :

Can be used for most types of weldable Aluminum & its alloys, including rolled, extruded and forged profiles. Highly suitable for site work and positional use. The electrodes have a high shelf life because of the unique packing in pull ring cans. Highly versatile alloy and ideal for production and maintenance welding jobs. Rapid solidification of the alloys helps in situ welding of the same.

PROCEDURE :

Use DC Reverse Polarity for welding aluminium. Prepare the surface free from oil, grease and oxidation deposits. Preheat the base metal to 200° C. Bevel thicker section to 75° vee, for better strength and defect free welding. Maintain short arc with electrode at right angle to the workpiece, backwhip craters. Chip slag and allow to cool slowly.

RECOMMENDED AMPERAGES :

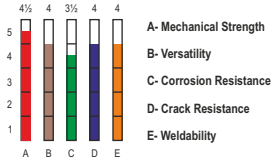
SIZE(mm)	RANGE
4.00	110-150
3.20	70-120

TENSILE STRENGTH :

34,000 PSI (240N/ mm^2)

B

COPPER ALLOYS



SUPER STANALLOY CU 12 AC/DC+

TYPICAL APPLICATIONS :

Marine impellors, cast gun metal pump housing, bushes, missing gear teeth, dissimilar metals & wearing sleeves.

OUTSTANDING FEATURES :

- ★ Dense, porosity-fee deposits and fully machinable deposits.
- ★ Excellent Arc Stability.
- ★ Joining, overlaying and filling.
- ★ Rapid deposition.
- ★ Excellent colour match to Bronze.
- ★ Versatile electrode, can be used on steel, cast iron and bronze.
- ★ Deposits have low coefficient of friction.

RECOMMENDATIONS :

High strength and versatile electrode which can be used on variety of base metals. The deposits are absolutely free from pinholes and porosities. Has good machinablity. The deposits exhibit a low coefficient of friction & excellent corrosion resistance to marine atmosphere too.

PROCEDURE :

Clean weld area. Bevel heavier thickness to a 75° vee, preheat of up 300-350°C. Deposit short beads with a short arc. Peen the deposits immediately after welding using DC reverse. Strike arc by lightly drawing electrode on work piece or with copper starting block. Maintain a short arc with electrode almost perpendicular.

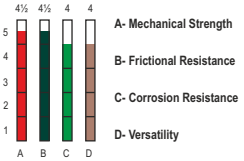
Backwhip craters. Chip slag between passes. Allow to cool slowly.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	110-140
3.15	80-110

TENSILE STRENGTH :

45,000 PSI (300N/ mm^2)



SUPER STANALLOY CU 14 AC/DC+

TYPICAL APPLICATIONS :

Refinery crude columns, marine structures, pumps, impellors, dissimilar metals, glands & Sleeves along with dissimilar steel joining.

OUTSTANDING FEATURES :

- ★ Excellent arc Stability.
- ★ Joining, overlaying and filling.
- ★ Rapid deposition.
- ★ Working Temperature of -196°C to 450°C .
- ★ Versatile electrode, can be used on steel, cast iron and bronze & all monels.
- ★ Deposits have low coefficient of friction.
- ★ Suitable for positional welding.

RECOMMENDATIONS :

High strength and versatile electrode which can be used on variety of base metals. The deposits are absolutely free from pinholes and porosities. The deposits exhibit a excellent corrosion resistance to seawater, salts & reducing acids at higher tempertures. Recommended for joints between monel, Cupro Nickel alloys, carbon steel, low alloy steels, copper and copper alloys. Weld deposit has a low coefficient of friction.

PROCEDURE :

Clean weld area. Bevel heavier thickness to a 75° vee, preheat of up 300-350°C. Deposit short beads with a short arc. Peen the deposits immediately after welding. Use DC reverse.

Strike arc by lightly drawing electrode on work piece or with copper starting block. Maintain a short arc with electrode almost perpendicular.

Backwhip craters. Chip slag between passes. Allow to cool slowly.

RECOMMENDED AMPERAGES :

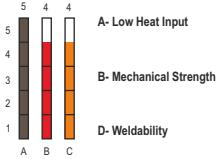
SIZE(mm)	RANGE
4.00	110-130
3.15	80-110

TENSILE STRENGTH :

70,000 PSI (490N/ mm^2)

C

STEELS



SUPER STANALLOY ST 21 AC/DC-

TYPICAL APPLICATIONS :

General appications like containers, steel bus bodies, air conditioning units, machine guards, and other low alloy and low carbon steels.

OUTSTANDING FEATURES :

- ★ Contact type of welding alloy – hence minimum heat input.
- ★ Self lifting slag – minimal welders effort & defect free welding.
- ★ Rapid depositing- quicker completion of jobs.
- ★ All positional welding electrodes.
- ★ Finely rippled deposits, exhibiting good weld characteristics & uniformity.
- ★ Fantastic strike & restrike capability.

RECOMMENDATIONS :

Highy recommended for the welding of thin gauge sheets, forms and plates, where distortion, warpage and residual stresses are to be minimized and burn through areas eliminated. A universal all position welding electrode for low carbon steels, producing quality weld deposits with rapid depositiots. The deposits are uniform without any weld defects. The welders efforts are minimal like slag cleaning etc.

PROCEDURE :

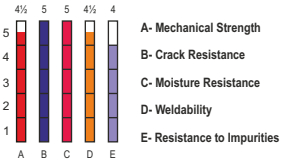
Clean joint area. Use either AC or DC power source. On DC, use straight polarity for shallow penetration & reverse polarity for deep penetration. Tack weld sections to maintain alignment. Hold electrode at slight incline in the direction of travel, about 20º off the perpendicular. Do no weave on contact welding. High arc gap to be avoided where distortion and positional welding are important factors. Slag is self releasing. Deposits heave very fine ripples.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	140-180
3.15	100-130
2.50	65-90

TENSILE STRENGTH :

72,000 PSI (500N/ mm^2)



SUPER STANALLOY ST 22 AC/DC+

TYPICAL APPLICATIONS :

Heavy machinery castings, Crane jibs, Truck chassis, Steel castings, Heavy equipments maintenance.

OUTSTANDING FEATURES :

- ★ Ultra low diffusable hydrogen with high elongation – No hydrogen induced cracking.
- ★ Self lifting slag – minimal welders effort & defect free welding.
- ★ Extremely smooth and spatter & turbulence free arc transfer.
- ★ All positional welding electrode.
- ★ Excellent self lifting slag, no slag inclusion – welders comfort.
- ★ Fantastic strike & restrike capability combined with low smoke.
- ★ High strength reliability.

RECOMMENDATIONS :

For low alloy & medium alloy, high tensile steels. Has superior moisture resistant coating. Excellent for problem steels, having sulphur and other alloys added to base metal to improve machinability. These elements which produce porosity and other hidden defects are purged from the molten pool by electrode arc action. Recommended where toughness and reliability of weld are of prime importance. Can work in subzero temperatures too as deposits has high impact values.

PROCEDURE :

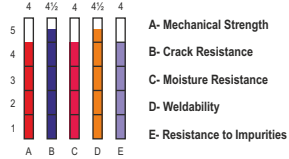
Clean weld area. Maintain a close arc length. Horizontal fillet welds can be made using the contact technique. Vertical joints should be welded from the bottom up by weaving rapidly. Do not whip. Slag is self lifting and hence easy removal.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
5.00	180-225
4.00	140-180
3.15	100-135

TENSILE STRENGTH :

88,000 PSI (610N/ mm^2)



SUPER STANALLOY ST 23 AC/DC+

TYPICAL APPLICATIONS :

Heavy machinery castings, die repairs build up, Crane wheels, Earth moving equipment cracks and cast steel joining.

OUTSTANDING FEATURES :

- ★ Low diffusable hydrogen with high elongation – No hgydrogen induced cracking.
- ★ Self lifting slag – minimal welders effort & defect free welding.
- ★ Extremely smooth and spatter & turbulence free arc transfer.
- ★ All positional welding electrode.
- ★ Excellent self lifting slag, no slag inclusion – welders comfort.
- ★ Fantastic strike & restrike capability combined with low smoke.
- ★ High strength reliability.

RECOMMENDATIONS :

For low alloy & medium alloy, high tensile steels. Has super moisture resistant coating. Excellent for problem steels, having sulphur and other alloys added to base metal to improve machinability. These elements which produce porosity and other hidden defects are purged from the molten pool by electrode arc action. Recommended where toughness and reliability of weld are of prime importance. Can work in subzero temperatures too as deposits has high impact values.

PROCEDURE :

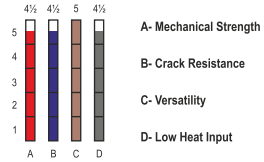
Clean weld area. Maintain a close arc length. Horizontal fillet welds can be made using the contact technique. Vertical joints should be welded from the bottom up by weaving rapidly. Do not whip. Slag is self lifting and hence easy removal.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
5.00	200-240
4.00	160-200
3.15	120-160

TENSILE STRENGTH :

82,000 PSI (575 N/ mm^2)



SUPER STANALLOY DS 31 AC/DC+

TYPICAL APPLICATIONS :

Commercial & Earth moving chasis frames, gears, springs, tool steels, cushion layer prior to hard facing protection, dissimilar alloy steels joining.

OUTSTANDING FEATURES :

- ★ Perfect balance of Ferrite giving maximum strength combined with high tensile strength- No crack welding of high alloy steels.
- ★ Easy to use-low amperage.
- ★ Resistance to surface contaminants.
- ★ Excellent Impact resistance.
- ★ Tough, high crack resistance combined with smooth arc transfer.
- ★ All position welding capability.

RECOMMENDATIONS :

Deposits have high strength, wear resistant welds and overlays on all steels, requiring best possible properties. For leaf and coil springs, Vanadium – moly spring steels, mild and medium & high carbon steels. Ideal for use as a padding layer prior to applying hard facing alloy. Can be use on contaminated surfaces with ease.

PROCEDURE :

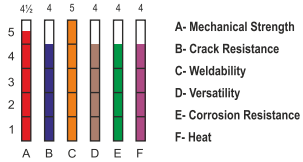
Clean weld area and follow usual joint preparation. Bevel heavy Sections 60º-90°. For high alloy steels, a preheat up 200°C is recommended. Hold a short arc. Run stringer beads. Intermittent welding may be used – specially on high alloy steels. Peening will relieve internal stresses. Cool each pass before chipping. Self lifting slag help in getting sound defect free welding. Interpass temperature has to be below 300°C.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	100-140
3.15	90-110
2.50	50-80
1.60	35-50

TENSILE STRENGTH :

1,20,000 PSI (830 N/ mm^2)



SUPER STANALLOY DS 32 AC/DC+

TYPICAL APPLICATIONS :

Alloy with outstanding corrosion resistance at high temperatures. Suited for dissimilar steel joining and also unknown stainless steels. Overlaying of shafts, furnace parts, valves and steel pumps.

OUTSTANDING FEATURES :

- ★ Wide base metal compatibility.
- ★ Contact type with superior arc characteristics.
- ★ Excellent corrosion resistance at high temperatures.
- ★ Retains strength till 1000°C & also corrosion resistant.
- ★ Self lifting slag design – minimal welders fatigue.
- ★ No red hotness during welding of the electrode.
- ★ Minimal wastage.
- ★ All position welding capability.

RECOMMENDATIONS :

Versatile electrode for overlaying or joining applications across variety of steels & stainless steels. Frostarc formulation enables welding at low amperages and eliminating distorion and warping. Ideal alloy for overlay of wear resistant and impact strength. Good alloy for most stainless steels of any grade. High Cr Ni content enables better functioning in variety of applications.

PROCEDURE :

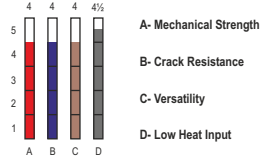
Clean weld area and follow usual joint preparation. Bevel heavy sections 60- 90°. For high alloy steels, preheat up 200°C is recommended. Hold a short arc. Run stringer beads. Intermittent welding may be used – specially on high alloy steels. Self lifting slag help in getting sound defect free welding.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	100-145
3.15	75-110
2.50	50-80

TENSILE STRENGTH :

87,000 PSI (600 N/ mm^2)



SUPER STANALLOY DS 33 AC/DC+

TYPICAL APPLICATIONS :

Ideal for Shaft repairs, bearing areas surfacing, springs, cushion layer before hardfacing, Joining dissimilar & unknown steel & stainless steel combinations.

OUTSTANDING FEATURES :

- ★ Rutile basic electrode with austenitic deposit with blend of ferrite balance making it suitable for high alloy joining.
- ★ Contact type & Self lifting slag electrode design.
- ★ Resistance to surface contaminants & excellent impact resistance.
- ★ Soft welding with minimum spatters.
- ★ Self lifting slag design – minimal welders fatique.
- ★ All position welding capability.

RECOMMENDATIONS :

Deposits have high strength, wear resistant welds and overlays on all steels, requiring best possible properties, can be idealy used for forged or extruded steel components. Special arc formulation allow this alloy to be welded on a very short arc and at a very low amperages. Ideally suited for die cracks, heavy equipments booms and chassis.

PROCEDURE :

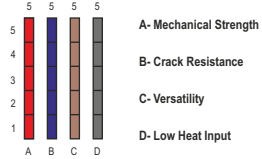
Clean weld area and follow usual joint preparation. Bevel heavy Sections 60º-90º. For high alloy steels, a preheat up 200°C is recommended. Hold a short arc, run stringer beads, intermittent welding may be used – specially on high alloy steels. Peening will relieve internal stresses. Self lifting slag help in getting sound defect free welding. Interpass temperature has to be below 300° C.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	110-150
3.15	80-110
2.50	50-80

TENSILE STRENGTH :

1,00,000 PSI (690 N/ mm^2)



SUPER STANALLOY DS 34 AC/DC+

TYPICAL APPLICATIONS :

Suited for Dies, tools, springs, cushion layer, Joining dissimilar & unknown steel & stainless steel combinations. Machinable build-up and overlay. Commercial & Earth moving Chasis frames, gears, springs, tool steels, cushion layer prior to hard facing protection, dissimilar alloy steels joining.

OUTSTANDING FEATURES :

- ★ Frostarc Formulation leading to low amperage welding with superior penetrations at low amperages.
- ★ Superior " ferrite balance " chemistry engineered to give superior crack free weld deposits on high alloys and high carbon steels with HAZ cracking.
- ★ Contact type & Self lifting slag electrode design.
- ★ Resistance to surface contaminants & excellent impact resistance.
- ★ Tough, high crack resistance combined with smooth arc transfer.
- ★ All position welding capability.

RECOMMENDATIONS :

Frostarc coating plus high-alloy core generates highly ionized arc for "spray-type" transfer of weld meal. Outstanding strength and weldability. CDS produces mini & dense grain structure for high strength, high toughness and ductility. For combinations of similar and dissimilar steels and joining steels of different thicknesses. High versatality of the electrode, makes it universal alloy for welding all dissimilar and unknown combinations of base metals.

PROCEDURE :

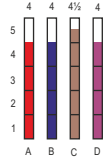
Clean weld area and follow usual joint preparation. Bevel heavy Sections 60º-90º. For high alloy steels, a preheat up 200°C is recommended. Hold a short arc. Run stringer beads. Intermittent welding may be used – specially on high alloy steels. Peening will relieve internal stresses. Self lifting slag help in getting sound defect free welding. Interpass temperature has to be below 300° C.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE	SIZE(mm)	RANGE
4.00	100-140	2.5	50-70
3.15	80-110	1.6	35-50

TENSILE STRENGTH :

1,35,000 PSI (910 N/ mm^2)



A- Mechanical Strength

B- Crack Resistance

C- Versatility

D- High Temp Properties

SUPER STANALLOY TC 41 AC/DC+

TYPICAL APPLICATIONS :

Kiln support tyres of Cement plants, sponge iron units. Heat treatment ovens, like retorts, heat treatment baskets, walking beam furnaces, walking beam buttons, cryogenic equipments, heavy earth moving machinery and general dissimilar and unknown steel joining.

OUTSTANDING FEATURES :

- ★ Widest base metal compatibility.
- ★ All position welding capability.
- ★ Excellent corrosion resistance combined with strength at high temperatures.
- ★ Good thermal cycling capability.
- ★ Strong and tough weld deposits.
- ★ Complete length welding without electrode overheating.
- ★ Excellent ductility and deposits doesn't need PWHT.

RECOMMENDATIONS :

Versatile electrode for all steel including heat treatable kinds. Can be best suited for difficult to weld steels and unknown compositions. Suited ideally for nickel based alloys and their different combinations. The deposits doesn't undergo heat treatment which enables to be used on thermal cylcing applications. These can take care of the strains caused by weld shrinkage in massive sections due to its good elongation properties.

PROCEDURE :

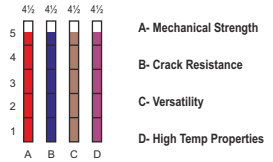
Clean weld area and follow usual joint preparation. Bevel heavy Sections 60-90º. For high alloy steels, a preheat up 200°C is recommended. The alloys can be used by stringer beads and also 2X beads depending on the applications. Maitain a short arc, minimum amperage and backwhip craters. Chip slag between passes and peen deposits. Cool slowly.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	100-140
3.15	70-90
2.50	40-60

TENSILE STRENGTH :

87,000 PSI (600 N/ mm^2)



SUPER STANALLOY TC 42 AC/DC+

TYPICAL APPLICATIONS :

Highly suited for applications where high temperature combined with corrosion and heat involved, like heat retorts, Furnace applications, heavy machinery with high sections, Support tyres of kiln etc.,Highly recommended for dissimilar and unknown steel joining at high temperatures.

OUTSTANDING FEATURES :

- ★ Widest base metal compatibility.
- ★ All position welding capability.
- ★ Excellent corrosion resistance combined with strength at high temperatures and also thermal cycling.
- ★ 105 % electrode recovery.
- ★ Strong and tough weld deposits.
- ★ Niobium bearing high composite alloy for high strength & quality welds.
- ★ Excellent ductility and deposits doesn't need PWHT.

RECOMMENDATIONS :

Versatile electrode for all steel including heat treatable kinds. Can be best suited for difficult to weld steels and unknown compositions. Suited ideally for nickel based alloys and their different combinations. The deposits doesn't undergo heat treatment which enables to be used on thermal cylcing applications. These can take care of the strains caused by weld shrinkage in massive sections due to its good elongation properties.

PROCEDURE :

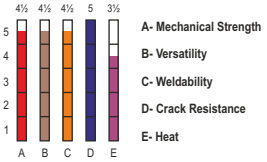
Clean weld area and follow usual joint preparation. Bevel heavy Sections 90°. For high alloy steels, a preheat up 200°C is recommended. The alloys can be used by stringer beads and also 2X beads depending on the applications. Maitain a short arc, minimum amperage and backwhip craters. Chip slag between passes and peen deposits. Cool slowly.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	120-160
3.15	90-120
2.50	70-100

TENSILE STRENGTH :

100000 PSI (700 N/ mm^2)



SUPER STANALLOY EM 35 AC/DC+

TYPICAL APPLICATIONS :

Ideal electrode for joining manganese steels to carbon steels, earth moving equipment buckets, manganese steel liners joining, shot blast machine liners joining, weld clad wear plate joining and also for joining earth moving equipments-chassis repairs.

OUTSTANDING FEATURES :

- ★ Best in class electrode for Mn steel to Carbon steel joining.
- ★ Self releasing slag design.
- ★ Good temperature and corrosion resistant.
- ★ Superior corrosion resistance to intergranular corrosion at high tempertures.
- ★ Strong and tough weld deposits with out of position capability.
- ★ Versatile for joining dissimilar steels, austenitic to ferritic steels and including carbon steels.
- ★ Good ducitity of the weld deposits.

RECOMMENDATIONS :

Highy ductile electrodes makes it ideal for joining manganese steel to carbon steel joining thereby eliminating any HAZ cracks. Best suited as a base layer or a cushion layer for hard surfacing. Doesn't pick up hardness and can be deposited for multiple layers or build up. Can with stand corrosion at high tempertures too. High impact values makes it suitable for joining heavy earth moving machinery.

PROCEDURE :

Clean weld area and follow usual joint preparation. Bevel heavy Sections 60-90°. For high alloy steels, a preheat up 200°C is recommended. The alloys can be used by stringer beads and also 2X beads depending on the applications. Maintain a short arc, minimum amperage and backwhip craters. Chip slag between passes and peen deposits. Cool slowly.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	90-140
3.15	75-110
2.50	55-75

TENSILE STRENGTH :

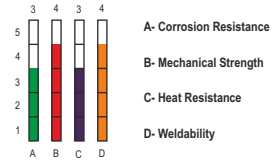
100000 PSI (690 N/ mm^2)

ELONGATION:

40%

D

STAINLESS STEELS



SUPER STANALLOY CN 51 AC/DC+

TYPICAL APPLICATIONS :

Corrosion resistant steel applications like chemical tanks, impellors, pumps, juice trays, stainless steel vessels, steam turbine, food processing equipments & distilleries.

OUTSTANDING FEATURES :

- ★ Complete electrode deposition without wastage.
- ★ Resists pitting caused due to acids and others.
- ★ Smooth finely rippled deposits.
- ★ No overheating of the electrode till the complete length.
- ★ Low moisture absorption leading to quality welds.
- ★ Low amperage welding leading to no IGC.

RECOMMENDATIONS :

Superb weldability, with fine rippled beads. All purpose stainless steel electrode with high heat resistance for metallic arc welding of 18/8 and 19/9 stainless steels types like 301,302,304, 304L,305, 306, 308 and 347. Highly recommended for extra low carbon containing stainless steels to minimise the inter granular corrosion. Applicable for dairy, chemical plants and distillery equipments. Best suited for overlaying on steel where in chemical corrosion and hardness are required. High resistance to scaling, impact and corrosion.

PROCEDURE :

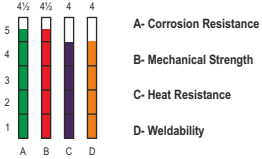
Clean weld area and follow usual joint preparation. Sheet thickness till 10 gauge can be butt welded and heavier sections has to bevelled to a 60° angle. Tack weld to minimise distortion of long joints. Electrode should be not more than 15° from normal. Maintain short arc and stringer beads are advised. Use skip or staggered welding to minimise heat buildup.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	110-150
3.15	80-110
2.50	50-80

TENSILE STRENGTH :

80,000 PSI (550 N/ mm^2)



SUPER STANALLOY CN 52 AC/DC+

TYPICAL APPLICATIONS :

High corrosion resistance structures and vessels like chemical tanks, pumps, impellors, mixers and steam turbine blades.

OUTSTANDING FEATURES :

- ★ Complete electrode deposition without wastage.
- ★ Extra low carbon to resist corrosion problems- Low FN.
- ★ Suitable for titanium and columbium stabilised Stainless steels.
- ★ Resists pitting caused due to acids and others.
- ★ Smooth finely rippled deposits.
- ★ Has good creep resistance.
- ★ Low moisture absorption leading to quality welds.
- ★ Low amperage welding leading to no IGC.

RECOMMENDATIONS :

Superb weldability, with fine rippled beads. All purpose stainless steel electrode with high heat resistance for metallic arc welding of 316/316L. Highly recommended for extra low carbon containing stainless steels to minimise the inter granular corrosion. Applicable for dairy, chemical plants and distillery equipments. Best suited for overlaying on steel where in chemical corrosion and hardness are required. High resistance to scaling, impact and corrosion.

PROCEDURE :

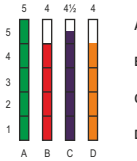
Clean weld area and follow usual joint preparation. Sheet thickness till 10 gauge can be butt welded and heavier sections has to bevelled to a 60° angle. Tack weld to minimise distortion of long joints. Electrode should be not more than 150 from normal. Maintain short arc and stringer beads are advised. Use skip or staggered welding to minimise heat buildup.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	90-140
3.15	75-110
2.50	55-75

TENSILE STRENGTH :

80,000 PSI (550 N/ mm^2)



SUPER STANALLOY CN 53 AC/DC+

TYPICAL APPLICATIONS :

High corrosion resistance structures and vessel like chemical & fertilizer tanks, pumps, impellors, mixers and steam turbine blades. Highly suitable for fertiliser and chemical industries where nil ferrite is required.

OUTSTANDING FEATURES :

- ★ Blend of Nil ferrite combined with no cracks in weld bead.
- ★ Complete electrode deposition without wastage.
- ★ Extra low carbon to resist corrosion problems- Nil FN.
- ★ Resists pitting caused fertilisers and chemicals.
- ★ Smooth finely rippled deposits.
- ★ Low moisture absorption leading to quality welds.
- ★ Low amperage welding leading to no IGC.

RECOMMENDATIONS :

Best in class electrode for welding fertilizer and chemical industry components where Nil ferrite is required. The electrodes superbly manages the nil ferrite and also nil cracks in welding which is difficult to achieve with regular electrodes. Superb weldability, with fine rippled beads. All purpose stainless steel electrode with high heat resistance for metallic arc welding of 18/8 Moly fortified stainless steel specifically 316/316L. Also suitable for types like 315, 318 and 329. Moly and extra low carbon facilitates this alloy to prevent acid corrosion and also enhanced creep . Super slag control parameters make the alloy welder friendly and also defect free welding. Can be used for a highly restrained joints.

PROCEDURE :

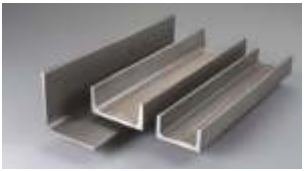
Clean weld area and follow usual joint preparation. Sheet thickness till 10 gauge can be butt welded and heavier sections has to bevelled to a 60° angle. Tack weld to minimise distortion of long joints. Electrode should be not more than 15° from normal. Maintain short arc and stringer beads are advised. Use skip or staggered welding to minimise heat buildup.

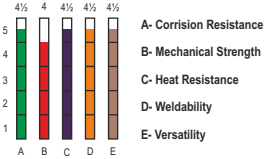
RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	90-140
3.15	75-110
2.50	55-75

TENSILE STRENGTH :

85,000 PSI (590N/ mm^2)





SUPER STANALLOY CN 54 AC/DC+

TYPICAL APPLICATIONS :

Most suited alloy for welding all grades of stainless steels and also unknown stainless steels. Can be used in heat treatment retorts, baskets, trays and heat exchangers.

OUTSTANDING FEATURES :

- ★ Weld metal is Non magnetic and has austenitic structure.
- ★ Complete electrode deposition without wastage.
- ★ Extra low carbon to resist corrosion problems- Low FN.
- ★ Ideal for high oxidation at higher temperatures till 1200°C.
- ★ Resists pitting caused due to acids and others.
- ★ Smooth finely rippled deposits.
- ★ Excellent hot cracking and chemical corrosiion.
- ★ Low moisture absorption leading to quality welds.
- ★ Low amperage welding leading to no IGC.

RECOMMENDATIONS :

Superb weldability, no spatter with fine rippled beads. All purpose stainless steel electrode with high heat resistance for metallic arc welding of 25/20 type of stainless steel and unknown stainless steel. Designed to take high temperature till 1200°C. Can be ideally used for stainless steels to carbon steel joining.

PROCEDURE :

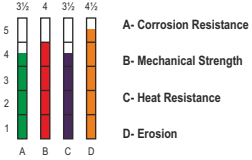
Clean weld area and follow usual joint preparation. Sheet thickness till 10 gauge can be butt welded and heavier sections has to bevelled to a 60° angle. Tack weld to minimise distortion of long joints. Electrode should be not more than 15° from normal. Maintain short arc and stringer beads are advised. Use skip or staggered welding to minimise heat buildup.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	90-140
3.15	75-110
2.50	55-75

TENSILE STRENGTH :

84,000 PSI (580N/ mm^2)



SUPER STANALLOY CN 55 AC/DC+

TYPICAL APPLICATIONS :

Hydraulic & Water Turbines, pump housings, die casting moulds, Castor rolls, shafts

OUTSTANDING FEATURES :

- ★ High corrosion resistance.
- ★ Complete electrode deposition without wastage.
- ★ Excellent toughness.
- ★ Resists pitting due to cavitation.
- ★ Smooth finely rippled deposits.
- ★ Low moisture absorption leading to quality welds.
- ★ Simplified heat treatment.

RECOMMENDATIONS :

Best in class electrode for welding hydraulic turbines. An ideal alloy for hard surfacing of pelton wheels and hydraulic turbines. The weld deposits are very tough and show consistent and homogenous properties The electrode can be used in all poisitons.

PROCEDURE :

Clean weld area. Tack thin parts every 3-5 cm. On 13% chrome steels, preheat to 150°C, deposit with a short to medium arc keeping the electrode almost vertical. Backwhip craters and chip slag between passes. Do not peen the deposits. For developing best mechanical properties, carryout stress relieving at 580°C for 4 hours and slow cool the component. Follow instruction of the steel manufacturer for heat treatable base metals. Machine deposits with carbide tipped tools

RECOMMENDED AMPERAGES :

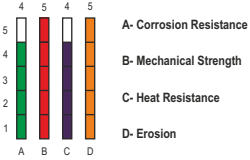
SIZE(mm)	RANGE
4.00	130-160
3.15	100-130

TENSILE STRENGTH :

120000 PSI (830N/mm^2)

HARDNESS :

34 - 38 HRc



SUPER STANALLOY CN 56 AC/DC+

TYPICAL APPLICATIONS :

Hydraulic & Water Turbines, pump housings, die casting moulds, Castor rolls, shafts

OUTSTANDING FEATURES :

- ★ High corrosion resistance.
- ★ Complete electrode deposition without wastage.
- ★ Excellent toughness.
- ★ Resists pitting due to cavitation.
- ★ Smooth finely rippled deposits.
- ★ Low moisture absorption leading to quality welds.
- ★ Simplified heat treatment.

RECOMMENDATIONS :

Best in class electrode for welding hydraulic turbines. An ideal alloy for hard surfacing of pelton wheels and hydrualic turbines. The weld deposits are very tough and show consistent and homogenous properties The electrode can be used in all poisitons

PROCEDURE :

Clean weld area. Tack thin parts every 3-5 cm. On 13% chrome steels, preheat to 150°C, deposit with a short to medium arc keeping the electrode almost vertical. Backwhip craters and chip slag between passes. Do not peen the deposits. For developing best mechanical properties, carryout stress relieving at 580°C for 4 hours and slow cool the component. Follow instruction of the steel manufacturer for heat treatable base metals. Machine deposits with carbide tipped tools

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	110-150
3.15	80-110
2.15	60-80

TENSILE STRENGTH :

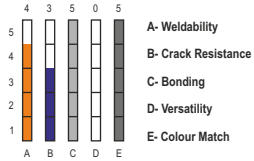
120000 PSI (830N/mm^2)

HARDNESS :

350 BHN (Approx)

E

CAST IRON



SUPER STANALLOY FN 61 AC/DC+

TYPICAL APPLICATIONS :

Ideal electrode for welding oil soaked and highly contaminated cast irons defect rectification in cast iron foundries. Best colour match to grey cast irons.

OUTSTANDING FEATURES :

- ★ Extreme resistance to surface contaminations in cast iron.
- ★ Spray and fast freezing capability – makes it suitable for pin hole free welding of cast irons.
- ★ Non conductive flux coating helps in reaching deep cracks without side arcing, because of non conductive flux coating.
- ★ All positional welding capability.
- ★ Excellent colour match to grey cast irons.

RECOMMENDATIONS :

Ideal electrodes to be used as a buffer layer while doing an cast iron joining job. Best suited for highly contaminated Cast irons. Non conductive coating makes it best suited without side arcing taking place. The deposits have a great colour match to Grey cast iron. Can be used for all thick and also thin section, where machining is not necessary. Fantastic performance on oxidised and contaminated surfaces.

PROCEDURE :

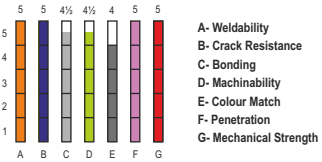
Clean weld area. Vee out cracks with Super Stan Gouge after drilling holes at the end of the cracks, so that propagation of the cracks are arrested. Spray weld this deposit to minimal thickness on the face of groove. Maintain a medium short arc length for a uniform thickness. Do not weave while welding cast irons. Adopt skip, stagger and sequence welding techniques to minimise heat build up. Remove slag by chipping and brushing.

RECOMMENDED AMPERAGES :

SIZE (mm)	RANGE
4.00	120-160
3.15	90-120

TENSILE STRENGTH :

60,000 PSI (440N/ mm^2)



SUPER STANALLOY FN 62 AC/DC+

TYPICAL APPLICATIONS :

Innovative core wire design alloy, which virtually allows all types of weldable cast irons to be welded. Ideally suited for high strength CI weld joints, pump housings, Rotors, compressors, valves and gear box housing.

OUTSTANDING FEATURES :

- ★ Innovative core wire design allowing maximum penetration with maximum tensile strength in its class.
- ★ FROSTARC formulation.
- ★ Touch weld & low amperage welding.
- ★ High resistance to surface contamination by oil, grease and others.
- ★ Highest tensile strength in its class.
- ★ Can be ideally suited for heavy & thin thickness.
- ★ High degree of versatility, Machinability & All position welding.

RECOMMENDATIONS :

Highly recommended alloy for welding all kinds of cast iron joining. Due to innovative core wire design, welding deposits give high penetration combined with high tensile strength. The desposits are highly resistive to surface contaminations. Can be used for thicker and also thinner sections successfully. The frostarc formulation allow this alloy to be used as touch and weld electrode Arc is generated at very low amperages. Weld deposits exhibits excellent machinability.

PROCEDURE :

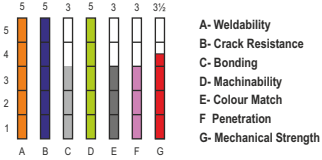
Clean weld area. Vee out cracks with Super Stan Gouge after drilling holes at the end of the cracks, so that propagation of the cracks are arrested. This alloy can be directly deposited on contaminated surfaces, by using stringer beads and using, skip, stagget and sequencing technique. In case of very high contamination give a layer of Super Stanalloy FN 61. Deposits should be peened immediately after welding. Chip slag between passes. Deposits give the maximum tensile strength and there by maximum strength in the joints.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE	SIZE(mm)	RANGE
4.00	100-130	2.5	50-70
3.15	70-100		

TENSILE STRENGTH :

76,000 PSI (525 N/ mm^2)



SUPER STANALLOY FN 63 AC/DC+

TYPICAL APPLICATIONS :

Pump housings, rotors, compressors, valves and gear box casings.

OUTSTANDING FEATURES :

- ★ Pure Nickel electrode for superior crack resistance.
- ★ Frost Arc formulation coating.
- ★ Controlled penetrations.
- ★ Superb Machinability.
- ★ High tensile strength combined with machinability in its class.

RECOMMENDATIONS :

Highly recommended for cast iron joining where machining is required like drilling and tapping. Frost arc coating allows this alloys to be used at low amperages and touch weld. The deposits can be quenched after welding for heat removal. An all position electrode.

PROCEDURE :

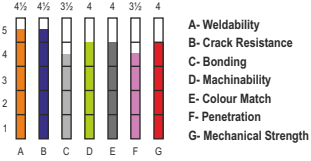
Clean weld area. Vee out cracks with Super Stan Gouge after drilling holes at the end of the cracks, so that propagation of the cracks are arrested. In case of high contamination give a thin layer of Super Stanalloy FN 61. Use stringer beads and using, skip, staggered and sequencing technique. Deposits should be peened immediately after welding. Chip slag between passes. Deposits give the maximum tensile strength and there by maximum strength in the joints.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	100-120
3.15	70-90
2.50	50-60

TENSILE STRENGTH :

65,000 PSI (450 N/ mm^2)



SUPER STANALLOY FN 64 AC/DC-

TYPICAL APPLICATIONS :

Automotive Engine blocks, Cast iron pulleys, gears and sliding tables and thin walled cast iron components.

OUTSTANDING FEATURES :

- ★ High nickel electrode.
- ★ Low temperature- Globular arc transfer design.
- ★ Controlled penetrations.
- ★ Excellent eachinability.
- ★ All position electrode & has good strike and restrike properties.

RECOMMENDATIONS :

Highly recommended for cast iron joining where section thickness are low. Globular arc coating allows this alloys to be used at low amperages and touch and weld. The deposits can be quenched after welding for heat removal. An all position electrode.

PROCEDURE :

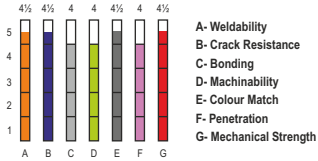
Clean weld area. Vee out cracks with Super Stan Gouge after drilling holes at the end of the cracks, so that propagation of the cracks are arrested. In case of high contamination give a thin layer of Super Stanalloy FN 61. Use stringer beads and using, skip, staggered and sequencing technique. Deposits should be peened immediately after welding. Chip slag between passes. Deposits give the maximum tensile strength and there by maximum strength in the joints.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	100-140
3.15	80-100
2.50	50-80

TENSILE STRENGTH :

62,000 PSI (420N/ mm^2)



SUPER STANALLOY FN 65 AC/DC+

TYPICAL APPLICATIONS :

High walled machine bases, thicker pump castings, differential casings and heavy cast iron section.

OUTSTANDING FEATURES :

- ★ Ferro nickel electrode.
- ★ Highly suited for heavier thickness.
- ★ Resistance to surface contaminations.
- ★ Excellent penetrations.
- ★ Good machinability.
- ★ All position & has good strike and restrike properties.

RECOMMENDATIONS :

Highly recommended for cast iron joining where section thicknesses are high. Globular arc coating allows this alloys to be used at low amperages and touch and weld. Preheat is not required in most cases. Preheat critical parts to around 250°C. An all position electrode. Deposits can take hydrostatic pressure, which means can give pin hole free deposits. Heavy walled sections can be easily welding because of the blend of FN. Dense weld beads which are completely machinable.

PROCEDURE :

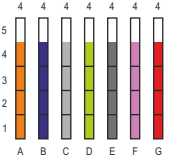
Clean weld area. Vee out cracks with Super Stan Gouge after drilling holes at the end of the cracks, so that propagation of the cracks are arrested. In case of high contamination give a thin layer of Super Stanalloy FN 61. Use stringer beads and using, skip, staggered and sequencing technique. Deposits should be peened immediately after welding. Chip slag between passes. Slow cool the deposits. Deposits give the maximum tensile strength and there by maximum strength in the joints.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	100-140
3.15	80-100
2.50	50-80

TENSILE STRENGTH :

80,000 PSI (550N/ mm^2)



SUPER STANALLOY FN 66 AC/DC+

TYPICAL APPLICATIONS :

Ideal electrode for joining cast irons to carbon steels. Best suited for nodular cast irons or malleable cast irons like Gear box housing, Hubs of automobile axles, cast iron die cladding and buildups.

OUTSTANDING FEATURES :

- ★ Nodular deposits give high crack resistivity.
- ★ Highly suited for heavier thickness.
- ★ Resistance to surface contaminations.
- ★ Excellent penetrations.
- ★ Good machinability.
- ★ Exceptional all position weldability properties.

RECOMMENDATIONS :

Highly recommended for cast iron of nodular or malleable grades. Superior arc coating allows this alloys to be used at low amperages and touch and weld. Preheat is not required in most cases. Preheat critical parts to around 250°C. An all position electrode. Deposits can take hydrostatic pressure, which means can give pin hole free deposits. Heavy walled sections can be easily welding because of the blend of FN. Dense weld beads which are completely machinable. Most suited for Nodular and reactive torque bearing castings.

PROCEDURE :

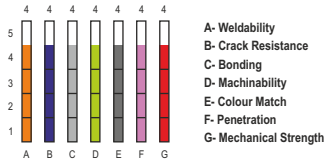
Clean weld area. Vee out cracks with Super Stan Gouge after drilling holes at the end of the cracks, so that propagation of the cracks are arrested. In case of high contamination give a thin layer of Super Stanalloy FN 61. Use stringer beads and using, skip, staggered and sequencing technique. Deposits should be peened immediately after welding. Chip slag between passes. Slow cool the deposits. Deposits give the maximum tensile strength and there by maximum strength in the joints.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	100-140
3.15	80-100
2.50	50-80

TENSILE STRENGTH :

70,000 PSI (500N/ mm^2)



SUPER STANALLOY FN 67 AC/DC+

TYPICAL APPLICATIONS :

High walled machine bases, thicker pump castings, differential casings and heavy cast iron section.

OUTSTANDING FEATURES :

- ★ Ferro nickel electrode.
- ★ Highly suited for heavier thickness.
- ★ Resistance to surface contaminations.
- ★ Excellent penetrations.
- ★ Good machinability.
- ★ All position & has good strike and restrike properties.

RECOMMENDATIONS :

Highly recommended for cast iron joining where section thickness are high. Globular arc coating allows this alloys to be used at low amperages and touch and weld. Preheat is not required in most cases. Preheat critical parts to around 250°C. An all position electrode. Deposits can take hydrostatic pressure, which means can give pin hole free deposits. Heavy walled sections can be easily welding because of the blend of FN. Dense weld beads which are completely machinable.

PROCEDURE :

Clean weld area. Vee out cracks with Super Stan Gouge after drilling holes at the end of the cracks, so that propagation of the cracks are arrested. In case of high contamination give a thin layer of Super Stanalloy FN 61. Use stringer beads and using, skip, staggered and sequencing technique. Deposits should be peened immediately after welding. Chip slag between passes. Slow cool the deposits. Deposits give the maximum tensile strength and there by maximum strength in the joints.

RECOMMENDED AMPERAGES :

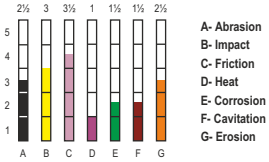
SIZE(mm)	RANGE
4.00	100-140
3.15	80-100
2.50	50-70

TENSILE STRENGTH :

70,000 PSI (500N/ mm^2)

F

HARDFACING



SUPER STANHARD FC 71 AC/DC+

TYPICAL APPLICATIONS :

Back hoe buckets, Excavating equipments, Ploughs, scrappers, sugar mill pinions, couplings, Hammers etc.

OUTSTANDING FEATURES :

- ★ Basic coated electrode with impact resistance.
- ★ High hardness resisting abrasion.
- ★ Rapid deposition with self lifting slag.
- ★ All position electrode.
- ★ Can take compressive loads combined with abrasion without spalling.

RECOMMENDATIONS :

Suitable alloy for hardfacing and coating of wear prone equipments due to abrasive wear. This can be used on carbon steels, manganese steels and also on malleable iron. Best recommended for worn out parts and can be deposited on multi layers. The alloy has high hardness combined with spalling resistance. The deposits can take compressive loads and to some extent impact too.

PROCEDURE :

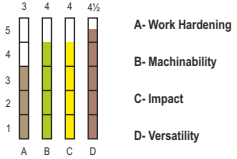
Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Pre heat heavy sections to about 200°C to 250°C. Use stringer beads or 2X weaving beads holding a short arc. The deposits can be deposited with out the danger of cracking. The stress relieving checks are hair line showing the tough matrix structure. Controlling of heat buildup by maintaining interpass temperature can be best. Chip slag between passes.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
5.00	180-210
4.00	140-170
3.15	90-120

HARDNESS :

58-60 HRc



SUPER STANHARD FC 72 AC/DC+

TYPICAL APPLICATIONS :

Sugar mill Pinions, couplings, tailbars, hammers, fibrizors, wobblers, excavators idlers, rolls, gear teeth, TMT roll passes rolls etc.,

OUTSTANDING FEATURES :

- ★ Hardfacing alloys for protective coating of all ferrous metals.
- ★ Superior toughness and deposits doesn't spall under severe loads.
- ★ Deposits are highly machinable.
- ★ Weld deposits exhibits low coefficient of friction.
- ★ Basic coated electrode with easy slag removal and all position weldability.

RECOMMENDATIONS :

Suitable alloy for hardfacing and coating of ferrous metals prone to severe impact and abrasion. The components subjected to heavy loads and pressures can be hardfacing with this products as these deposits can take good compressive loads and can work under pressure without spalling. The weld metal solidfied rapidly making the alloy weldable at all positions. The deposits can be easily machined with tipped tools.

PROCEDURE :

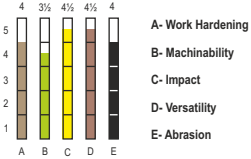
Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Pre heat heavy sections to about 100°C to 150°C. Use stringer beads or 2X weaving beads holding a short arc. The deposits can be deposited with out the danger of cracking. The stress relieving checks are hair line showing the tough matrix structure. Controlling of heat buildup by maintaining interpass temperature can be best. Chip slag between passes.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
5.00	180-230
4.00	140-180
3.15	100-140

HARDNESS :

28-32 HRc



SUPER STANHARD MN 73 AC/DC+

TYPICAL APPLICATIONS :

Manganese steel hammers, Impactor arms, grizzly bars, sprockets, heavy equipment tumblers, wear pads and track pads of Heavy earth moving equipments.

OUTSTANDING FEATURES :

- ★ Ideally suited for Hadfield/ Manganese steels.
- ★ Ultimate toughness and deposits doesn't spall under severe loads.
- ★ Deposits are machinable.
- ★ Rapid deposition along with quick freeze deposits makes its applications in all positions.
- ★ Low temperature welding adds to the merit of the electrode particularly for Manganese steel surfacing.
- ★ Work hardening type of alloys.

RECOMMENDATIONS :

Suitable alloy for building up worn out manganese steel wear parts which are subjected to heavy impact. A manganese compatible electrode with additions of Nickel and fortified elements makes it an ideal electrode for buildup and surfacing Manganese steels. Superior alloy for cushioning and also buildup. The deposits can take good impact and can work under pressure without spalling, The deposits work harden to give good abrasion resistance.

PROCEDURE :

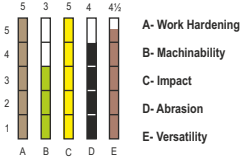
Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Do not preheat Manganese steels. Maintain a short arc and deposits short beads of 5-7 cm at a time to avoid heat build up. The interpass weld temperature should not cross 150°C for best performance and fault free service. Peening the deposits are highly recommended for optimum stress free life

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE	SIZE(mm)	RANGE
5.00	160-225	3.15	90-130
4.00	140-170		

HARDNESS :

20 HRc (As deposited)
45-50 HRc (Work hardened)



SUPER STANHARD FW 74 AC/DC+

TYPICAL APPLICATIONS :

Front idlers, track rolls, track pads and links of earth moving machinery, Sprockets, conveyor rolls, railway crossings, crusher hammers, blow bars. Best for cushioning layers before hard facing.

OUTSTANDING FEATURES :

- ★ Ideally suited for Hadfield/ Manganese steels.
- ★ Deposits rapidly work hardens in service.
- ★ Deposits doesn't chunk out in service due to unique alloy design.
- ★ Excellent crack resistivity.
- ★ Has good low coefficient of friction property.
- ★ All position welding alloy.

RECOMMENDATIONS :

Suitable alloy for building up worn out manganese steel wear parts which are subjected to heavy impact. A Chrome manganese electrode with additions of Nickel makes it an ideal electrode for buildup and surfacing Manganese steels. Superior alloy for cushioning and buildup. The deposits work harden rapidly to high hardness making it ideally suited for earth moving and crushers applications. The multiple pass build is possible without chunking of the deposit.

PROCEDURE :

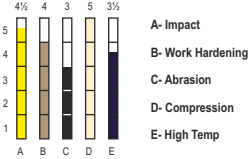
Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Do not preheat Manganese steel. Maintain a short arc and deposits short beads of 5-7 cm at a time to avoid heat build up. The interpass weld temperature should not cross 150°C for best performance and fault free service. Peening the deposits are highly recommended for optimum stress free life

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
5.00	160-225
4.00	140-180

HARDNESS :

22 HRc (As deposited)
50 HRc (Work hardened)



SUPER STANHARD NA 75 AC/DC+

TYPICAL APPLICATIONS :

Forged/ Alloyed sprockets, Heavy earthmoving tumblers, idlers, Crusher jaws, conical crusher mantle, coke crushers etc.,

OUTSTANDING FEATURES :

- ★ Deposits work harden in service.
- ★ Nickel based austenitic deposits gives high temperature.
- ★ Unique alloy for hardfacing & joining.
- ★ Excellent crack resistivity.
- ★ Deposits has low coefficient of friction.
- ★ Deposits are galling & spalling resistant.
- ★ All position welding alloy.

RECOMMENDATIONS :

A high alloys nickel based austenitic deposit, exhibiting high temperature properties in strength, corrosion and also compressive galling. Deposits have very low coefficient of friction and also polishes in service. Highly recommended for buildup, cladding and joining of high alloy/ medium alloyed forged earthmoving components and heavy machinery like crushers and impactors.

PROCEDURE :

Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. In case of joining bevel the edges to 60-90°C. Deposit stringer beads or 2X beads as the application warrants. Remove and chip slag between passes. Peening of deposits is required when used on high carbon and high alloyed steels. When used on managanese steel do not allow the interpass temperature and the base metal temperature to exceed 150°C

RECOMMENDED AMPERAGES :

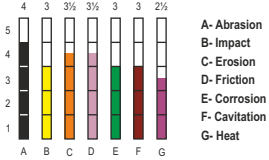
SIZE(mm)	RANGE
5.00	160-225
4.00	140-180

HARDNESS :

20-22 HRc (As deposited)
45-48 HRc (Work hardened)

TENSILE STRENGTH :

1,20,000 PSI (830N/ mm^2)



SUPER STANHARD AC 76 AC/DC-

TYPICAL APPLICATIONS :

Earthmoving applications like, buckets, track pads, lip plates, teeth points, scrappers, dozers blades etc.

OUTSTANDING FEATURES :

- ★ Very High Single layers hardness and resists high abrasion.
- ★ Very mild stress relieving checks – no uprooting of hardfaced deposit.
- ★ Smooth bead appearance and whitish appearance.
- ★ All position electrode.
- ★ Touch weld, excellent weldability and high deposition rates.
- ★ Can take temperatures up to 400°C.

RECOMMENDATIONS :

Suitable alloy for hardfacing and coating of wear prone equipments due to abrasive wear. This can be used on carbon steels, manganese steels and also on malleable iron. Deposits polish in service and offers low coefficient of friction. All position compatibility of the electrodes makes welding easy. Extensitely can be used on earth moving machinery, crushing applications.

PROCEDURE :

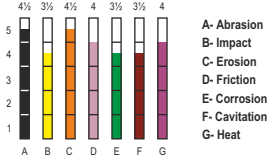
Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Pre heat heavy sections to about 200°C to 250°C. Do not preheat 14% Mn Steels. If the build up is high it is recommended to use Super Stanhard MN 73 as a cushion layers for best performances. Use stringer beads or 2X weaving beads holding a short arc. The deposits can be deposited with out the danger of cracking. The stress relieving checks are hair line showing the tough matrix structure. In case of Cast irons, a base layer of Super Stanalloy FN 65 is recommended for best bonding.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
5.00	150-190
4.00	115-150
3.15	85-120

HARDNESS :

60-65 HRc



SUPER STANHARD CR 77 AC/DC+

TYPICAL APPLICATIONS :

Fibrizor hammers, anvil plates, trash plates of sugar mills, ID fan Hardfacing, Rubber processing machinery chambers, augers, pulper screws,hammers etc.

OUTSTANDING FEATURES :

- ★ Outstanding electrode with combination of wear properties.
- ★ Ultimate alloy resisting abrasion, erosion, heat, moderate impact & moderate corrosion.
- ★ Bald deposit, giving best results in erosive atmospheres.
- ★ Temperature resistance up to 550°C.
- ★ Can take good compressive loads too.
- ★ High recovery electrode.

RECOMMENDATIONS :

Ideal alloys for hardfacing applications which warrants, high hardness to resist abrasion, abrasion combined with heat upt 550°C. Deposits exhibits bald appearance without any ripples, enables best results in erosive atmospheres. The deposits are whitish in colour which shows that corrosion can be tackled better by the deposits, apart from taking compressive and impact loads.

PROCEDURE :

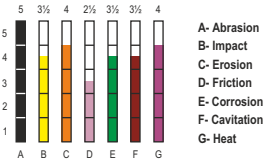
Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Pre heat heavy sections to about 200°C to 250°C. Do not preheat 14% Mn Steels. If the build up is high it is recommended to use Super Stanhard NA 75 as a cushion layer for best performances. Use stringer beads or 2X weaving beads holding a short arc. The deposits can be deposited without the danger of cracking. The stress relieving checks are hair line showing the tough matrix structure. In case of Cast irons, a base layer of Super Stanalloy FN 65 is recommended for best bonding. Remove slag by chipping

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
5.00	120-160
4.00	110-140

HARDNESS :

57-60 HRc



SUPER STANHARD CC 78 AC/DC+

TYPICAL APPLICATIONS :

Bucket teeth, Dragline buckets, Dozer blades, Bucket bottom, Impactor arms. Wobblers, crushing hammers & gyratory crushers.

OUTSTANDING FEATURES :

- ★ Outstanding electrode for grinding abrasion.
- ★ Deposits exhibit grinding abrasion, pressure and moderate impact resistance.
- ★ Slag free deposit with 160% metal recovery.
- ★ Hair line stress relieving checks ensuring no chunking of deposits.
- ★ Rapid deposition rates.
- ★ Can withstand temperature till 500°C.

RECOMMENDATIONS :

Innovative high coated and heavily alloyed electrode for grinding abrasion like teeth points and hammers. Can be used on manganese steels and also carbon steels with ease. The weld deposits resists grinding abrasion combined with Heat, moderate impact and also mild pressures.

PROCEDURE :

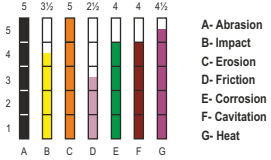
Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Pre heat heavy sections to about 200°C to 250°C. In Mn steels use a base layer of Super Stanhard NA 75 & do not preheat. In carbon steels,If the build up is high it is recommended to use Super Stanalloy DS 34 as a cushion layers for best performances. Use stringer beads or 2X weaving beads holding a short arc. The deposits can be deposited with out the danger of cracking. The stress relieving checks are hair line showing the tough matrix structure. In case of Cast irons, a base layer of Super Stanalloy FN 65 is recommended for best bonding. Remove slag by chipping.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
5.00	170-200
3.15	130-170

HARDNESS :

63-65 HRc



SUPER STANHARD HT 79 AC/DC+

TYPICAL APPLICATIONS :

Clinker crusher hammers, Sinter crusher hammers, sinter & clinker hubs, Sinter and clinker knife bars, ID fans handling high temperature flue gases, slurry pumps, billet conveyor rolls, hot slag conveyors.

OUTSTANDING FEATURES :

- ★ Outstanding electrode for High Heat combined with grinding abrasion & Erosion.
- ★ Excellent resistance to wear at high temperatures till 750°C.
- ★ Slag free deposit, with 170% metal recovery.
- ★ Hair line stress relieving checks ensuring no chunking of deposits.
- ★ Rapid deposition rates.
- ★ Can withstand temperature till 850°C.

RECOMMENDATIONS :

Innovative high coated and heavily alloyed electrode for high heat combined with gouging abrasion & erosion. Can be used on manganese steels and also carbon steels with ease. The weld deposits resists grinding abrasion combined with high Heat & Erosion.

PROCEDURE :

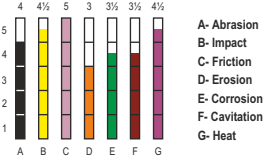
Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Pre heat heavy sections to about 200°C to 250°C. In Mn steels use a base layer of Sunper Stanhard NA 75 & do not preheat. In carbon steels, If the build up is high it is recommended to use Super Stanalloy DS 34 as a cushion layers for best performances. Use stringer beads or 2X weaving beads holding a short arc. The deposits can be deposited with out the danger of cracking. The stress relieving checks are hair line showing the tough matrix structure. In case of Cast irons, a base layer of Super Stanalloy FN 65 is recommended for best bonding. Remove slag by chipping

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	170-200
3.15	130-170

HARDNESS :

63-67 HRc



SUPER STANHARD HS 80 AC/DC+

TYPICAL APPLICATIONS :

Composite high steel steel dies,punches, trimming dies, shears, piercing dies, bar cutters & coke cutters.

OUTSTANDING FEATURES :

- ★ Heat treatable deposits.
- ★ High speed steel type overlays with ultimate frictional resistance.
- ★ Excellent edge retention properties even at elevated temperatures.
- ★ High hardness combined with knife edge properties.

RECOMMENDATIONS :

Superb alloy which retains hardness at high temperatures combined with very low coefficient of friction. The deposits retain edge inspite of high friction and abrasion due to the high alloy electrode. Excellent for knife edges and machine tool parts subject to heavy frictional wear. Ideal for building composite blanking or punching dies.

PROCEDURE :

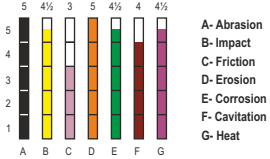
Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Pre Heat die steel and high alloys to 350°-400°C. Use stringer beads deposition and also peen the deposits to relieve stresses. Chip slag in between passes and also maintain the temperature in the base metal while depositing on die steels & high carbon/ alloyed steels. Post heating will help in better performance. Use Super Stanalloy DS 34 as a cushion layers for best results

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	150-180
3.15	120-150
2.50	90-120

HARDNESS :

60-65 HRc



SUPER STANHARD UL 81 AC/DC+

TYPICAL APPLICATIONS :

Sintered carbide table rolls, table liners buttoning, Clinker crusher hammers, Sinter crusher hammers, sinter & clinker hubs, Sinter and clinker knife bars, ID fans handling high tempature flue gases, slurry pumps, billet conveyor rolls, hot slag conveyors.

OUTSTANDING FEATURES :

- ★ Ultimate single layer hardness of around 70 HRc.
- ★ Highest Volume fraction of complex carbides with optimised matrix.
- ★ High temperature hardness till 800°C.
- ★ High metal recovery up to 170%.
- ★ All position welding alloy.

RECOMMENDATIONS :

An unique alloys with high volume fraction of complex carbides in an martensitic matrix, giving best performance against griding abrasion combined with erosion and high heat. The bonding of the alloy on the high carbon/ alloyed base metal is superb. Deposits are rich in Chromium, boron and other complex carbides making is ideally suitable for high performance delivery.

PROCEDURE :

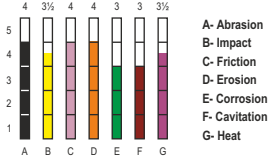
Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Pre heat heavy sections to about 200°c to 250°c. In Mn steels use a base layer of Super Stanhard NA 75 & do not preheat. In carbon steels,If the build up is high it is recommended to use Super Stanalloy DS 34 as a cushion layers for best performances. Use stringer beads or 2X weaving beads holding a short arc. The deposits can be deposited with out the danger of cracking. The stress relieving checks are hair line showing the tough matrix structure. In case of Cast irons, a base layer of Super Stanalloy FN 65 is recommended for best bonding. Remove slag by chipping

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	120-170
3.15	90-130

HARDNESS :

68-70 HRc



SUPER STANHARD CR 82 AC/DC+

TYPICAL APPLICATIONS :

Fibrizor hammers, anvil plates, trash plates of sugar mills, ID fan Hardfacing, Rubber processing machinery chambers, augers, pulper screws,hammers etc.,

OUTSTANDING FEATURES :

- ★ Outstanding electrode with combination of wear properties.
- ★ Ultimate alloy Resisting Abrasion, Erosion, Heat, Moderate impact & Moderate corrosion.
- ★ Bald deposit, giving best results in erosive atomophere.
- ★ Temperature resistance up to 450°C.
- ★ Can take good compressive loads.
- ★ High recovery electrode.

RECOMMENDATIONS :

Ideal alloys for hardfacing applications which warrants, high hardness to resist abrasion, abrasion combined with heat upto 450°C. Deposits exhibits bald appearance without any ripples, enables best results in erosive atmospheres. The deposits are whitish in colour which shows that corrosion can be tackled better by the deposits, apart from taking compressive and also impact loads.

PROCEDURE :

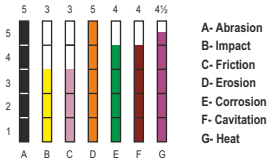
Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Pre heat heavy sections to about 200°C to 250°C. Do not prehear 14 % Mn Steels. If the build up is high it is recommended to use Super Stanhard NA75 as a cushion layers for best performances. Use stringer beads or 2X weaving beads holding a short arc. The deposits can be deposited with out the danger of cracking. The stress relieving checks are hair line showing the tough matrix structure. In case of Cast irons, a base layer of Super Stanalloy FN 65 is recommended for best bonding. Remove slag by chipping.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	160-190
3.15	120-150

HARDNESS :

57-60 HRc



SUPER STANHARD PASTE 83

TYPICAL APPLICATIONS :

ID Fans, Impellors, Chutes, Ploughs, Mixer blades, etc.

OUTSTANDING FEATURES :

- ★ Superior alloy formulation leading to high hardness.
- ★ Retains hardness at elevated temperatures.
- ★ Boron fortified with a blend of high resilient matrix.
- ★ Stress relief check free deposit.
- ★ Uniform through hardness on a thinnest deposit.
- ★ No wastage.
- ★ Paste formulation for ease of use.

RECOMMENDATIONS :

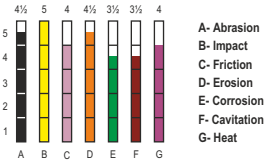
Special performance paste, which when fused to the base metals exhibits, high hardness combined with best erosion resistance at elevated temperatures like 900°C. The highly alloyed paste has rich and complex carbides offering the superior wear resistance properties. The deposits when fused doesn't have any stress relieving checks making it ideal for a erosive atmosphere. Speciality of this paste is it gives the hardness in just 1.5mm when applied without making much of dilution in the base metal, making it ideal for fan applications, without increasing the weight of the fan much and hence results in lower power consumption.

PROCEDURE :

Clean weld area. Spread the paste to the uniform thickness of 1.5mm with a spatula after properly mixing the contents in the container. Allow the paste to touch dry say fo 2-3 hours. After touch dry, arc the electrode with Super Stan Fuse to fuse the same to the base metal. Maintain short arc and doesn't allow the pointed tip of the Super Stan Fuse to touch the base metal. Use 2X or more weaving technique to fuse the complete surface. Stagger the fusing to avoid distortion of warpage.

HARDNESS :

68-70 HRc



SUPER STANHARD CC 84 AC/DC+

TYPICAL APPLICATIONS :

Die build ups, Punches, wobblers, Dam ring buildup, impactor arm, grizzly bars, hammers, clinker crushers etc.

OUTSTANDING FEATURES :

- ★ Very high build up capability with stress relieving checks.
- ★ Good edge retention properties.
- ★ Deposits can take impact and compressive loads without spalling at high temperatures.
- ★ Rich chemistry deposits for best performane.
- ★ All position welding alloy & high metal recovery.
- ★ Very thin slag.

RECOMMENDATIONS :

High suited alloys for building up worn out dies, punches and other components like wobblers, impactor arms etc, where in the buildup requirements are high more than 8-10 layers. The deposits can take good impact and pressures without the deposits spalling. The deposits inspite of being hard doesn't have any stress relieving checks due to its unique chemistry. The deposits can take temperatures up to 550°C.

PROCEDURE :

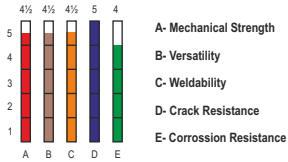
Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Pre heat heavy sections to about 200°C to 250°C. In Mn steels use a base layer of Sunper Stanhard NA 75 & do not preheat. In carbon steels,If the build up is high it is recommended to use Super Stanalloy DS 34 as a cushion layers for best performances. Use 2X /3X weaving beads holding a short arc. The deposits can be deposited with out the danger of cracking. In case of Cast irons, a base layer of Super Stanalloy FN 65 is recommended for best bonding. Remove slag by chipping.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	110-175
3.15	80-120

HARDNESS :

54-57 HRc



SUPER STANHARD SM 85 AC/DC+

TYPICAL APPLICATIONS :

Sugar mill Journal areas, general shaft bearing areas, Ideal electrode for joining manganese steels to carbon steels, earth moving equipment buckets, Manganese steel liners joining, shot blast cleaning liners joining, weld clad wear plate joining and also for joining earth moving equipments chassis repairs.

OUTSTANDING FEATURES :

- ★ Excellent finish along with low coefficient of friction.
- ★ Self releasing slag design.
- ★ Best corrosion resistance to sugar cane juice.
- ★ Superior corrosion resistance to intergranular corrosion at high temperatures.
- ★ Strong and tough weld deposits with out of position capability.
- ★ Good ducitity of the weld deposits.

RECOMMENDATIONS :

Highy ductile electrodes makes it ideal for joining manganese steel to carbon steel joining thereby eliminating any HAZ cracks. Best suited as a base layer or a cushion layer for hard surfacing. Doesn't pick up hardness and can be deposited for multiple layers or build up. Can with stand corrosion at high tempertures too. High impact values makes it suitable for joining heavy earth moving machinery.

PROCEDURE :

Clean weld area and follow usual joint preparation. Bevel heavy Sections 60-90°. For high alloy steels, a preheat up 200°C is recommended. The alloys can be used by stringer beads and also 2X beads depending on the applications. Maitain a short arc, minimum amperage and backwhip craters. Chip slag between passes and peen deposits. Cool slowly

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE	SIZE(mm)	RANGE
4.00	90-140	2.5	55-75
3.15	75-110		

TENSILE STRENGTH :

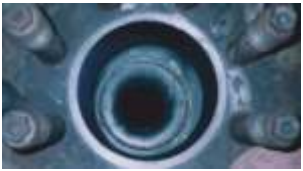
1,00,000 PSI (690 N/ mm^2)

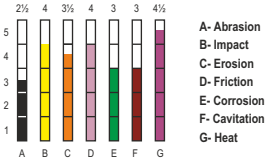
ELONGATION :

40%

G

COBALT ALLOYS





SUPER STANHARD CO 06 AC/DC+

TYPICAL APPLICATIONS :

Hydraulic turbine parts, hot working tools, chemical and high pressure steam valves, hot forming rolls, dies, augers, exhaust valves,etc.,

OUTSTANDING FEATURES :

- ★ Controlled weld bead for easy edge buildups.
- ★ High resistance to impact, friction, abrasion & erosion at high temperatures.
- ★ Outstanding weldability with excellent deposit crack resistivity.
- ★ High resistance to thermal and mechanical shocks.
- ★ All position and self releasing slag design.

RECOMMENDATIONS :

For all steels including heat treatable types, also for overlay applications on cobalt alloys and special purpose steels. The deposits retains hardness at elevated temperature and also exhibits good corrosion and oxidation resistance at these high temperatures. The deposit incorporates cobalt – chrome- molybdneum alloy system which has extraordinary resistance at high temperature, corrosion and oxidation. Deposits are machinable

PROCEDURE :

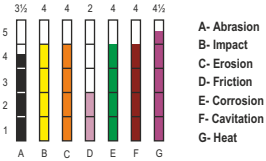
Clean weld area. Remove all fatigued and cracked metal and previous overlays. Pre heat not normally required but beneficial when welding heavy sections or crack sensitive base metals. Maintain short arc and deposit stringer beads, back whip craters and remove slag between passes. For out of position, hold short arc and weave moderately.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	100-130
3.15	80-100

HARDNESS :

45 HRc



SUPER STANHARD CO 12 AC/DC+

TYPICAL APPLICATIONS :

Hot pressing dies, shear blades, hot cutting blades and hot forging dies..etc.

OUTSTANDING FEATURES :

- ★ Controlled weld bead for easy edge buildups.
- ★ Exceptional resistance to heat and retaining hot harness property.
- ★ Outstanding weldability with excellent deposit crack resistivity.
- ★ Superb resistance to impact and abrasion.
- ★ All position electrode.
- ★ Self releasing slag design.

RECOMMENDATIONS :

For all steels including heat treatable types, also for overlay applications on cobalt alloys and special purpose steels. The deposits retains hardness at elevated temperature and also exhibits good corrosion and oxidation resistance at these high temperatures. Excellent wear resistant deposits on carbon steels and overlays on alloy steels. Recommended for handling equipments combined with heat and abrasion.

PROCEDURE :

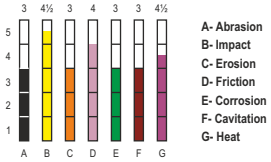
Clean weld area. Remove all fatigued and cracked metal and precious overlays. Pre heat not normally required but beneficial when welding heavy sections or crack sensitive base metals in carbon steels. It is recommended to use Super Stanalloy DS 34 as a cushion layers for best performances. In case of Cast irons, a base layer of Super Stanalloy FN 65 is recommended for best bonding. Remove slag by chipping ,maintain short arc and deposit stringer beads, back whip craters and remove slag between passes. For out of position, hold short arc and weave moderately.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	100-130
3.15	80-110

HARDNESS :

50 HRc



SUPER STANHARD CO 21 AC/DC+

TYPICAL APPLICATIONS :

Hydraulic turbine parts, hot cutting tools, chemical and high pressure steam valves, hot forming dies and exhaust valves.

OUTSTANDING FEATURES :

- ★ High resistance to impact, friction combined with abrasion, erosion at high temperatures.
- ★ Exceptional Resistance to heat and retaining hot hardness property.
- ★ Outstanding weldability with excellent deposit crack resistivity.
- ★ Exceptional resistance to oxidation and reducing environments upto 1200°C.
- ★ All position and self releasing slag design.

RECOMMENDATIONS :

For all steels including heat treatable types, also for overlay applications on cobalt alloys and special purpose steels. The deposits retains hardness at elevated temperature and also exhibits good corrosion and oxidation resistance at these high temperatures. Excellent wear resistant deposits on carbon steels and overlays on alloy steels. Recommended for handling equipments combined with heat and abrasion.

PROCEDURE :

Clean weld area. Remove all fatigued and cracked metal and precious overlays. Pre heat not normally required but beneficial when welding heavy sections or crack sensitive base metals. In carbon steels. It is recommended to use Super Stanalloy DS 34 as a cushion layers for best performances. Remove slag by chipping ,maintain short arc and deposit stringer beads, back whip craters and remove slag between passes. For out of position, hold short arc and weave moderately.

RECOMMENDED AMPERAGES :

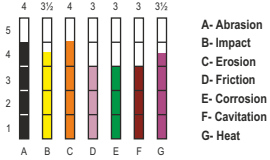
SIZE(mm)	RANGE
4.00	100-130
3.15	80-110

HARDNESS :

45-50 HRc

HRDFACING - TUBULAR

H



SUPER STANHARD CC(T) 91 AC/DC+

TYPICAL APPLICATIONS :

Hydraulic turbine parts, hotcutting tools, chemical and high pressure steam valves, hot forming dies and exhaust valves.

OUTSTANDING FEATURES :

- ★ Ultimate single layer hardness .
- ★ Seamless steel tube construction for better arc characteristics.
- ★ No flux dropping in the weld pool during welding.
- ★ Complete electrode deposition without electrode overheating.
- ★ Good control of weld pool during welding.
- ★ Slagless deposit with high metal recovery.
- ★ Minimal fumes, gases. Easy strike and restrike.

RECOMMENDATIONS :

A tubular product, with Chromium carbides and complex carbide rich deposits resists grinding abrasion along with erosion. The buildup can be done with ease with these alloys. Highly recommended for parts subjected to grinding abrasion combined with moderate heat and erosion. Complete electrode deposition is possible without the electrode getting red hot and leading to wastages. The productivity can be the best with these electrodes. Low temperature welding with good current density due to tubular design.

PROCEDURE :

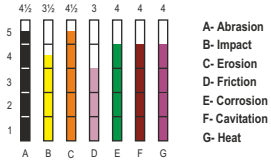
Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Pre heat heavy sections to about 200°C to 250°C. In Mn steels use a base layer of Super Stanhard NA75 & do not preheat. In carbon steels,If the build up is high it is recommended to use Super Stanalloy CN54 as a cushion layers for best performances. Use stringer beads or 2X weaving beads holding a short arc. The deposits can be deposited with out the danger of cracking. The stress relieving checks are hair line showing the tough matrix structure. In case of Cast irons, a base layer of Super Stanalloy FN 65 is recommended for best bonding. Remove slag by chipping.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
8.00	150-180
6.00	140-160

HARDNESS :

57-62 HRc



SUPER STANHARD HT(T) 92 AC/DC+

TYPICAL APPLICATIONS :

Clinker crushers, Sinter breakers, burner buckets of power plants, ash conveying screws, Blow bars, Conveyor chutes etc.

OUTSTANDING FEATURES :

- ★ High hardness retention at high temperature.
- ★ Seamless steel tube construction for better arc characteristics.
- ★ No flux dropping in the weld pool during welding.
- ★ Complete electrode deposition without electrode overheating.
- ★ Good control of weld pool during welding.
- ★ Slagless deposit with high metal recovery.
- ★ Minimal fumes, gases. Easy strike and restrike.

RECOMMENDATIONS :

A tubular product, with rich complex carbide rich deposits resists high temperature grinding abrasion along with erosion. The buildup can be done with ease with these alloys. Highly recommended for parts subjected to grinding abrasion combined with high heat and erosion. Temperature resistance up to 750°C. Complete electrode deposition is possible without the electrode getting red hot and leading to wastages. The productivity can be the best with these electrodes. Low temperature welding with good current density due to tubular design.

PROCEDURE :

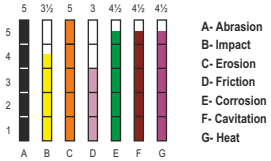
Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Pre heat heavy sections to about 200°C to 250°C. In Mn steels use a base layer of Super Stanhard NA75 & do not preheat. In carbon steels,If the build up is high it is recommended to use Super Stanalloy CN54 as a cushion layers for best performances. Use stringer beads or 2X weaving beads holding a short arc. The deposits can be deposited without the danger of cracking. The stress relieving checks are hair line showing the tough matrix structure. In case of Cast irons, a base layer of Super Stanalloy FN 65 is recommended for best bonding. Remove slag by chipping

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
8.00	150-180
6.00	140-160

HARDNESS :

58-64 HRc



SUPER STANHARD HT(T) 93 AC/DC+

TYPICAL APPLICATIONS :

Sinter star crushers, clinker crushers, BLT chutes, Bell and Hopper, ash pumps, slurry pumps, Coal fired boiler burner buckets etc.,

OUTSTANDING FEATURES :

- ★ Ultimate hardness combined with heat resistance up to 900°C.
- ★ Low dilution leading to no hardness drop even on nickel steels.
- ★ Seamless steel tube construction for better arc characteristics.
- ★ No flux dropping in the weld pool during welding.
- ★ Complete electrode deposition without electrode overheating.
- ★ Good control of weld pool during welding.
- ★ Minimal fumes, gases. Easy strike and restrike.

RECOMMENDATIONS :

A tubular product, with rich complex carbide rich deposits resists high temperature grinding abrasion along with erosion. The buildup can be done with ease with these alloys. Highly recommended for parts subjected to grinding abrasion combined with high heat and erosion. Temperature resistance up to 900°C. Complete electrode deposition is possible without the electrode getting red hot and leading to wastages. The productivity can be the best with these electrodes. Low temperature welding with good density due to tubular design.

PROCEDURE :

Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Pre heat heavy sections to about 200°C to 250°C. In Mn steels use a base layer of Super Stanhard NA75 & do not preheat. In carbon steels, If the build up is high it is recommended to use Super Stanalloy CN54 as a cushion layers for best performances. Use stringer beads or 2X weaving beads holding a short arc. The deposits can be deposited with out the danger of cracking. The stress relieving checks are hair line showing the tough matrix structure. In case of Cast irons, a base layer of Super Stanalloy FN 65 is recommended for best bonding. Remove slag by chipping.

RECOMMENDED AMPERAGES :

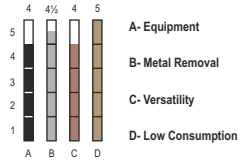
SIZE(mm)	RANGE
8.00	150-180
6.00	120-150

HARDNESS :

60-65 HRc

METAL PREPARATION

I



SUPER STAN GOUGE AC/DC-

TYPICAL APPLICATIONS :

Gouging and chamfering, cast irons and other ferrous metals. Removal of studs, bolts, nuts and rivets from the structures

OUTSTANDING FEATURES :

- ★ High arc force leading to easy gouging.
- ★ White smoke leading to easy crack spotting while gouging.
- ★ Delayed arcing for preplacement of electrode.
- ★ Superb U groove preparation.
- ★ Minimal cleaning after groove preparation.
- ★ Fast metal removal and low electrode consumption.

RECOMMENDATIONS :

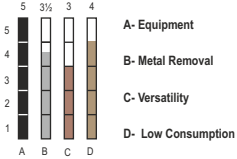
A heavy coated electrode, ideally designed for groove preparation and metal removal. The electrode produces high arc force which has exothermic properties to melt and throw away the gouged metal. The whitish smoke facilitates the welder to spot the crack easily during welding. Also the delayed arcing of the electrode allows the welder to correctly place the electrode before gouging. The base metals required only chipping or minimal cleaning after gouging. The consumption of the electrode is very low facilitating higher productivity and low consumption.

PROCEDURE :

Insert Super Stan Gouge In the normal electrode holder, making the electrode straight to the line of the holder. Point electrode in the direction of travel, at an angle not more than 30° with the plane of the work. Strike arc and push the electrode with a sawing motion to prepare a U groove. Utilising the heat and force of the highly concentrated arc, push the molten metal ahead and away. If deeper gouging is required repeat the procedure.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
5.00	300-350
4.00	200-250
3.15	150-200



SUPER STAN CUT AC/DC-

TYPICAL APPLICATIONS :

Piercing, cutting of stainless steels and cast irong base metals. Cleaning castings of runners and risers, remover flash etc.,

OUTSTANDING FEATURES :

- ★ High arc force leading to easy cutting.
- ★ No electrode overheating til the end.
- ★ Exothermic coating and highly concentrated arc.
- ★ Versatile – can be used for any metal.

RECOMMENDATIONS :

For highest speed, all position cutting and piercing of all metals using Standard electric arc equipment. Also for chamfering, gouging, cleaning out defects, burning rivets, bevelling metal prior to welding. Ideal for cutting and piercing mild carbon steel, stainless steel, cast iron, malleable iron, nickel and nickel alloys, aluminium, copper, bronze. No special skill, supplementary equipment or oxygen tanks are required. Slow burn-off rate leaves little residue, requiring comparably less finishing. Electrode does not overheat, can withstand high amperage.

PROCEDURE :

Mark or scribe line where cut is desired. On DC, use straight polarity. No special holder or compressed air needed. When applying Super Stan Cut electrode, use both the arc-blow, caused by the exothermic coating, plus pressure with the hand. When arc is struck, push and pull, holding electrode at a 45° angle and using a sawing motion to cut. The closer the arc, the faster, cleaner, cooler the cut. For piercing holes, hold electrode vertically, and push in and out.

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
5.00	300-350
4.00	200-250
3.15	150-200

DIE AND MOULD REPAIR ALLOYS

J

SUPER STANHARD DF 86 AC/DC+

TYPICAL APPLICATIONS :

Specially crafted alloy for forging and pressing die build ups.

OUTSTANDING FEATURES :

- ★ Cobalt Fortified alloy for highest performance.
- ★ Deposits can take ultimate impact and pressure.
- ★ Best compatibility with high alloys and die steels.
- ★ Crack free buildups and no galling/ spalling.
- ★ Excellent creep resistance & high toughness.
- ★ Excellent machinability facilitating die repairs.

RECOMMENDATIONS :

Alloy designed for buildup and repairs of hot working tools forging dies and press dies. The deposits work harden and the retains its edge without deformation. Highly compatible to Die steels and high alloyed steels. The deposits are fortied with Moly, vanadium and cobalt for best performance in its class.

PROCEDURE :

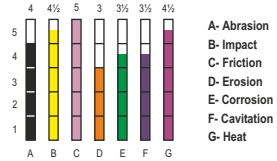
Remove fatigued material of the die using Super Stan Gouge. Preheat the dies to 300-350°C before deposition. Maintain the interpass temperature and slow cool the job. Hold the electrode 70-90° from normal, use short arc and deposit sringer beads without weaving. Slow cooling & peening of the deposits are mandatory for die steel and high alloy steels. For best results use Super Stanalloy DS 34 in the base for buildups

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
5.00	200-240
4.00	140-180
3.15	90-130

HARDNESS :

34 - 39 HRc



SUPER STANHARD HT 87 AC/DC+

TYPICAL APPLICATIONS :

Composite high steel steel dies,punches, trimming dies, shears, piercing dies, bar cutters & coke cutters

OUTSTANDING FEATURES :

- ★ Heat treatable deposits.
- ★ High speed steel type overlays with ultimate frictional resistance.
- ★ Excellent edge retention properties even at elevated temperature.

RECOMMENDATIONS :

Superb alloy which retains hardness at high temperatures combined with very low coefficient of friction. The deposits retain with edge inspite of high friction and abrasion due to the high alloyed electrode. Excellent for knife edges and machine tool parts subject to heavy frictional wear. Ideal for building composite blanking or punching dies.

PROCEDURE :

Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Pre Heat die steel and high alloys to 350°-400°C. Use stringer beads deposition and also peen the deposits to relieve stresses. Chip slag in between passes and also maintain the temperature in the base metal while depositing on die steels & high carbon/ alloyed steels. Post heating will help in better performance. Use Super Stanalloy DS 34 as a cushion layers for best results

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
4.00	130-160
3.15	90-130
2.15	60-90

HARDNESS

47-50 HRc

SUPER STANHARD PD 88 AC/DC+

TYPICAL APPLICATIONS :

Ideal alloy specially designed for press forging dies of die steel or alloy steels.

OUTSTANDING FEATURES :

- ★ Suited best for both Hot and Cold working dies.
- ★ Excellent frictional wear properties.
- ★ Self releasing slag.
- ★ Highly alloyed electrode for the said application.

RECOMMENDATIONS :

Specially designed electrode with best balanced alloy combination. Martensitic weld deposit for extra tough hot and cold work press forging application. The alloys can be welded without any preheating. The deposits exhibit good frictional resistance properties particularly for the press forging dies, both at cold and hot working conditions. The Chrome- Nickel- Moly- vanadium combination gives ideal protection for extra touch and cold work tooling dies.

PROCEDURE :

Clean weld area. Vee out cracks with Super Stan Gouge and also gouge out the fatigued and worn damaged metal. Pre Heat die steel and high alloys to 350°-400°C. Use stringer beads deposition and also peen the deposits to relieve stresses. Chip slag in between passes and also maintain the temperature in the base metal while depositing on die steels & high carbon/ alloyed steels. Post heating will help in better performance. Use Super Stanalloy DS 34 as a cushion layers for best results

RECOMMENDED AMPERAGES :

SIZE(mm)	RANGE
5.00	200-240
4.00	140-180
3.15	90-130

HARDNESS

50-55 HRc

“MAINTENANCE COATINGS”

K

2050 POLYHYB

Alternative to 1K Primer + Enamel

TYPICAL APPLICATIONS

Equipments, motors, transformers, vessels, general piping & structures.

- ★ Pre-engineered steel structures
- ★ Railings
- ★ Machinery
- ★ Structural steel
- ★ Storage tanks
- ★ Piping
- ★ TV & microwave towers

OUTSTANDING FEATURES

A superior alternative to conventional 1K primer – synthetic alkyd enamel paint systems – twice the life warrantied.

- ★ Hybrid co-polymer cross linked.
- ★ Self priming, ready to use.
- ★ Fast drying. Saves application time.

RECOMMENDATIONS:

For use over prepared substrates both ferrous & non -metal (cement, concrete, wood...) in industrial environments, commercial buildings.... wherever today 1K primer + synthetic alkyd enamel system is in use & higher life, superior protection are desired.

SURFACE PREPARATION	ST-2/ST-3

RECOMMENDED CLIMATIC CONDITIONS

Relative Humidity	Not more than 85%
Air temperature	≥10°C & ≤45°C
Substrate temp.	≥10°C & ≤40°C
Recommended Diluent	205 Polyhyb Diluent

RECOMMENDED DILUTION

For Brush application	0-05%
For spray application	10-15%

RECOMMENDED APPLICATION VISCOSITY & OTHER PARAMETER

For brush	Ready to use
For spray(HVLP/Cup Gun)	20-24 sec B-4 Cup
Minimum Drying time between two coat	25-30 Min.
Recommended DFT per coat	25-30 micron.
Approx Working Coverage (Brush)	125ml /Sqmtr/Coat

STRENGTH

Corrosion Resistance	500 Hrs (salt spray ASTM B-117)

APPLICATION PROCEDURE

Mix the paint in container by using spatula /pneumatic mixer for 5- 10 minutes or untill uniform consistency is achieved

↓

Add diluent as per requirement and mix for 2-3 minutes

↓

Apply first coat on prepared surface with suitable mode of application.

↓

Provide 25-35min drying time (MINIMUM)

↓

Apply second coat .

↓

Provide 25-35min drying time

↓

Check the final finish…if required apply touch-up coat.

751 STANFLOOR-REPAIR (QUICK SET)

Quick concrete repairing system

TYPICAL APPLICATIONS

- ★ Wall & floor, machine grouting repairs
- ★ Repair damages in concrete structures

OUTSTANDING FEATURES

- ★ No-shrinkage during and after curing.
- ★ Quick set-suitable for fast repairing works.
- ★ Chemical resistant.
- ★ Can be applied on vertical surfaces with adjustment of filler loading at site.

RECOMMENDATIONS:

A fast drying 100% solid, three component epoxy resin based system, loaded with inert fillers. Enables quick repairs of holes and cracks in concrete floors, ramps, walls and also in grouting applications.

SURFACE PREPARATION	Grooving/ST-2 Concrete Should be sound and free from moisture, Acid, alkali, Salt, algae, moss and Oil

RECOMMENDED CLIMATIC CONDITIONS

Relative Humidity	Not more than 95%
Air temperature	$\geq$10°C & $\leq$45°C
Substrate temp.	$\geq$10°C & $\leq$40°C

MIXING RATIO (PART-A: PART-B: PART-C)

By Volume	NA
By Weight	18 : 5 : 77
Recommended Diluent	NA

RECOMMENDED APPLICATION VISCOSITY & OTHER PARAMETER

For trowel	Ready to use
Drying time	30-45 mint @30^{o}C
Approx Working Coverage	4 inch^{3}/kg
Maximum Thickness per coat	Upto 10 inch

STRENGTH

Compressive Strength	15000 PSI

APPLICATION PROCEDURE

Mix the Part-A in container by using spatula /pneumatic mixer
for 5-10 minutes or un till uniform consistency is achieved

↓

Take required quantity of Part-A in recommended proportion in clean container

↓

Add Part-C and mix for 3-5 min. or un till uniform consistency not achieved

↓

Add Part-B in Part-A& Part-C mixture in recommended proportion and mix thoroughly

↓

Apply on prepared surface with suitable mode of application

↓

Provide 30-45 min. drying time (minimum)

754 STANGARD SEALER

TYPICAL APPLICATIONS

Oil soaked flooring /machine bases (Use screed additionally, for load bearing)

- ★ Basement floors& roofs
- ★ Marine & Offshore cooling towers/ platforms.
- ★ Pulp and paper mills
- ★ Sugar industries
- ★ Chemical processing plants
- ★ Hydropower facilities.

OUTSTANDING FEATURES

- ★ Water & oil tolerant, Protects concrete floors & machine foundations, against damage by oil soaking, water saturation, acidic sugarcane juice spillage...
- ★ Prevents moisture and vapor migration. Protects re-bar.

RECOMMENDATIONS:

- ★ Ideal solution for Sugar cane juice, oil handling & storage, Compressor / DG room floor area's /machinery foundations... as a concrete sealer that will make the floors & walls impermeable for corrosive sugar cane juice, oil & water penetration.
- ★ Ready-to-use, non-toxic, penetrating, permanent water & oil tolerant concrete sealer. Specifically formulated, and composed of organic, chemically reactive, complex catalyzed compounds, which allow full penetration with superior surface tolerance & application on damp /oily substrates. Enhances all of the natural characteristics of concrete and seals the capillary voids to practically zero. Suitable for all above/below grade, vertical and horizontal concrete surfaces.

SURFACE PREPARATION Solvent cleaning/ST-3/ST-2 Concrete must be sound and free from Acid, Salt, algae, moss and other non sticky materials. For oily surfaces make grooves

RECOMMENDED CLIMATIC CONDITIONS

Relative Humidity	NA
Air temperature	≥10°C & ≤55°C
Substrate temp.	≥10°C & ≤50°C

RECOMMENDED DILUTION — STANGARD-5000

For Brush application	0-05%
For Air less spray application	10-15%

RECOMMENDED APPLICATION VISCOSITY & OTHER PARAMETER

For brush	Ready to use
For spray(HVLP/Cup Gun)	18-22 sec B-4 Cup.

Minimum drying time between two coats 25-35 Hrs.

Recommended DFT per coat	40-50 micron.
Approx Working Coverage (brush)	0.125 kg /Sqmtr/Coat

APPLICATION PROCEDURE

Mix the 754 in container by using spatula /pneumatic mixer for 5-10 minutes or untill uniform consistency is achieved

↓

Add diluent as per requirement and mix for 2-3 minutes

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Apply first coat on prepared surface with suitable mode of application

↓

Provide 25-35min drying time (minimum), Apply second coat

↓

Provide 8-12 Hrs. drying time

↓

If top coat application is required…..Rough the 754 Stangard sealer dry film with 220No. Emery paper

↓

Clean with dry air or dry cloth. Apply 727 Stangard PLPU top coat as per recommendation

FIREX EC 43

Water immersion /weather resistant intumescent fire protection coating, for combustible electrical & communication cables

TYPICAL APPLICATIONS

Long runs of unprotected, PVC or plastic rubber sheathed combustible cables, usually supported by cable trays, are prone to rapid fire spread /generation of toxic smoke /acid gases and can thus cause excessive damage to men & materials.

OUTSTANDING FEATURES

- ★ Protection of cables against direct fire exposure /fire survivability - circuit integrity meeting the requirement of IEC 60331-11
- ★ Prevention of fire propagation on cables IEC 60332-3-21, FM 3971
- ★ Prevening toxic smoke generation /Outgassing NES-713 & NCD-1409

RECOMMENDATIONS:

Firex EC 43 is a high solid, water-based intumescent coating which is designed to prevent flame spread along the jacketing of electrical (or other) cables and to provide a thermal barrier for protection against heat damage caused by external fires /internal short circuiting .

SURFACE PREPARATION	Water/dry cloth cleaning Surface must be free from Acid, Salt, algae, moss , oil and other non sticky materials.

RECOMMENDED CLIMATIC CONDITIONS

Relative Humidity	Not more than 85%
Air temperature	$\geq$10°C & $\leq$55°C
Substrate temp.	$\geq$10°C & $\leq$40°C
Recommended Diluent	Drinking water/ DM water

RECOMMENDED DILUTION

For Brush application	0-5%
For Air less spray application	5- 20%

RECOMMENDED APPLICATION VISCOSITY & OTHER PARAMETER

For brush	Ready to use
For spray(Air less)	35-40 sec with B-4 cup
Minimum Drying time between two coat	30-50 Min @30°C

RECOMMENDED DFT PER COAT

For Survivability-circuit integrity	>2.0mm
For Fire propagation safety	>1.6mm.
Recommended DFT per coat	0.25-0.3mm (for brush)

STRENGTH

Only cable fire suppresion coating capable of providing, both long Term fire propagation prevention + long term fire survivability -Circuit integrity, against hydrocarbon fires >(1100^{o}C) together with Water immersion /weathering resistance.

Approx Working Coverage (Brush) 3.5 kg/Sqmtr@1.6 mm DFT

APPLICATION PROCEDURE

Mix the Firex EC-43 in container by using spatula /pneumatic mixer for 5-10 min or un till uniform consistency is achieved

↓

Apply first coat on Clean cable surface with soft hair brush application (one direction strokes)

↓

Provide 30-50min drying time (minimum) Apply second coat . (as above)

↓

Provide 30-50min drying time (minimum) Apply third coat . (as above)

↓

Provide 30-50min drying time (minimum) Apply fourth coat . (as above)

↓

Provide 24-36 Hrs. drying time(minimum) Apply Fifth coat. (as above)

↓

Check the final finish and DFT… if required apply touch-up coat. Apply Sixth coat. (as above)

1190 CERAMIC COATING

Pump Protection & Efficiency Enhancement.

TYPICAL APPLICATIONS

- ★ Centrifugal, turbine & vacuum pumps.
- ★ To protect new and old equipment exposed to erosion and corrosion,
- ★ Protect pump casings, impeller blades, fan blades.
- ★ Heat exchangers tube sheets and other water circulation equipments.

OUTSTANDING FEATURES

- ★ Very high, abrasion, erosion & corrosion resistance.
- ★ Nano fillers provide abrasion resistant smooth surface to liquid. “Roll round” effect.
- ★ Silicon-steel alloy provides excellent strength to the coating matrix.

RECOMMENDATIONS:

Abrasion /erosion /corrosion attacked surfaces are re-built using 1170 Stangard Ceramic-Metal Repair Putty and are thereafter overcoated with 1190 for best protection against erosion & corrosion, coupled with protection against impingement, entrainment, caviation & bi-metalic corrosion.

SURFACE PREPARATION	Sanding of 1170/ Grit Blasting of metal

RECOMMENDED CLIMATIC CONDITIONS

Relative Humidity	Not more than 85%
Air temperature	$\geq$10°C & $\leq$45°C
Substrate temp.	$\geq$10°C & $\leq$40°C

MIXING RATIO (PART-A: PART-B: PART-C)

By Volume	NA
By Weight	7 : 1
Recommended diluent-	Stangard 7000

RECOMMENDED DILUTION

For Brush/Putty knife application-	0-3%

RECOMMENDED APPLICATION VISCOSITY & OTHER PARAMETER

For brush-	Ready to use
Minimum Drying time between two coat-	30 minutes
Recommended DFT per coat-	0.5mm(minimum)

STRENGTH

Abrasion resistance (loss/1000cycles /1Kg)	<20 mg	ASTM D 4060
Tensile Strength	4500 psi	ASTM D 638
Approx working coverage(Brush)-		2.2kg /Sqmtr/1mm

APPLICATION PROCEDURE

Grit blast the metal surface area with 8-40 mesh grit, or grind with a coarse wheel or abrasive disc pad, or roughening of 1170 dry film (if applied)

↓

Take required quantity of Part-A in recommended proportion on clean mixing board

↓

Add Part-B in Part-A in recommended proportion and mix thoroughly.

↓

Apply first thin coat(300-400 micron) on prepared surface with suitable mode of application

↓

Provide 30-40 min. drying time (MINIMUM) Apply Second coat with 1mm thickness on first coat with suitable mode of application

↓

Provide 3-4 Hrs. drying time(MINIMUM)

↓

Apply Suitable top coat (1195) ,if required

STANGARD 1311
INSULKOTE

High build - high breakdown voltage solvent free, dielectric flooring, meeting insulation requirements of IS 15652:2006

TYPICAL APPLICATIONS

Self Leveling, high gloss, seamless, dielectric flooring will provide reliable safety against injuries caused by electrical leakage & tracking …. easy installation, cleaning & repair, …. Provides dust – free atmosphere in panel rooms… Long lasting & durable…

OUTSTANDING FEATURES

- ★ Ultra high dielectric strength & insulation resistance.
- ★ Unique breakdown voltage (Tested ERDA, Vadodara & CPRI Bangalore).
- ★ Smooth, glossy finish.
- ★ Meets requirement of IS : 15652 : 2006

RECOMMENDATIONS:

- ★ Dielectric flooring.
- ★ High voltage insulation coating.
- ★ Transmission tower /electrical poles metal support structures guards against-animal. caused flashovers.
- ★ Bus-bars.

SURFACE PREPARATION

Sweep Blasting /ST-3/ST-2, Concrete must be sound and free from moisture, Acid, alkali, Salt, algae, moss and Oil.

RECOMMENDED CLIMATIC CONDITIONS

Relative Humidity	Not more than 85%
Air temperature	≥10°C & ≤45°C
Substrate temp.	≥10°C & ≤40°C

MIXING RATIO (PART-A: PART-B) & DILUTION

By Volume	NA
By Weight	2.0 : 1.0
Recommended dilution	
For Brush application	0-5% (Stangard 7000)

RECOMMENDED APPLICATION VISCOSITY

For brush /leveler	Ready to use

Minimum drying time between two coat 2-3 Hrs.

Recommended DFT	DFT per coat	Coverage
For 1311 Class-A	250-275 micron	0.400 kg/Sqmtr/Coat
For 1311 Class-B	450-500 micron	0.850Kg/Sqmtr/Coat
For 1311 Top coat	100-120 micron	0.250Kg/Sqmtr/Coat

STRENGTH	HIGH BREAKDOWN VOLTAGE	
1311 Class A	>34kv in air	BDV
1311 Class B	>45kv in air	BDV

APPLICATION PROCEDURE

Apply 756 Primer coat on prepared concrete surface

↓

Provide 2-3 Hrs. drying time

↓

"If Screed application required"Mix the Screed (761) components in container by using spatula /pneumatic mixer for 5-10 min or un till uniform consistency is achieved

↓

Apply screed with 1-2 mm thickness (Use spike roller on wet screed layer to release Air)

↓

Provide 6-12 hrs drying time

↓

Take required quantity of 1311Insulkote Part-A in recommended proportion in clean container

↓

Add Part-B in Part-A in recommended proportion and mix thoroughly

↓

Apply first coat on prepared surface with using leveler (250micron).
(Use spike roller on wet coating layer to release Air)

Provide 2-3 hrs. drying time (MINIMUM), Apply second coat on first coat surface with using leveler (250micron).(Use spike roller on wet coating layer to release Air)

Provide 2-3 hrs. drying time Apply third coat on second coat surface with using leveler (250micron). (Use spike roller on wet screed layer to release Air)

Provide 2-3 hrs. drying time, apply fourth coat on third coat surface with using leveler (250micron). (Use spike roller on wet screed layer to release Air)

Provide 12-14 Hours Drying Time

If top coat application is required (color coding) Rough the 1311 Insulkote dry film with 220 No. Emery paper & clean with dry air & dry cloth.

Mix Add Part-B in Part-A in recommended proportion and mix thoroughly add diluent if required (Stangard 7000)

Apply first coat on prepared surface with suitable mode of application

Check the final finish…if required apply touch-up coat

#815 STANGARD STEEL PUTTY (SPL)

Multi purpose steel alloy filled epoxy system for metal repairs.

TYPICAL APPLICATIONS

- ★ Repairs of cracks on housings and machine parts.
- ★ Valves, Flanges, Pipe Elbows, T-Pieces, Impellers, Propellers…
- ★ Tank Surfaces, Process Vessels, Gas Scrubbers…

OUTSTANDING FEATURES

- ★ Unique impact resistance.
- ★ Excellent chemical resistance to a wide range of chemicals.
- ★ Steel alloy - provides high strength to the coating matrix.
- ★ Adheres to almost any kind of surfaces Cured material may be machined e.g. Drilled Milled Ground Filed.

RECOMMENDATIONS:

Nearly all repair jobs can be done with #815 Stangard Steel Putty (SPL). For rebuilding metals damaged by abrasion-erosion-corrosion, fatigue cracks

SURFACE PREPARATION	ST-3/ Grit Blastig

RECOMMENDED CLIMATIC CONDITIONS

Relative Humidity	Not more than 85%
Air temperature	≥10°C & ≤45°C
Substrate temp.	≥10°C & ≤40°C

MIXING RATIO (PART-A: PART-B) & DILUTION

By Volume	NA
By Weight	6 : 1
Recommended diluent-	Stangard 7000
For Brush/Putty knife application-	0-3%

RECOMMENDED APPLICATION VISCOSITY & OTHER PARAMETERS

For brush-	Ready to use
Minimum Drying time between two coat-	30 min
Recommended DFT per coat-	0.8mm(minimum)
Approx working coverage(Brush)-	2.5kg /Sqmtr/1mm

STRENGTH

Cured shrinkage	0.0% minimum, 0.005% maximum
Dielectric strength	85 volts/mil ASTM D149
Temperature resistance	90°C (Wet), 200°C(Dry)

APPLICATION PROCEDURE

Grit blast surface area with 8-40 mesh grit, or grind with a coarse wheel or abrasive disc pad, to create increased surface area

↓

Take required quantity of Part-A in recommended proportion on clean mixing board

↓

Add Part-B in Part-A in recommended proportion and mix thoroughly.

↓

Apply first thin wetting coat (300-400 micron) on prepared surface with suitable mode of application

↓

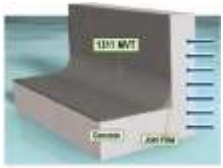
Provide 30-40 min. drying time (MINIMUM) Apply Second coat with desired thickness on first layer with suitable mode of application

↓

Note: For Extra strengthing during leakage repair, Crack bridging, metal plate joining, please inter layer 815 SPL with Glass fiber Tape

1311 STANGARD CORROKOTE (MVT)

A complete negative pressure water proofing system.



TYPICAL APPLICATIONS

- ★ Concrete roof water proofing.
- ★ concrete cooling towers.
- ★ Marine & offshore cooling towers / platforms.
- ★ Basements.
- ★ Dams & irrigation, Tunnels & Subways.
- ★ Concrete Bridges & Tanks.

OUTSTANDING FEATURES

- ★ High strength "breathable" - negative pressure water proofing solution.
- ★ Releases osmotic pressure and provides long term barrier protection & edge coverage.
- ★ One coating for all types of concrete surface protection.

RECOMMENDATIONS

- ★ Useable both externally (with suitable top coat) & in immersion service.
- ★ Performs as a moisture, damp & wet tolerant coating… can be applied on manually prepared damp surfaces… excellent adhesion on such surfaces.
- ★ Protects concrete against seepage /water saturation.

SURFACE PREPARATION	Sweep blasting /roughening. Concrete surface must be sound & free from moisture, acid, alkali, salt, algae, moss & oil.

RECOMMENDED CLIMATIC CONDITIONS

Relative Humidity	NA
Air temperature	$\geq$10°C & $\leq$55°C
Substrate temp.	$\geq$10°C & $\leq$50°C

MIXING RATIO (PART-A: PART-B) & DILUTION

By Volume	NA
By Weight	5.0 : 1.0
Recommended diluent-	Drinking Water/ DM Water
For Brush application-	0-05%
For Air less spray application-	10-15%

RECOMMENDED APPLICATION VISCOSITY & OTHER PARAMETERS

For brush	Ready to use
Minimum Drying time between two coat-	5-6 Hrs.
Recommended DFT per coat-	125-150 micron.
Approx working coverage(Brush)-	0.60kg /Sqmtr/Coat

STRENGTH

Flexural strength (ASTM D790)	>5800 psi
Compressive strength (ASTM D695)	>18500 psi
Pull off adhesion on concrete (ASTM D454)	>650 psi (concrete failure)

APPLICATION PROCEDURE

Mix the paint in container by using spatula/pneumatic mixer for 5-10 min or untill uniform consistency is achieved.

↓

Take required quantity of Part-A in recommended proportion in clean container

↓

Add Water(if required) and mix for 2-3 min.

↓

Add Part-B in Part-A in recommended proportion and mix thoroughly

↓

Apply first thin coat on prepared surface with suitable mode of application

↓

Provide 30-45 min. drying time

↓

On floor / Horizontal Surface	On wall / Vertical Surface
Make Screed by adding 1.5-2 times 1100 Stanfloor aggregates and apply on Primed floor (minimum 2mm DFT)	Apply first coat on primed surface with suitable mode of application.
↓	↓
Provide 1 hrs drying time, Apply thick coat on screed surface with suitable mode of application	Provide 3-4 hrs drying time, Apply second coat on first dry coat surface with suitable mode of application
↓	↓
Provide 24-48 hrs drying time	Provide 24-48 hrs drying time

If out door application Rough the 1311 MVT dry film with 220No. Emery paper

Clean with dry air or dry cloth. Apply Suitable top coat (724WB / 727PLPU) as per recommendation

Take required quantity of Part-A in recommended proportion in clean container

Add Part-B in Part-A in recommended proportion and mix thoroughly

Add diluent as per requirement and mix for 2-3 min

Apply first coat on prepared surface with suitable mode of application.
Check the final finish…if required apply touch-up coat

“MAINTENANCE CLEANERS”

L

Z111 AC-500

Non fuming, Rust remover.

Z 111 AC-500 removes rust, scale and light oil from steel. Apply by dip tank immersion, circulation, coarse spray, brush or manually. Use at room temperature or heat up to 150ºF.

TYPICAL APPLICATIONS

★ As rust cleaner /remover from ferrous metal.

OUTSTANDING FEATURES

★ Halogen free(F, Cl, Br, I) .
★ Superior cleaning while removing oxidized soil.
★ Self-foaming.
★ Rust Inhibition for short term protection post de-rusting.
★ Concentrated – can be diluted for economical use.
★ Non fuming: unique mild odor despite being a strong phosphoric acid blend.
★ Inhibited: uniquely non corrosive to users & metals despite ultra strong acid cleaning power user friendly.
★ Excellent flash re-rust prevention.
★ Gel grade available for brush application.

APPLICATION PROCEDURE

Do not mix with chlorine containing products or bleach. Mix only with water. Do not use on aluminum, tin or zinc-plated surfaces. This may result in pitting or surface deterioration.

↓

Transfer contents of Z111 AC-500 in a clean solution tank

↓

Immerse the component into container

↓

Provide 25-40 min reaction time

↓

Remove the component from the solution tank

↓

Rinse the component by water jet

Z109 NEUGENIC 4175

Low odor, no flash point, biodegradable semi aqueous cleaner

Z 109 Neugenic® 4175 is safe on all metals, glass concrete. Test before using on rubber, plastic, vinyl and painted surfaces. Use with solvent resistant equipment.

TYPICAL APPLICATIONS

Recommended for removing oils, greases, tars, asphalts, cardium compounds adhesives, resilient tile mastic, solid animal and vegetable fats and oils from most surfaces. Test before using on rubber, plastics, vinyl tiles or similar surfaces.

OUTSTANDING FEATURES

- ★ Non chlorinated, biodegradable, non terpene & non petroleum heavy duty semi aqueous cleaner. Contains no acids, caustics or phosphate
- ★ PH: 7-8 (10% solution in water).
- ★ Aluminium safe.

APPLICATION PROCEDURE

- ★ For best result use undiluted or dilute with up to 25 - 30 parts of water (Agitation necessary either by hand/ compossed air if to be used water diluted).
- ★ Can be used via coarse spray, wipe or cold dip tank. Safe on all metals. Use with solvent resistant equipment.
- ★ Mix only with water. (Can also be diluted with petroleum solvent like kerosene for fast penetrative cleaning)

Z118 EQC-10

Tamed acid cleaner.

Z 118 is a liquid acid scale remover that is formulated for fast, effective removal of hardness scale, rust and other mineral deposits from heat exchanger, condensers, cooling jackets, process vessels, pipings,valves and other equipment subject to cale deposits.

TYPICAL APPLICATIONS

- ★ Safe alternative to hydrochloric acid.
- ★ Nonfuming.
- ★ Easy cleaning solution make-up .
- ★ Nonflammable.
- ★ Cleaning of complex equipment without disassembling.
- ★ Retards rate of acid attack on ferrous metals with efficient corrosion inhibitors.

APPLICATION PROCEDURE

Boiler System Descaling:

1. Empty unit. Wash loose accumulations out with warer.
2. Fill the unit approximately 2 / 3 full with water.
3. ADD # Z 118 EQC – 10 to the unit. Addition should range rom 5 % to 20 % of system volume.
4. Fill the unit to normal operating levels with water and add 1 – 2 pints of defoamer.
5. Allow to soak for 4 – 8 hours depending on scale present in the system. To spend up the cleaning process; The acid solution can be heated up to 1400 F Maximum. Beware of high foaming tendency when heating.
6. Drain and rinse with water repeatedly.
7. Repeat acid soak if necessary.
8. Neutralize system by Adding 2 –3 OZ. OF BSC – 30 per gallon of system water.Drain and return to service.

Cooling System Descaling:

1. Empty tower sump and wash loose accumulations out with water.
2. ADD # Z 118 EQC – 10 to the cooling system while the circulations pump is running to develop a system PH of 4.5 to 5.5.
3. Circulate for 3 to 5 days,adding acid as required to maintain system PH.
4. Drain the sump and flush out loose accumulations.
5. ADD ½ - 1 OZ. OF BSC – 30 per gallon of system water to establish and Alkaline PH.
6. Return to service and treat water according to RMC recommendations. Aluminum, Zinc and Galvanised steel will be attacked by exposure to concentrated # Z118 EQC – 10 solutions.

Z136 SUPER ELECTROSAFE

Super Electrosafe is a high dielectric strength ready-to-use solvent, designed to replace 1,1,1,-T, CFC's and chlorinated solvents.

TYPICAL APPLICATIONS

Cleaning electrical and electronic systems, in dip tank, wipe-off or by coarse spray.

Super Electrosafe is recommended for cleaning electric motors and other electrical equipment, and for the rapid removal of grease, oil, solvent base inks and wax.

OUTSTANDING FEATURES

- ★ Non-chlorinated, odorless, high flash point solvent.
- ★ 100% volatile.
- ★ Plastic safe.
- ★ High KB value (27 KB).
- ★ High Di-electric strength (38KV) .

APPLICATION PROCEDURE

Ready to use concentrate. Do not dilute.

High dielectric strength for electrical and electronic cleaning.

Recommended for general degreasing in dip tank, wipe on/wipe off, or by coarse spray. For more rapid drying time, apply forced air with a blow-off nozzle which makes forced air drying even more efficient.

Do not mix or rinse with water.

Z113 BIOGENIC SE 372

Biodegradable Concentrated Heavy Duty Grease And Carbon Remover

Before

After

TYPICAL APPLICATIONS

Biogenic SE 372 is a modern aluminum safe (undiluted) cleaner, engineered to remove heavy grease and carbon from most metals. Recommended to clean engines, transmissions, carburetors and heavy equipment.

OUTSTANDING FEATURES

- ★ Highly concentrated - maximum effectiveness removing heaviest soils.
- ★ Aluminum safe (undiluted) - achieves cleaning without hazardous caustics.
- ★ Biodegradable and no ozone depleting solvents - environmetally sound.
- ★ Oil splitting - permits skimming of hazardous waste and inexpensive disposal of cleaning solution (when diluted).
- ★ Replaces methylene chloride - cresylic acid based mixtures.

APPLICATION PROCEDURE

For use with dip tanks, circulation systems, coarse spray or flow-on applications. Apply undiluted, or diluted with up to 20 parts water, at room temperature or heated up to 110ºF in ventilated areas. Higher temperatures will cause loss of active solvent. Always follow with a water rinse.

Biogenic SE 372 may be used undiluted or may be diluted with up to 20 parts of water, or more depending on nature and degree of soil. Recommend solution temperature not exceed 110ºF, since solvent components will volatilize at higher temperatures.

#Z 101 (A) ALPHA 5

Heavy Duty Rust Inhibited Aqueous Cleaner

Z 101(A) Alpha 5 is a rust inhibited cleaner, neutral in use dilution, safe on all washable surfaces, ideal for degreasing ferrous surfaces.

TYPICAL APPLICATIONS

Auto component, Metal Tubes & articles etc.

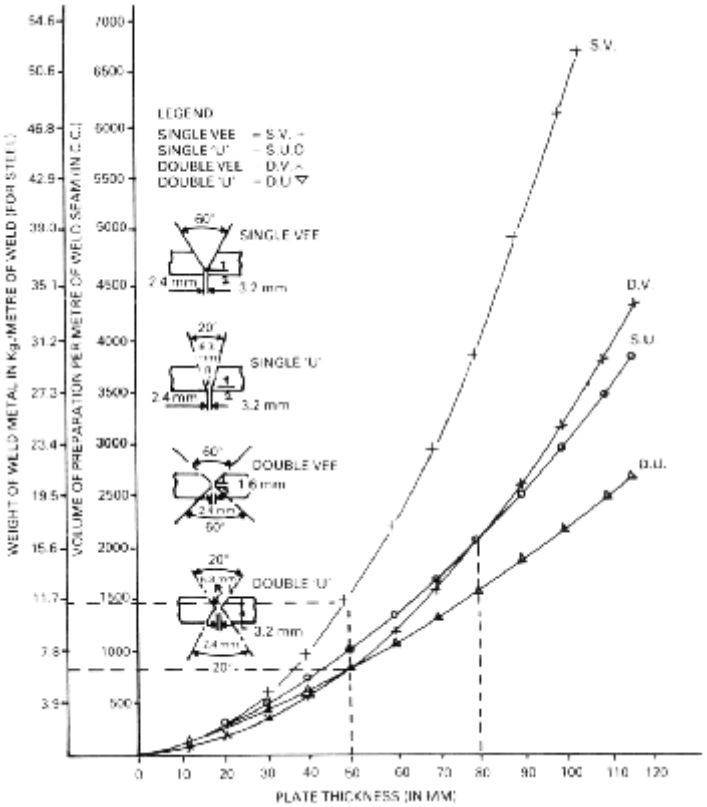
OUTSTANDING FEATURES

- ★ Having rust inhibition mechanism- leaves dry transparent thin film and provide short. term rust prevention for ferrous surfaces.
- ★ Highly dilute-able (1:30 to 1:100) - low use cost.
- ★ No flash point – User safe.
- ★ Environmetally sound.

APPLICATIONS PROCEDURE

1. #Z 101(A) Alpha 5 is a rust inhibited cleaner, neutral in use dilution, safe on all washable surfaces, ideal for degreasing ferrous surfaces.
2. Can be applied with spray, dip-tank, and by manual mop/brush/scrubber.
3. To remove light soils, dilute one part with 100 parts of water. For medium soils, dilute one part with 30 parts of water. For heavy soils, dilute one part with 5 parts of water. Mix only with water.

GRAPH OF THEORETICAL VOLUMES OF WELD METAL FOR VARYING PREPARATIONS AGAINST PLATE THICKNESS

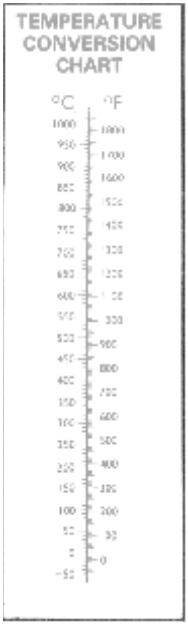


A one metre long weld on a 50 mm plate needs 800 CC of weld metal with double 'V'. Preparation and 1450 CC of weld metal with a 600 single Vee. In case the weld metal is steel, the weight of weld metal required will be 5.95 kg and 11.65 kg respectively. For non ferrous metals, Volume has to be multiplied by appropriate density to get the weight.

Useful Welding Data

MELTING POINTS OF METALS

Metal or Alloy	Melting Point, °C
Aluminium, pure	659
Brass and Eronze	870–900
Copper	1083
Iron, Cast & Mallelable	1250
Lead, Pure	327 5
Magnesium	651
Monel	1310
Nickel	1452
Silver, Pure	960 5
Steel, Hi-Carbon (0.40% to 0.70% Carbon)	1400
Steel, Medium Carbon (0.15% to 0.40% Carbon)	1450
Steel, Low Carbon (less than 0.15%)	1500
Stainless Steel, 18% Chromium, 8% Nickel	1425
Titanium	1800
Tungsten	3370
Zinc, Cast or Rolled	419



TEMPERATURES

Temperatures expressed as DEGREES CELSIUS:

°F	°C
425	219
1050	566
1090	588
1125	607
1130	610
1400	760
1600	871
2000	1093

TENSILE STRENGTH:

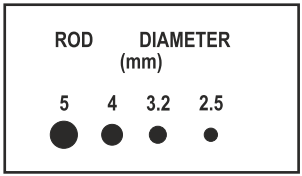
Pound/Square Inch converted to KILOGRAMS FORCE/ SQUARE MILLIMETRE

psi	kgf/mm^2
30,000	21.1
33,000	23.2
34,000	24.0
35,000	24.6
50,000	35.2
53,000	37.2
55,000	38.6
60,000	42.2
62,000	43.6
65,000	45.7
70,000	50.0
80,000	56.2
85,000	60.0
90,000	63.3
95,000	66.8
100,000	70.3
110,000	77.3
120,000	84.3

FRACTIONAL INCHES (Wire Diameters):

The metric equivalent expressed in MILLIMETRE

Inch Fraction	Millimetre
3/64	1.2
1/16	1.6
5/64	2.0
3/32	2.4
1/8	3.2
5/32	4.0
3/16	4.8
1/4	6.4

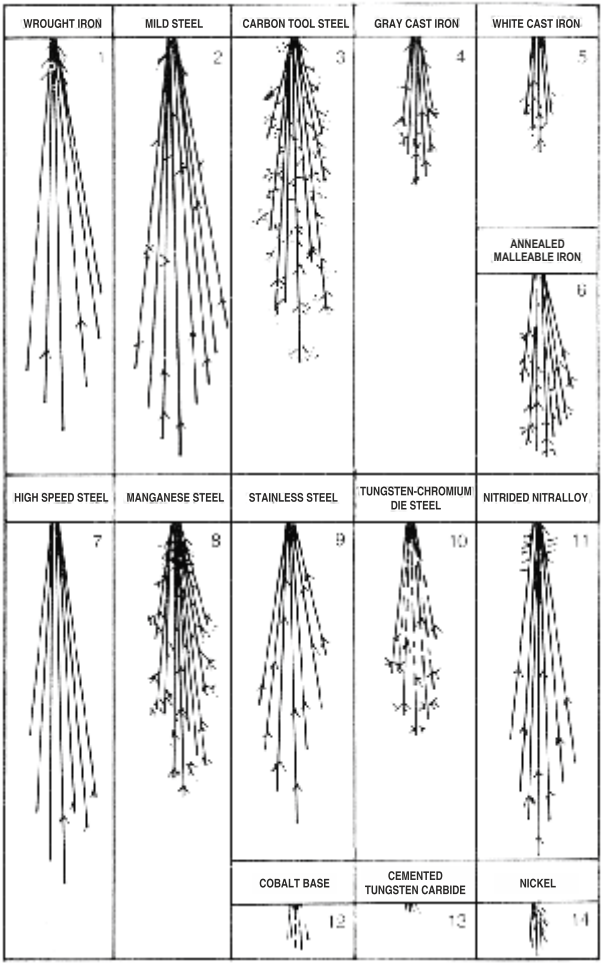


GAS PRESSURES:

Pounds/Square Inch converted to ATMOSPHERES:

psi	bars
8 - 10	.50 - .63
4 - 5	.24 - .31
11 - 13	.72 - .83

Spark tests for metals



METALS PREHEATING CHART

METAL GROUP	METAL DESIGNATION	APPROXIMATE PERCENT CARBON	RECOMMENDED PREHEAT
PLAIN CARBON STEELS	PLAIN CARBON STEEL	BELOW .20	UP TO 100°C
	PLAIN CARBON STEEL	.20-.30	100°C - 150°C
	PLAIN CARBON STEEL	.30-.45	150°C - 250°C
	PLAIN CARBON STEEL	.45-.80	250°C - 400°C
CARBON MOLY STEELS	CARBON MOLY STEEL	.10-.20	150°C - 250°C
	CARBON MOLY STEEL	.20-.30	200°C - 300°C
	CARBON MOLY STEEL	.30-.35	250°C - 400°C
MANAGNESE STEELS	SILICON STRUCTURAL STEEL	.35	150°C - 250°C
	MEDIUM MANGANESE STEEL	.20-.25	150°C - 250°C
	SAE T 1330 STEEL	.30	200°C - 300°C
	SAE T 1340 STEEL	.40	250°C - 400°C
	SAE T 1350 STEEL	.50	300°C - 450°C
	12% MANGANESE STEEL	1.25	USUALLY NOT REQUIRED
HIGH TENSILE STEELS (SEE ALSO STEELS BELOW)	MANGANESE MOLY STEEL1	.20	150°C - 250°C
	JALTEN STEEL	.35 MAX	200°C - 300°C
	MANTEN STEEL	.30 MAX.	200°C - 300°C
	ARMCO HIGH TENSILE STEEL	.12 MAX.	UP TO 100°C
	DOUBLE STRENGTH # 1 STEEL	.12 MAX.	150°C - 300°C
	DOUBLE STRENGTH # 1A STEEL	.30 MAX.	200°C - 350°C
	MAYARI R STEEL	.12 MAX.	UP TO 150°C
	OTISCOLOY STEEL	.12 MAX.	100°C - 200°C
	NAX HIGH TENSILE STEEL	.15-.25	UP TO 150°C
	CROMANSIL STEEL	.14 MAX.	150°C - 200°C
	A.W. DYN-EL STEEL	.11-.14	UP TO -150°C
	CORTEN STEEL	.12 MAX.	100°C - 200°C
	CHROME COPPER NICKEL STEEL	.12 MAX.	100°C - 200°C
	CHROME MANGANESE STEEL	.40	200°C-300°C
	YOLOY STEEL	.05-.35	100°C - 300°C
	HI-STEEL	.12 MAX.	100°C - 250°C
NICKEL STEELS	SAE 2015 STEEL	.10-.20	UP TO - 150°C
	SAE 2115 STEEL	.10-.20	100°C - 150°C
	21/2 # NICKEL STEEL	.10-.20.	100°C - 200°C
	SAE 2315 STEEL	.15	100°C - 250°C
	SAE 2320 STEEL	.20	100°C - 250°C
	SAE 2330 STEEL	.30	150°C-300°C
	SAE 2340 STEEL	.40	200°C-350°C

METALS PREHEATING CHART

METAL GROUP	METAL DESIGNATION	APPROXIMATE PERCENT CARBON	RECOMMENDED PREHEAT
MEDIUM NICKEL CHROMIUM STEELS	SAE 3115 STEEL	.15	100°C - 200°C
	SAE 3125 STEEL	.25	150°C - 250°C
	SAE 3130 STEEL	.30	200°C - 350°C
	SAE 3140 STEEL	.40	250°C - 400°C
	SAE 3150 STEEL	.50	300°C - 450°C
	SAE 3215 STEEL	.15	150°C - 250°C
	SAE 3230 STEEL	.30	250°C - 350°C
	SAE 3240 STEEL	.40	350°C - 500°C
	SAE 3250 STEEL	.50	450°C - 550°C
	SAE 3315 STEEL	.15	250°C - 350°C
	SAE 3325 STEEL	.25	450°C - 550°C
	SAE 3435 STEEL	.35	450°C - 550°C
	SAE 3450 STEEL	.50	450°C - 550°C
MOLY BEARING CHROMIUM AND CHROMIUM NICKEL STEELS	SAE 4140 STEEL	.40	300°C - 400°C
	SAE 4340 STEEL	.40	350°C - 450°C
	SAE 4615 STEEL	.15	200°C - 300°C
	SAE 4630 STEEL	.30	250°C - 350°C
	SAE 4640 STEEL	.40	300°C - 400°C
	SAE 4820 STEEL	.20	300°C - 400°C
LOW CHROME MOLY STEELS	2% Cr. ½% Mo. STEEL	UP TO .15	200°C - 300°C
	2% Cr. ½% Mo. STEEL	.15-.25	250°C - 400°C
	2% Cr. 1% Mo. STEEL	UP to .15	250°C - 400°C
	2% Cr. 1% Mo. STEEL	.15-.25	300°C - 400°C
MEDIUM CHROME MOLY STEELS	5% Cr. ½% Mo. STEEL	UP TO .15	250°C - 400°C
	5% Cr. ½% Mo. STEEL	.15-.25	300°C - 450°C
	8% Cr. 1% Mo. STEEL	.15 MAX	300°C - 450°C
PLAIN HIGH CHROMIUM STEELS	12-14% Cr. TYPE 410	.10	150°C - 250°C
	16-18% Cr. TYPE 430	.10	150°C - 250°C
	23-30% Cr. TYPE 446	.10	150°C - 250°C
HIGH CHROME NICKEL STAINLESS STEELS	18% Cr. 8% Ni. TYPE 304	.07	USUALLY DO NOT REQUIRE PREHEAT BUT IT MAY BE DESIRABLE TO REMOVE CHILL
	25-12 TYPE 309	.07	
	25-20 TYPE 310	.10	
	18-8 Cb. TYPE 347	.07	
	18-8 Mo. TYPE 316	.07	
	18-8 Mo. TYPE 317	.07	

“SUPER STAN” ALLOYS – INDEX

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