



Saitron
Engineers Pvt. Ltd.

WELDING ELECTRODES



**STRONG. QUICK.
SAFE WELDING**



ABOUT US

SAITRON ENGINEERS PVT LIMITED was established in the year 2006. The well equipped plant, was spread over an area of 16219 sq. Mts is located at Butibori, Nagpur (Maharashtra). SAITRON Engineers have been producing a wide range of special welding electrodes based on the latest technical standard. The active partners are experienced for more than 20 years in the field of welding technology. We have been successful in offering our clients effective help in finding solutions to their technical welding problems. In doing so we have developed a number of highly specialized products with individual applications and which are among the best in their field. Our product standards meet the highest international requirements as do our terms of business. For our clients we are a reliable and service oriented partner in all fields of welding. Together with various state of the art products for individual applications our product range includes welding material for all parts of industry.

Our Quality Management System is certified in accordance with ISO 9001:2008.

MANUFACTURING WIDE RANGE OF WELDING CONSUMABLES

- Electrodes for welding mild, medium and low alloy steels
- Electrodes for welding stainless steel & dissimilar metals
- Electrodes for surfacing, overlay & hardfacing applications
- Electrodes for welding cast iron machinable and non machinable
- Electrodes for cutting & gouging

QUALITY ASSURANCE

Quality Control & quality assurance are integral part of manufacturing process. The line of electrodes are tested in accordance with national and international standards like IS, AWS & DIN etc.

RESEARCH & DEVELOPMENT

We at SAITRON have the capacity to develop, and manufacture new products as per specific requirement by the customers. Specially for reclamation and wear protection in order to enhance life of components for core industries like steel, cement, mining, construction, railway, power, sugar, forging, paper, refinery & others.

STATE- OF- THE- ART MANUFACTURING FACILITY

SAITRON electrodes are manufactured at its state of the art manufacturing facility & NABL accredited testing facility located at Butibori - Nagpur.

WE ALSO DEALS IN WEAR PLATES AND RECLAMATION JOBS

We can provide wear plates which contain hard material on steel base plate. This wear plates enhance service life under condition involving abrasion, erosion and impact. Wear plates for abrasion under high temperature condition also supplied as per customer requirements.

SALES & DISTRIBUTION

Our products distributions are supported by a wide network of distributors throughout the country facilitate smooth and quick distribution. With team of qualified and trained service engineers providing services after sales to the customers.



**THE
NEW ART OF
ANALYZING
METAL**

SAITRON MAINTENANCE & REPAIR WELDING ALLOYS

ELECTRODES FOR WELDING MILD, MEDIUM AND LOW ALLOY STEELS

SAITRON ALFA 101	Applications : Storage tanks, pipes, Machine frames, construction equipments, sheet metal fabrication, steel structures and frame works, truck and bus bodies. Welding mild structures steels like IS: 2062, IS: 226, etc.	Typical Mechanical Properties	
		Tensile Strength	%, Elongation
		48 kgf / mm2 (min.)	25% (min.)
SAITRON 102 LH	Applications : Boiler and pressure vessels, penstock, structure and other components under restrained conditions and dynamic loading, ship building, steel of doubtful composition, grey cast iron buffer layer prior to hardfacing etc.	Typical Mechanical Properties	
		Tensile Strength	%, Elongation
		55 kgf / mm2 (min.)	26% (min.)
SAITRON 185	Applications : It is used for welding of 78 kgf/mm2 high tensile steels. Pen stock, Pressure vessel, Earthmoving equipments and other heavy steel fabrication made from high tensile steels. Welding of USS T-1, C & D Grades of SA-225/225M; B, C, D grades of SA-533/533M; B, C grades of SA-543/543M. Heat treated fine grained steels N-A-Xtra 55 upto 70, HY 80 etc.	Typical Mechanical Properties	
		Tensile Strength	Yield Strength
		78 kgf/mm2 (min.)	67 kgf/mm2 (min.)
		%, Elongation	CVN Impact
		20% (min.)	27 J (at -500 C)
SAITRON 165G	Applications : SAITRON 165G is best suited for high tensile steels, boiler and pressure vessels, penstock, tanks, mining and construction machinery and other heavy components under restrained conditions and dynamic loading, ship building, steel of doubtful composition, High Strength steel such as HY-80, HY-90, ASTM A514, A508, etc.	Typical Mechanical Properties	
		Tensile Strength	Yield Strength
		63 kgf / mm2 (min.)	51 kgf / mm2 (min.)
		%, Elongation	CVN Impact
SAITRON 170B	Applications : SAITRON 170-B is best suited for welding 2Cr-1 Mo and similar creep resistant steels, such as 10CrMo9 and 10CrSiMoV7, P22, etc. In Petrochemical, Power Plants, Pressure vessels, Process Piping, seamless tubes and pipes used for high temperature, low alloy steel boilers, flanges, valves, also in Fertilizers industries, etc.	Typical Mechanical Properties	
		Tensile Strength	Yield Strength
		63 kgf/mm2 (min.)	54 kgf/mm2 (min.)
		%, Elongation	CVN Impact
SAITRON MM 6466	Applications : SAITRON MM 6466 is a low heat input high Manganese deposition steel electrode. It is used for joining and overlaying manganese steels (upto 12-14% Mn) and for joining these to other steels. It is very much suitable for buffer layer prior to hardfacing and for repairing of Mn-steel. The deposited weld deposit is work harden type and gives hardness up to 380 BHN after work hardening. Excellent arc stability, easy slag removal, with smooth weld bead appearance. Crusher Roll, Crusher Jaws, Drive Sprockets, Track Pad, build-up, Cladding & Buffer Layer on dozer blades & 14% Manganese Steel part, carbon steels & Hadfield Steel.	Typical Mechanical Properties	
		Tensile Strength	62 kgf/mm2
		Hardness (as deposited)	Hardness (work harden)
		17 - 20 HRC	30 - 42 HRC



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ELECTRODES FOR WELDING STAINLESS STEEL & DISSIMILAR METALS

SAITRON 214	Applications : Best choice for welding crack sensitive steels and Hadfield Manganese steel. Typical applications include for positional joining and repair of manganese steel parts used in Cement plants and Mining industry, Steel plants, Construction and Earthmoving industry, Defence etc. Repair and fabrication of shovel, excavator and dragline buckets, sprockets, track pads and crushers etc. Specially recommended for Armour steel welding in Defence Industry. It is used for joining manganese steel to other steels and for joining armour plates.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Tensile Strength</td><td>%, Elongation</td></tr><tr><td>56 kgf/mm2 (min.)</td><td>35% (min.)</td></tr><tr><td>Hardness (as deposited)</td><td>Hardness (work harden)</td></tr><tr><td>160 - 200 BHN</td><td>Approx. 350 BHN</td></tr></table>	Typical Mechanical Properties		Tensile Strength	%, Elongation	56 kgf/mm2 (min.)	35% (min.)	Hardness (as deposited)	Hardness (work harden)	160 - 200 BHN	Approx. 350 BHN
Typical Mechanical Properties												
Tensile Strength	%, Elongation											
56 kgf/mm2 (min.)	35% (min.)											
Hardness (as deposited)	Hardness (work harden)											
160 - 200 BHN	Approx. 350 BHN											
SAITRON 216	Applications : Typical applications include welding of AISI 308L/308/304, 302, 301 type stainless steels, Joining of SS to Low alloy steel or Carbon steels. For fabrication of Stainless steel structures and assemblies such as pipefitting, plate, vessels, tanks, forging and castings in Chemical, Power, Petrochemical, Pharmaceuticals, paper processing plants, Food, Dairy, Distillery industries, Restaurant Equipment, etc. Also used as protective overlay on steel where complete corrosion resistance is required.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Tensile Strength</td><td>%, Elongation</td></tr><tr><td>57 kgf / mm2 (min.)</td><td>35% (min.)</td></tr></table>	Typical Mechanical Properties		Tensile Strength	%, Elongation	57 kgf / mm2 (min.)	35% (min.)				
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SAITRON 218	Applications: SAITRON 218 is used for dissimilar metal joints. Typical applications include welding of 309L, 308L to carbon steels and low alloy steels, stainless steel piping in refineries and chemical plants. Parting tools, Joining of Hadfield Manganese steel components in earth moving machinery and mining industry, tracks-pads, furnace parts, cooler plates, sugar mill roller journals etc. Corrosion resistance overlay on carbon steel, welding of carbon steel of poor weldability.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Tensile Strength</td><td>%, Elongation</td></tr><tr><td>59 kgf / mm2 (min.)</td><td>30% (min.)</td></tr></table>	Typical Mechanical Properties		Tensile Strength	%, Elongation	59 kgf / mm2 (min.)	30% (min.)				
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SAITRON 220	Applications: Typical applications include welding of SS 310 to carbon steels. Also used for overlays on Carbon and stainless steels for corrosion resistance and high temperature application upto 1100°C. Excellent resistance oxidation at high temperature makes it best choice for Heat Exchangers, furnace parts, Heat treatment boxes, Kiln Cooler parts, anchor welding etc.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Tensile Strength</td><td>%, Elongation</td></tr><tr><td>56 kgf / mm2 (min.)</td><td>32% (min.)</td></tr></table>	Typical Mechanical Properties		Tensile Strength	%, Elongation	56 kgf / mm2 (min.)	32% (min.)				
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SAITRON 221	Applications: SAITRON 221 is used for positional joining of heavy equipments parts in mining, cement, construction, earthmoving and steels industry. Also for dissimilar metal joints. Joining of Hadfield Manganese steel components in earth moving machinery and mining industry, shovel, excavators, dragline buckets, tracks-pads, furnace parts, cooler plates, sugar mill roller journals etc. Corrosion resistance overlay on carbon steel, welding of carbon steel of poor weldability.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Tensile Strength</td><td>%, Elongation</td></tr><tr><td>65 kgf / mm2 (min.)</td><td>30% (min.)</td></tr></table>	Typical Mechanical Properties		Tensile Strength	%, Elongation	65 kgf / mm2 (min.)	30% (min.)				
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SAITRON 224	Applications: It is suitable for high strength stainless steel joint with dissimilar metals. Best for dissimilar metal joints with carbon steels, Hadfield Manganese steel, Armour steel, high carbon, alloy steels and generally hard to weld steels. Typical applications are splines, threads, keyways of shafts, spur gear tooth, wear plates of hydraulic excavator buckets, gear box main shafts, counter shafts, leafsprings etc.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Tensile Strength</td><td>%, Elongation</td></tr><tr><td>85 kgf / mm2 (min.)</td><td>22% (min.)</td></tr></table>	Typical Mechanical Properties		Tensile Strength	%, Elongation	85 kgf / mm2 (min.)	22% (min.)				
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Tensile Strength	%, Elongation											
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SAITRON 232	Applications: It is an excellent choice for critical fabrication and repair applications of chemical tanks and equipment, textile and other dyeing equipment, paper and pulp mill tanks, pickling tanks, salt processing equipment, alkali tanks, paint and dye industry, as well as in fertilizer industry, etc. The special addition of molybdenum increases the creep resistance at elevated temperatures and offers good resistance to pitting corrosion. The controlled carbon content reduces the possibility of intergranular carbide precipitation. The weld metal deposit is resistant to sulphuric, hydrochloric, acetic, phosphoric, citric acid etc.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Tensile Strength</td><td>%, Elongation</td></tr><tr><td>57 kgf / mm2 (min.)</td><td>35% (min.)</td></tr></table>	Typical Mechanical Properties		Tensile Strength	%, Elongation	57 kgf / mm2 (min.)	35% (min.)				
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SAITRON ZF	Applications: SAITRON ZF is a low heat input electrode specially developed with "ZERO FERRITE" for applications which required special corrosion resistance. The special addition of molybdenum increases the creep resistance at elevated temperatures and offers good resistance to pitting corrosion. High temperature resistance upto 750°C. The weld metal deposit is resistant to zinc coating tanks, sulphuric, hydrochloric, acetic, phosphoric, citric acid etc. It is an excellent choice for critical fabrication & repair applications of chemical tanks and equipment, textile and other dyeing equipment, paper and pulp mill tanks, zinc coating tanks, pickling tanks, salt processing equipment, alkali tanks, paint and dye industry, as well as in fertilizer industry, etc.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Tensile Strength</td><td>%, Elongation</td></tr><tr><td>55 kgf / mm2 (min.)</td><td>30% (min.)</td></tr></table>	Typical Mechanical Properties		Tensile Strength	%, Elongation	55 kgf / mm2 (min.)	30% (min.)				
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SAITRON 720	Applications: SAITRON 720 is low heat input straight chrome stainless steel electrode designed to weld stainless steels of similar composition and also for overlay on carbon steels. Weld deposit offers excellent resistance to corrosion, erosion and abrasion. Typical applications include surfacing of steel mill rolls, Furnace burner parts, Turbine parts, Refiner plug and socket, Sleeves, Valve seats, etc. Also used on stainless steels like types 410, 416, 420 and cast C-15.	Typical Mechanical Properties (After Heat Treatment at 7300 to 7600 for 1hr)	
		Tensile Strength	%, Elongation
		55 kgf / mm2 (min.)	20% (min.)

SAITRON 742	Applications: SAITRON 742 weld deposit offers excellent resistance to corrosion, pitting and impact loads. Typical applications include joining of similar composition and overlay of continuous-cast rolls, wear parts of steel industry components, Bridge store; depositions to thick areas of water, steam and gas fittings for operating temperatures upto 450°C. Also used for surfacing of steam turbines blades, automobile body parts, valve seats and high pressure valves. It can also be used for the repair of pulp and paper plant equipment, cutlery, components of chemical and food industries.	Typical Mechanical Properties (After Heat Treatment at 7300 to 7600 for 1hr)	
		Tensile Strength	%, Elongation
		100 kgf / mm2 (min.)	15% (min.)
		Hardness	38 - 42 HRC

SAITRON 752	Applications: It is used for cladding and joining. Joining combination of carbon steel, stainless steel, inconel alloys, etc. suitable for Furnace parts, heat-treating parts, continuous casting molds, ingot tongs. Application in various industry such as Iron & steel, Cement, Forging, Casting, Foundry, Chemical & Gas plants etc. It may be used for applications at temperatures ranging from cryogenic to around 1800°F. It has an excellent oxidation and corrosion resistance at high temperature and retains impact strength at cryogenic temperatures.	Typical Mechanical Properties	
		Tensile Strength	Elongation
		60 kgf / mm2 (min.)	30% (min.)

SAITRON 760	Applications: SAITRON 760 is low heat input straight chrome stainless steel electrode designed to weld stainless steels of similar composition and also for overlay on carbon steels. Typical applications include welding of AISI 430 and similar compositions, also surfacing of machine parts, gears, propeller shafts, oil refinery components, oil burners, automobile body parts, castings, cutlery, components of chemical and food industries.	Typical Mechanical Properties (After Heat Treatment at 7600 to 7900 for 1hr)	
		Tensile Strength	%, Elongation
		52 kgf / mm2 (min.)	20% (min.)

SAITRON 775	Applications: It is used for welding of HV-9A, HV-9, Carpenter 20 stainless steel and similar alloy and also for welding low and medium carbon steels, low and medium alloy steels etc. used in Chemical industry, Food & Dairy industry, cooling coils of compressors, used in fabrication of equipments & vessels for handling & storage of sulphuric acid and phosphoric acid. And similar alloy for high temperature services. This fully austenitic weld deposit possesses excellent corrosion and heat resistance properties up to 1200°C.	Typical Mechanical Properties	
		Tensile Strength	%, Elongation
		60 kgf / mm2 (min.)	30% (min.)



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ELECTRODES FOR SURFACING, OVERLAY & HARDFACING APPLICATIONS

SAITRON HF 100	Applications : SAITRON HF 100 is a low heat Chromium Carbide anti-wear alloy offer excellent resistance against abrasion, pressure, corrosion and mild to medium impact on steel components of low alloy and manganese steels. Easy welding with self slag removal. Bright weld bead with smooth appearance. Stable arc. High recovery. It is suitable for Sugar Cane Knives, Bull dozer blades, Crusher teeth, Screw Conveyors, Pump bodies, Rock chutes, Dredging pump impellers, Mixer blades, Scraper blades, Pulleys, Ripper teeth, Crushing & Pulversing plants, Fibrizer/Mincer hammers, Rolling mill entry & exit guides etc. Also for various applications in Mining, Cement, Steel and Paper industries.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td colspan="2">Hardness (As welded)</td></tr><tr><td colspan="2">55 - 62 HRC</td></tr></table>	Typical Mechanical Properties		Hardness (As welded)		55 - 62 HRC	
Typical Mechanical Properties								
Hardness (As welded)								
55 - 62 HRC								
SAITRON HF 600 WH	Applications: Excellent choice for surfacing and building-up worn out parts of mining equipments, earthmoving equipments, railway point and crossing and components made of manganese. Also used for joining on manganese casting to mild steel and other carbon steels. Weld deposit structure is austenitic, which is tough and easily work-hardened under impact condition, ultimately increasing the abrasion resistance. Used for surfacing in Cement plants, Mining equipments, Earthmoving equipments, etc. It is highly suitable for welding 13% Mn steel, rail point and crossing, rollers, mill hammers, Shovel, Dredge buckets, heavy crushing equipments like jaw crusher, Gyratory crusher cones, Swing hammers, Excavator teeth, crusher mantles and shredder hammers, hard surfacing of hot shear, rings in rotary furnace, forging moulds, hot forging dies etc. Used for overlaying, cushioning and building up of low, medium carbon, low alloy and Hadfield steels. Deposits are extremely tough and resist deformation under repeated impact loads.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Hardness (As Deposited)</td><td>Hardness (Work Harden)</td></tr><tr><td>175 - 250 BHN</td><td>400 - 500 BHN</td></tr></table>	Typical Mechanical Properties		Hardness (As Deposited)	Hardness (Work Harden)	175 - 250 BHN	400 - 500 BHN
Typical Mechanical Properties								
Hardness (As Deposited)	Hardness (Work Harden)							
175 - 250 BHN	400 - 500 BHN							
SAITRON HF 635	Applications: SAITRON HF 635 is used for high build-up as cushioning layers before hardfacing with harder abrasion-resistant weld alloys. Weld deposits is tough and machinable with high compressive strength. Resist severe impact condition when used on Low and Medium carbon steels, Low & Medium alloy steels. High resistance to rolling and sliding friction. Used on Slideways, Guides and couplings, wheel crowns, Shafts and wheels, Sprockets, carrier and track rollers, idlers of earth moving equipments, crane wheels, pinions and gears, tail bars, wobbler ends of rolls and couplers in steel plants and sugar mills, girth gears of cement mills and power stations and supporting rollers of kiln tyres. Important applications are gear teeth, rail-ends and crossing, shaft, mill guide plates, pulley, Rope winches, Brake drums, clutches, wheel, axles, couplings, sprockets, pinion etc.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Hardness (As Deposited)</td><td>Hardness (Flame Harden)</td></tr><tr><td>270 - 320 BHN</td><td>340 - 375 BHN</td></tr></table>	Typical Mechanical Properties		Hardness (As Deposited)	Hardness (Flame Harden)	270 - 320 BHN	340 - 375 BHN
Typical Mechanical Properties								
Hardness (As Deposited)	Hardness (Flame Harden)							
270 - 320 BHN	340 - 375 BHN							
SAITRON HF 640	Applications : SAITRON HF 640 is low heat input “Anti-Wear” Cr-Mo alloyed steel electrode. It is used for high build-up as cushioning layers before hardfacing with harder abrasion-resistant weld alloys. Weld deposit is dense and crack free. Easy welding with self removal slag. Used on Sideways, Guides and couplings, wheel crowns, Shafts and wheels, Sprockets, carrier and track rollers, idlers of earth moving equipments, crane wheels, pinions and gears, tail bars, wobblers ends of rolls and couplers in steel plants and sugar mills, girth gears of cement mills and power stations and supporting rollers of kiln tyres. Important applications are gear teeth, rail-ends and crossing, shaft, mill guide plates, pulley, Rope winches, Brake drums, clutches, wheel, axles, couplings, sprockets, pinion etc.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td colspan="2">Hardness (As Welded)</td></tr><tr><td colspan="2">400 - 450 BHN</td></tr></table>	Typical Mechanical Properties		Hardness (As Welded)		400 - 450 BHN	
Typical Mechanical Properties								
Hardness (As Welded)								
400 - 450 BHN								
SAITRON HF 655	Applications: SAITRON HF 655 Weld deposit is of carbide type and have good abrasion resistance. In as welded condition it gives high hardness which is suitable for soil abrasion and light impact abrasion. It is suitable for mining and earthmoving equipments, bull dozers blades, tractor parts, Shear blades, Plow shares, bucket teeth, pug mill crusher, coal chutes, dipper teeth, screw conveyers, crusher plates, brick machinery, pellet plant parts and tamping tools. This alloy can be used on components of Steels, Manganese steels etc.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Hardness (As Deposited)</td><td>55 - 60 HRC</td></tr></table>	Typical Mechanical Properties		Hardness (As Deposited)	55 - 60 HRC		
Typical Mechanical Properties								
Hardness (As Deposited)	55 - 60 HRC							
SAITRON HF 660	Applications: SAITRON HF 660 is a low heat Chromium Carbide anti-wear alloy offer excellent resistance against abrasion, pressure and mild to medium impact on steel components of low alloy and manganese steels. It is suitable for Sugar Cane Knives, Bull dozer blades, Crusher teeth, Pump bodies, Dredging pump impellers, Mixer blades, Scraper blades, Pulleys, Ripper teeth, Crushing & Pulversing plants, Coal burner pipes, Coal nozzles, Fibrizer/Mincer hammers, Rolling mill entry & exit guides etc.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Hardness (As Deposited)</td><td>57 - 62 HRC</td></tr></table>	Typical Mechanical Properties		Hardness (As Deposited)	57 - 62 HRC		
Typical Mechanical Properties								
Hardness (As Deposited)	57 - 62 HRC							

SAITRON HF 661	Applications: SAITRON HF 661 Weld deposit is of special carbide type and have good abrasion resistance. In as welded condition it gives high hardness above 60 HRC which is suitable for soil abrasion and medium impact abrasion. It is suitable for mining and earthmoving equipments, bull dozers blades, tractor parts, Shear blades, Plow shares, bucket teeth, pug mill crusher, coal chutes, dipper teeth, screw conveyers, crusher plates, brick machinery, pellet plant parts and tamping tools. This alloy can be used on components of Steels, Manganese steels etc.	Typical Mechanical Properties	
		Hardness (As Deposited)	60 - 64 HRC (Single Layer on mild steel)

SAITRON HF 662	Applications: SAITRON HF 662 is C-Cr-W alloyed hardfacing low heat electrode. Special alloy addition gives microstructure of complex carbide, so that the weld deposit has high abrasion resistance with mild impact even at high temperature upto 4500C. It is suitable for hardfacing the components which are subject to abrasion, impact and compressive loads, used in Cement industry, Steel Industry, Power plants, etc. Parts like Hammers, Buckets teeth, Blowbars, Dredger pumps parts, Earthmoving parts, etc.	Typical Mechanical Properties	
		Hardness (As Deposited)	62 - 66 HRC (Third Layer on mild steel)

SAITRON HF 663	Applications: SAITRON HF 663 is a highly alloyed with C-Cr-Mo-V hardfacing electrode. Special alloy addition gives microstructure of primary chromium carbide and complex carbide of Mo & V, so that the weld deposit can sustain severe abrasion and erosion resistance even at high temperature upto 600°C. It can also be used on equipments operating in corrosive environments. It is suitable for Coal burner pipes, Coal nozzles, Fibrizer/Mincer hammers, Sinter breaker arms, steel mills and sinter plants, Crusher sieves, Hot Slag Conveyors, Clinker Conveyor chains, Augers, Slurry pumps, Billet Conveyor Guides, dust exhausters, Coke pusher shoes, vertical Coal mill rollers, Dredger components and Tip casting etc. Also in earth moving machines, mixers, mineral dressing equipments, especially where live coal and slag are treated. SAITRON HF 663 is useful in power plants, steel plants and cement plants etc.	Typical Mechanical Properties	
		Hardness (As Deposited)	60 - 65 HRC

SAITRON HF 665	Applications: SAITRON HF 665 is a highly alloyed with Cr-Mo-Nb-V-W hardfacing electrode. Special alloy addition gives microstructure of primary chromium carbide and complex carbide of Mo-Nb-V and W, so that the weld deposit can sustain severe abrasion and erosion resistance even at high temperature upto 650°C. It is suitable for Coal burner pipes, Fibrizer/Mincer hammers, Sinter breaker arms, Hot Slag Conveyors, Clinker Conveyor chains, Augers, Slurry pumps, Billet Conveyor Guides, Coke pusher shoes, vertical Coal mill rollers etc. Also in mineral dressing equipments, specially where live coal and slag are treated.	Typical Mechanical Properties	
		Hardness (As Deposited)	62 - 67 HRC



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ELECTRODES FOR WELDING CAST IRON MACHINABLE AND NON MACHINABLE

SAITRON 800 NM	Applications: SAITRON 800 NM is a non machinable low heat input electrode for welding of cast iron. It is best choices for surface preparation of cast iron to give subsequent layers with Nickel and Ferro-Nickel electrode. It is used to seal foundry defects etc. weld deposit is non-machinable.							
SAITRON 830	Applications: SAITRON 830 is a low heat input electrode for welding of cast iron. It is best choices for surface preparation of cast iron to give subsequent layers with Nickel and Ferro-Nickel electrode. Weld deposit with improved crack resistivity. Electrode burning with strong arc force and deposit weld of spray type is very much useful to seal the cast iron. It is highly suitable for surface preparation of cast iron to give subsequent layers with Nickel and Ferro-Nickel electrode. It is used to seal foundry defects etc.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Hardness (As Deposited)</td><td>30 - 40 HRC</td></tr></table>	Typical Mechanical Properties		Hardness (As Deposited)	30 - 40 HRC		
Typical Mechanical Properties								
Hardness (As Deposited)	30 - 40 HRC							
SAITRON 850	Applications: SAITRON 850 is used for welding of cast iron, and joining of cast iron to steels. The weld deposit is highly crack resistant. Smooth welding arc with less spatter. Weld deposit provide good level of strength, toughness and machinability. Good weld joints in Grey, Malleable, Nodular or Spheroidal cast iron and some alloy cast irons. It is highly suitable for repair and fabrication of cast iron housings, blocks, machinery parts, frames, casting defects, repair of cracks, etc. It also suitable for joining application of cast irons to carbon steels. Used on machine beds, pump casings, valve bodies, valve flanges, bell housings, motor covers, friction press discs etc.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Tensile Strength</td><td>Hardness</td></tr><tr><td>35 kgf / mm2 (min.)</td><td>170 - 190 BHN</td></tr></table>	Typical Mechanical Properties		Tensile Strength	Hardness	35 kgf / mm2 (min.)	170 - 190 BHN
Typical Mechanical Properties								
Tensile Strength	Hardness							
35 kgf / mm2 (min.)	170 - 190 BHN							
SAITRON 855	Applications : SAITRON 855 is a low heat input Ferro-Nickel all position electrode for welding of cast iron, and joining of cast iron to steels. The weld deposit is highly crack resistant. Smooth welding arc with minimal spatter. Weld deposit provide good level of toughness, ductility and excellent machinability. Good color match. Suitable for use on both AC and DC +/- . It is highly suitable for repair and fabrication of cast iron casting, Nodular and Malleable iron castings, Grey iron castings, housings, build-up foundry defects, frames, casting defects, repair of cracks, etc. Recommended for both heavy and thin sections. It also suitable for joining application of cast irons to carbon steels.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Tensile Strength</td><td>Hardness (As Deposited)</td></tr><tr><td>35-40 kgf/mm2</td><td>150 - 175 BHN</td></tr></table>	Typical Mechanical Properties		Tensile Strength	Hardness (As Deposited)	35-40 kgf/mm2	150 - 175 BHN
Typical Mechanical Properties								
Tensile Strength	Hardness (As Deposited)							
35-40 kgf/mm2	150 - 175 BHN							
SAITRON 860	Applications: SAITRON 860 is used for welding of cast iron, and joining of cast iron to steels. The weld deposit is highly crack resistant. Smooth welding arc with less spatter. Weld deposit provide good level of strength, toughness and machinability. Good weld joints in Grey, Malleable, Nodular or Spheroidal cast iron and some alloy cast irons. It is highly suitable for repair and fabrication of cast iron housings, blocks, machinery parts, frames, casting defects, repair of cracks, etc. It also suitable for joining application of cast irons to carbon steels. Used on machine beds, pump casings, valve bodies, valve flanges, bell housings, motor covers, friction press discs etc.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Tensile Strength</td><td>Hardness</td></tr><tr><td>35-40 kgf/mm2 (min.)</td><td>160 - 180 BHN</td></tr></table>	Typical Mechanical Properties		Tensile Strength	Hardness	35-40 kgf/mm2 (min.)	160 - 180 BHN
Typical Mechanical Properties								
Tensile Strength	Hardness							
35-40 kgf/mm2 (min.)	160 - 180 BHN							
SAITRON 870	Applications: SAITRON 870 is used for welding of cast iron, and joining of cast iron to steels. The weld deposit is highly crack resistant. Smooth welding arc with less spatter. Weld deposit provide good level of strength, toughness and machinability. Good weld joints in Grey, Malleable, Nodular or Spheroidal cast iron and some alloy cast irons. It is highly suitable for repair and fabrication of cast iron housings, blocks, machinery parts, frames, casting defects, repair of cracks, etc. It also suitable for joining application of cast irons to carbon steels. Used on machine beds, pump casings, valve bodies, valve flanges, bell housings, motor covers, friction press discs etc.	<table><tr><th colspan="2">Typical Mechanical Properties</th></tr><tr><td>Tensile Strength</td><td>Hardness</td></tr><tr><td>45-50 kgf/mm2 (min.)</td><td>155 - 175 BHN</td></tr></table>	Typical Mechanical Properties		Tensile Strength	Hardness	45-50 kgf/mm2 (min.)	155 - 175 BHN
Typical Mechanical Properties								
Tensile Strength	Hardness							
45-50 kgf/mm2 (min.)	155 - 175 BHN							



SAITRON 890

Applications: SAITRON 890 used for welding of cast iron, and joining of cast iron to steels. It is used for repair, filling, and build up on cast iron. The weld deposit is highly crack resistant. Smooth welding arc with less spatter. Weld deposit provide good level of strength, toughness and machinability. Good weld joints in Grey, Malleable, Nodular or Spheroidal cast iron and some alloy cast irons. It is highly suitable for repair and fabrication of cast iron housings, pump casing, blocks, machinery parts, frames, casting defects, repair of cracks, impellers, etc. It also suitable for joining application of cast irons to carbon steels. Used on machine beds, pump casings, valve bodies, valve flanges, bell housings, motor covers, friction press discs etc.

Typical Mechanical Properties

Tensile Strength	Hardness
35 kgf / mm2 (min.)	150 - 175 BHN

ELECTRODES FOR WELDING COPPER, BRASS & BRONZE

SAITRON BRONZE 907 AC/DC

Applications : SAITRON BRONZE is a low heat input electrode excellent for welding and surfacing of copper, brass and bronze. Weld deposit is smooth, uniform and dense, free from porosity and cracks. The weld deposit is machinable and colour matching to bronze. SAITRON BRONZE weld deposit offer excellent resistance to salt water and steam corrosion. Weld deposit give smooth finish after machining. Used for surfacing of pump impellers, valves, wear rings, gear teeth, sleeves, packing glands etc. Also used for joining. Ideal for filling cavities in copper alloy castings and cladding on steels.

Typical Mechanical Properties

Tensile Strength	35 kgf / mm2
Hardness (As Deposited)	Hardness (Work Hardness)
75 - 80 HRB	90 - 95 HRB

ELECTRODES FOR CUTTING & GOUGING

SAITRON CUT

Applications: SAITRON CUT is specially developed for metal cutting and piercing applications. It can be used on AC/DC-/+ with stable arc. Excellent strike and re-strike during cutting and piercing. No air pressure or oxygen is required; it can easily used with our regular arc welding machine. It is suitable for all position cutting, piercing, removing and beveling metals prior to welding on mild steel, carbon steel, stainless steel, cast irons, nickel alloys, aluminium, copper and bronze etc. Mark the line where cutting is desired. Use AC/DC -/+ power source. While using electrode, take advantage of arc blow caused by special exothermic coating and hand pressure. When arc is struck, push and pull, holding electrode at 45° angle and using sawing motion to cut. The closer the arc, the faster and cleaner the cut. For piercing holes, hold electrode vertically and push in and out until the hole is pierced

SAITRON GOUGE

Applications: SAITRON GOUGE is specially developed for metal gouging applications. It can be used on AC/DC-/+ with stable arc. Excellent strike and re-strike during chamfering and grooving. No air pressure or oxygen is required; it can easily used with our regular arc welding machine. Can gouge all metals including stainless steels, aluminium and copper. Applicable in both ferrous and non-ferrous foundries for the removal of risers and gates from castings and for cutting heavy scrap prior to remelting. Hold the electrode in the direction of travel at an angle not more than 20° with the plain of the job and travel the electrode using SAW-LIKE (forward and backward) motion. Delayed action permits placing of electrode at the exact starting point. Push the electrode along with the line quickly for a shallow chamfer, more slowly or with a weaving motion for a deeper gouge. Utilizing the heat and force of the highly concentrated arc, push the molten metal ahead and away. If deeper gouge is needed repeat procedure until the required depth has been achieved.



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SAITRON FABRICATION WELDING ALLOYS

TYPE	CLASSIFICATION	APPLICATION
MSGP	AWS A 5.1	
SAITRON ALFA	E 6013	Storage tanks, pipes, Machine frames, construction equipments, sheet metal fabrication, steel structures and frame works, truck and bus bodies. Welding mild structural steels like IS:2062, IS:226 etc.
SAITRON BETA	E 6013	It is recommended for welding structures of varying thicknesses of MS plates in different type of joints and welding ordinary grade ship steel as well as structural steel of similar strength and composition. Suitable for welding of pipes, bridges, boilers and pressure vessels etc.
SAITRON GAMMA	E 6013	Boiler and Pressure vessels, bogies and under frames of carriages and wagons, cranes, shipbuilding, storage tanks, bridges and dams, machine building, heavy structural work, etc.
Low Hydrogen	AWS A 5.1	
SAITRON LH 7016	E 7016	For welding heavy section mild and medium tensile steels that are subjected to dynamic loading. It is intended for welding carbon and C-Mn steels. It is also suitable for depositing non machinable weld on cast iron.
SAITRON LH ECHO	E 7018	Boiler and Pressure vessels, penstock, structure and other components under restrained conditions and dynamic loading, ship building, steel of doubtful composition, grey cast iron buffer layer prior to hard facing etc.
SAITRON LH 7018	E 7018	Boiler and pressure vessels, penstock, structure and other components under restrained conditions and dynamic loading, ship building, steel of doubtful composition, grey cast iron buffer layer prior to hard facing etc.
SAITRON LH 7018 SPL	E 7018-1	Ideal for welding of fine grained carbon manganese steels and medium tensile steels having UTS of 50-58 kgf/mm ² and is recommended for welding of pressure vessels, boilers, Horton spheres, mounded bullets, heavy fabrication work and for pipelines subjected to low temperature.
Low Hydrogen Low Alloy	AWS A 5.5	
SAITRON LH 7018 G	E 7018 G	Especially designed for the welding of low alloy steels such as steels containing 1% Nickel and also for structures to withstand low temperatures.
SAITRON 8018 G	E 8018 G	Low alloy steel to withstand low temperature.
SAITRON 9018 M	E 9018 M	Finds extensive use in pressure vessels, piping, penstock, earth moving equipment, machinery parts, automobile parts, chemical plants where low alloy Ni Cr Mo steels are used. Suitable for N-A-XTRA 55 and N-A-XTRA 60 steels.
SAITRON 11018 M	E 11018 M	Widely used for welding of low alloy high strength structural steels including quenched and tempered steels such as USS Ti, heat treated fine grained steels like N-A-XTRA 70, Hy80 and ASTM A5.1.7 grade F generally used for penstock, earth moving equipment and other heavy steel fabrications.

TYPE	CLASSIFICATION	APPLICATION
Low Hydrogen Low Alloy	AWS A 5.5	
SAITRON 9018 G	E 9018 G	Finds extensive use in pressure vessels and pressure part welding, chemical plants where low alloy Ni; Cr, Mo steels is used. Other applications are piping, penstock, automobile parts, earth moving equipment etc.
SAITRON 7018 A1	E 7018 A1	0.5% Mo Steel.
SAITRON 8018 B2	E 8018 B2	1.25% Cr; 0.5% Mo and similar creep resistance steel.
SAITRON 9018 B3	E 9018 B3	Low alloy steels, boilers, Oil refinery
SAITRON 8018 C1	E 8018 C1	For welding of 2.5% Ni steel, Refinery
SAITRON 8018 C2	E 8018 C2	For welding of 3% Ni steel, Refinery
SAITRON 8018 C3	E 8018 C3	For welding of 1% Ni and Mo steel, Refinery
SAITRON 9018 D1	E 9018 D1	Welding of rails joints and for cladding on rails
SAITRON 8018 D3	E 8018 D3	Welding of Mn, Mo and Ni steel.
SAITRON 9018 D3	E 9018 D3	Welding of Mn, Mo and Ni steel.
SAITRON 10018 D2	E 10018 D2	Welding of Mn, Mo and Ni steel.
SAITRON 7018 W1	E 7018 W1	Welding of weathering steel.
SAITRON 8018 W2	E 8018 W2	Welding of weathering steel.
Stainless Steel	AWS A 5.4	
SAITRON 308	E 308-16	For the welding of 18/8 SS, represented by AISI type 301, 302, 304 and 308; and German steel Nos. 4016, 4501, 4300, 4301 on continental steel V2A, Ugine NS 22S NS 21S, Avesta 832 MV; Soderfors 553, Sandvik Or-2; UHB etc. Dump impellers, Steels of difficult weldability such as certain grades steel, for building-up stainless surfaces on centrifugal pump impellers and shafts, valve faces, seats and chemical plants.
SAITRON 308 L	E 308 L-17	For the welding of 18/8 SS, represented by AISI type 301, 302, 304 and 308 having low Carbon content.
SAITRON 309	E 309-17	Welding of AISI 309 Mo type, Joining SS to Low alloy steels or Carbon steels. Deposition of buffer layer on Carbon steel or low alloy steels before deposition of 18/8 type of weld metal.
SAITRON 309 L	E 309 L-17	Welding of AISI 309L type, Joining SS to Low alloy steels or Carbon steels. Deposition of buffer layer on Carbon steel or low alloy steels before deposition of 18/8 type of weld metal.
SAITRON 316	E 316-17	For the welding of 19/12 Mo SS, represented by AISI types 316, 317; For welding of equipments on chemical industries, Paper and pulp industry, Paint & dye industries.



TYPE	CLASSIFICATION	APPLICATION
Stainless Steel	AWS A 5.4	
SAITRON 316L	E 316 L-17	For the welding of 18/13 Mo SS, represented by AISI types 316/316L/317; For welding of equipments on chemical industries, Paper and pulp industry, Paint and dye industries.
SAITRON 310	E 310-17	Welding AISI 310 type, German Steels 4762, 4828, 4841, 4846 and 4848, cladding side of stainless clad steels, straight chrome steels and dissimilar steels, hydrogenation and polymerisation plant, gas turbine combustion chamber parts, high temperature furnace parts, annealing boxes and carburizing pots.
SAITRON 312	E 312-16	High strength low alloy and dissimilar alloys
SAITRON 317	E 317 - 16	Dissimilar steel and 13 % Mn Steel
SAITRON 317L	E 317 L-16	317, 317L type, equipments of severe corrosion
SAITRON 308B	E 308 B-15	Cryogenic application, 304, 304L
SAITRON 316B	E 316 B-15	Armour plates, SS to unalloyed or low alloy steel
SAITRON 318	E 318-16	For the welding of 19/12 Mo stabilized SS, represented by AISI types 318; for welding of equipments on chemical industries, Paper and pulp industry, Paint and dye industries.
SAITRON 347	E 347-17	For the welding of 18/8 Nb stabilized SS, represented by AISI types 321, 347. Fabrication of equipments in Refineries, Chemical industries Power plants, Centrifugal pump impellers and shafts, valve faces, seats.
SAITRON 2209	E 2209-17	Duplex stainless steel, ship building
SAITRON 410	E 410-15	Joining, Surfacing, Inlay and overlay of 410, 410S
SAITRON 410 Ni Mo	E 410 NiMo-16	Hydel turbine blades, High pressure vessels
SAITRON 430	E 430-15	Automobile body molding, Oil burner parts



TYPE	CLASSIFICATION	APPLICATION
Cast Iron	AWS A 5.6/5.11/5.15	
SAITRON BCAST	E Cu Sn-A	Welding and Surfacing of Copper, Brass and bronze
SAITRON MCAST	E NiCu-7	Monel, Monel plated steel, Monel to MS
SAITRON FeNi	E Ni-Fe-CI	Cast Iron, Cast Iron to steel, Repairing of jobs
SAITRON NCAST	E Ni-CI	Cast Iron to cast Iron Repair of defects
Reclamation Electrodes		
SAITRON HF 25	24-27 HRC	Crack proof, Resistance to pressure and Impact
SAITRON HF 35	32-35 HRC	Rollers, Brake shoe, gear teeth, Mill pinion.
SAITRON HF 55	50-52 HRC	Shear blades, tools for hot trimming and cold punching, dies and tools
SAITRON HF 60	54-58 HRC	Cement industries, scrappers feeding screw, bug mill knife etc.
SAITRON HF Mn	22-25 HRC	Mn, Steel Shovel Bucket Teeth and tips
SAITRON HF 65	55-57 HRC	Shear Blades, Roll Face repairs
SAITRON HF 65B	55-58 HRC	Scraper Blades, Bucket teeth & tips
SAITRON HF 32K	54-58 HRC	Gives air hardening weld metal of 550 BHN
SAITRON HF 33K	45-50 HRC	Worn out parts like shear blades and punching tools
SAITRON HF 34K	38-42 HRC	Worn out Components like forging dies, continuous cast roller's etc.
SAITRON HF 64K	32-37 HRC	Suitable for forging, dies, Rails Crane wheels,
Cutting Gouging		
SAITRON CUT	-	Cutting of steel and non ferrous Metals
SAITRON GOUGE	-	Gouging or groove cutting of steel and other ferrous Metals



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OUR MAJOR CLINETS

No.	COMPANY NAME		
1	BHARAT HEAVY ELECTRICAL LIMITED (BHEL)		
2	COAL INDIA LIMITED		
3	DEPARTMENT OF ATOMIC ENERGY		
4	GUJRAT STATE ROAD TRANSPORT CORPORATION (GSRTC)		
5	INDIAN ARMY		
6	INDIAN NAVY		
7	INDIAN ORDNANCE FACTORY		
8	INDIAN SPACE RESEARCH ORGANIZATION (ISRO)		
9	MISHRA DHATU NIGAM LIMITED (MIDHANI)		
10	NATIONAL MINERAL DEVELOPMENT CORPORATION (NMDC)		
11	NATIONAL THERMAL POWER CORPORATION LIMITED (NTPC)		
12	INDIAN RAILWAY		
13	OIL AND NATURAL GAS CORPORATION LIMITED (ONGC)		
14	RAJASTHAN STATE ROAD TRANSPORT CORPORATION (RSRTC)		
15	RASHTRIYA ISPAT NIGAM LIMITED (RINL)		
16	STEEL AUTHORITY OF INDIA LIMITED (SAIL)		
17	MOIL LIMITED		
18	JSW STEEL LIMITED		
19	CENTRAL POWER RESEARCH INSTITUTE		



We take pride that famous Indian companies
confirm our products and **approve them**.



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Sinter crushing components (stars / grizzly bars) hardfaced with high temperature alloys



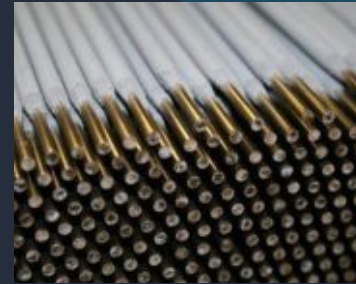
Seperator Cone



Coke cutter protected with hardfacing electrodes



Feed screw protected with high hardness alloy



Hardfacing of tooth points with stick electrodes

SAITRON HARDFACING ALLOY

Repair & Buffer	Build Up	Serve Impact	Abrasion Impact	Metal to Metal Wear	Temperature & Abrasion (Service Metal to Earth)	Temperature & Abrasion (Metal to Metal)
214	635	600 WH	655	655	663	742
221	185		660	742	665	4752
224			661	661		



Saitron
Engineers Pvt. Ltd.

WELDING ELECTRODES

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DEALERS