



KOTA ELECTRODES BRIGHT ELECTRODES

Quality Matters, Efficiency Matters



Leadership in
Welding Electrodes
Since 1987



KOTA ELECTRODES

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Weld Metal



SCAN QR CODE



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APPROVED BY



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NATIONAL TEST HOUSE
A Govt. Laboratory

International Approvals



Lloyd's
Register
Approved in LR Gr.2 - Sec.3

Content for Authorised Distributor

A Manufacturing Unit of Welding Consumables

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COMPARATIVE CHART

S.NO.	BRANDS NAME	AWS CODE	KISWEL USA	ADOR	ESAB	D&H(S)
GENERAL PURPOSE MILD STEELS ELECTRODES						
1.	ORIENTE 6013	E-6013		METAL BOND	FERRO SPEED PLUS	NORMA
2.	WELD METAL 6013	E-6013		METAL BOND	FERRO SPEED PLUS	NORMA
3.	WELD METALS 6013-S	E-6013	KR-3000	SUPER BOND	SESAB-28	MEDIO
4.	WELD METALSS 6013-SS	E-6013		SUPER BOND SS	VORTEX-1	EXOBEL
LOW HYDROGEN ELECTRODES FOR HIGH/ MEDIUM TENSILE STEEL						
5.	WELD METAL 7016	E 7016		TENALLOY - 16	FERROWELD-1/ESAB 56	INDOTHERM
6.	WELD METAL 7018	E 7018	K-7018	TENALLOYR SPL.	FERROWELD-2/ESAB 36H	SUPRATHERM
7.	WELD METAL 8018W2	E 8018W2		ULTRACORTEN III	-----	COROTHERM (SPL)
STAINLESS STEEL ELECTRODES						
8.	WELD METAL 308L	E 308 L	KST- 308 L	SUPERINOX 1 C	OK 61.30	RUTOXB
9.	WELD METAL309L	E 309 L	309 L	BETANOX DL	OK 67.60	D&H 309 L
10.	WELD METAL 316 L	E 316 L	ST-316 L	SUPRINOX 2 C	OK 63.30	RUTOCD
HARD SURFACING ELECTRODES						
11.	WELD METAL 350	350 BHN		ZED ALLOY	-----	SHC-SIX
12.	WELD METAL 630	600 BHN		ZED ALLOY 600	DUROID 65	D&H-630 H
CAST IRON ELECTRODES						
13.	WELD METAL CASTIRON	EST.		-----	-----	-----
14.	WELD METAL FENI	FENI		FERICAST	ESAB 802	D&H-III CL.
GENERAL PURPOSE MILD STEELS ELECTRODES						
15.	WELD METAL CUT FAST	CUT		E - 901	-----	LOTHERM 801

ABOUT US



COMPANY PROFILE

MR. IKRAMUDDIN a mechanical contractor working in DCM (1980). Through his experience and skills started a business, manufacturing of welding electrodes, to serve best electrode in the market, here BRIGHT ELECTRODES born (1987). After achieving it's success, he opened a new unit named KOTA ELECTRODES(1992) with his talented sons MR. MUZIBUR REHMAN and MR. HAFIZUR REHMAN. Presently we are the ISO : 9001 : 2015 company and our Product Brand Weld Metal E-6013, Weld Metal E-6013S, Weld Metal E-6013SS and Crown Weld are the ISI - Marked Electrodes and our other valuable product are such as Weld Metal E-7018 & Weld Metal E-308L are approved by Lloyd's Register London. We are also maintaining the Indian boiler regulation 1950 for the above products. We are planning have our product approved by many prestigious organization and are continuously striving obtain more.

KOTA ELECTRODES has installed modern and latest technology plant and machinery, quality control equipments and is backed by technical & qualified staff. Dedicated and Dynamic technocrats to look after the production, marketing, quality control and R & D activities.

KOTA ELECTRODES has a large manufacturing capacity, high quality standards and technology comparable to the best quality products both at home and in the international market. We furnish comprehensive line of arc welding electrodes. The range includes a wide selection of Mild Steel Electrodes, Medium & High Tensile Steel Electrodes, Creep Resistant Steel Electrodes, Nickel Steel, Stainless Steel, Hard Surfacing, Cast Iron, Cutting & Gauging Electrodes.

WELDMETAL-6013 MILD STEEL ELECTRODES



APPROVALS

- BUREAU OF INDIAN STANDARDS (ISI MARKED)
- INDIAN BOILERS REGULATION-1950 (IBR)
- LLOYD'S & SHIPPING (LR), LONDON, BUREAU VERITAS NATIONAL TEST HOUSE (NTH)

CLASSIFICATION & COADING

IS814:2004 : ER 4211X

AWS 5.1: E6013

DESCRIPTION

WELD METAL is a medium - Heavy & Rutile coated, general purpose mild steel welding electrodes, specially manufactured for RADIOGRAPHIC quality weld, low spatter, adequate penetration, Easy slag removal (self peeling slag), and finely rippled smooth beads are the special feature of weld metal electrodes. Mechanical properties are very good and consistent. Easy to operates on AC as well as on DC welding power source in all conventional welding position.

APPLICATIONS

Railway Wagons, Boilers, Fire Boxes, Auto Bodies, Ship building, Structural works, Machine Base & Machinery Construction, Pipe Lines, Storage Tanks, Bridges, Building Construction Works and mild steel furniture etc.

CHEMICAL ANALYSIS OF ALL WELD METAL

Carbon%	Manganese%	Silicon%	Sulphur%	Phosphorous%
0.10max	0.42-0.65	0.3max	0.03max	0.03max

MECHANICAL PROPERTIES OF ALL WELD METAL

Yield Strength	Ultimate Tensile Strength	Elongation%	Cvn Impact At - 0°C
330 N/mm ² (Min)	410-550 N /mm ²	26-30%	50-70 Joules

CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

Size(mm):	2.50x350	3.15x350	3.15x450	4.00x350	4.00x450	5.00x450
Amps:	60-90	100-140	100-140	140-200	140-200	180-240

CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

To obtain the best result use welding current with in the recommended range, Store the electrodes in Dry Place.

WELDMETAL-6013-S

MILD STEEL ELECTRODES



APPROVALS

- BUREAU OF INDIAN STANDARDS (ISI MARKED)
- INDIAN BOILERS REGULATION-1950 (IBR)
- LLOYD'S & SHIPPING (LR), LONDON, BUREAU VERITAS NATIONAL TEST House (NTH)

CLASSIFICATION & COADING

IS814:2004 : ER 4211X | AWS 5.1: E6013

APPLICATIONS

Railway Wagons, Boilers, Fire Boxes, Auto Bodies, Ship building, Heavy Structural works, Heavy Machine Base & Machinery Construction, Pipe Lines, Storage Tanks, Bridges, Building Construction Works, Mild Steel furniture etc.

CHEMICAL ANALYSIS OF ALL WELD METAL

Carbon%	Manganese%	Silicon%	Sulphur%	Phosphorous%
0.12max	0.65max	0.40max	0.045max	0.045max

MECHANICAL PROPERTIES OF ALL WELD METAL

Yield Strength	Ultimate Tensile Strength	Elongation%	Cvn Impact At - 0°c
330 N/mm ²	Min 410-550 N /mm ²	24-28%	47 Joules Min

CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

Size(mm):	2.50x350	3.15x350	3.15x450	4.00x350	4.00x450	5.00x450
Amps:	60-90	100-140	100-140	140-200	140-200	180-240

WELDMETAL-7016

LOW HYDROGEN & MEDIUM TENSILE ELECTRODES



CLASSIFICATION & COADING

IS 814:2004 : EB 5424 H3 X | AWS 5.1: E 7016

DESCRIPTION

WELDMETAL – 7016 is a basic coated, low Hydrogen electrodes, Specially design for welding of medium – high tensile ship steels of grade A,D, & E and also the any type of cast steel and specially design for welding of mild steel to cast steel with RADIOGRAPHIC quality welds metals it has a excellent ductility and notch toughness down to minus 30°C which is the greater and the specia characteristics of weld metal-7016 electrodes, Typical hydrogen content is 5ml/100 grms of weld metal deposit cause to save the cracked from weld metal & provide the good strength of the job.

APPLICATIONS

WELDMETAL- 7016, is best to weld the following as : Welding of HT52W and high tensile grade steels, Cast steels, joining to Mild Steel to Cast Steel and used the Buffer layer before hard surfacing on any steel.

CHEMICAL ANALYSIS OF ALL WELD METAL

Carbon%	Manganese%	Silicon%	Sulphur%	Phosphorous%
0.10 max	0.8 - 1.2	0.6 max	0.03 max	0.03 max

MECHANICAL PROPERTIES OF ALL WELD METAL :

Yield Strength	Ultimate Tensile Strength	Elongation%	Cvn Impact At - 0°c
360 N /mm ² min	510 - 650 N /mm ²	26%on5d min	50-90 joules

CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

Size(mm):	2.50x350	3.15x450	4.00x450	5.00x450
Amps:	70-100	120-160	160-220	220-280

WELDMETAL-7018

LOW HYDROGEN & MEDIUM TENSILE ELECTRODES



APPROVALS

INDIAN BOILER REGISTRAR (IBR)

LLOYD’S & SHIPPING (LR),
LONDON, BUREAU VERITAS

CLASSIFICATION & COADING

IS 814:2004 : EB 5426 H3 JX

AWS 5.1: E 7018

DESCRIPTION

WELDMETAL – 7018 is a basic coated, Iron powder low Hydrogen electrodes, Specially design for welding of medium – high tensile steels with RADIOGRAPHIC quality welds metals, weld metal recovery is min. 110% Weld metal has a excellent ductility and notch toughness down to minus 30°C which is the greater and the special cheractistic of weld metal-7018 electrodes, Typical hydrogen content is 5ml/100 gms of weld metal deposit cause to save the cracked from weld metal & provide the good strength of the job.

APPLICATIONS

WELDMETAL- 7018, is best to weld the following as : Storage Tank, Blast furnace Shells, Pressure Vessels, Railway Wagons, Penstocks pipe lines, Boilers, Dynamic loading structures, harden able low alloy steel, equipment subjected to High Stress and Dynamic Loading, equipments require having impact at minus -45°C, thick & heavy plates of carbon & High Tensile steels.

CHEMICALANALYSIS OF ALL WELD METAL

Carbon%	Manganese%	Silicon%	Sulphur%	Phosphorous%
0.10max	1.20-1.60	0.6 max	0.03 max	0.03 max

MECHANICAL PROPERTIES OF ALL WELD METAL :

Yield Strength 360N /mm ² min	Ultimate Tensile Strength 510 -650 N /mm ²	Elongation% 26% on 5d min	Cvn Impact At - 0°c 30 joules min
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CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

Size(mm):	2.50x350	4.00x350	4.00x450	5.00x450
Amps:	70-100	120-160	140-200	200-240

WELDMETAL-8018W2

HIGH TENSILE & CREAP RESISTANCE ELECTRODES



CLASSIFICATION & COADING

IS : 13 95-82 : E 55B-G129 FE

AWS 5.1 : E 8018 W2

DESCRIPTION

WELDMETAL – 8018 W2 is a basic coated, iron powder low Hydrogen electrodes, Specially design for welding of high tensile steels with RADIOGRAPHIC quality welds metals and the weld metal recovery of the job 110-130%. The Weld metal has a excellent ductility and notch toughness down to minus 20°C operates equally well on AC and DC (+), Easy to slag detachability and finely rippled bead. Due to the moisture resistance in the electrode, hydrogen cracking and starting porosities are avoided. So it is nessecery to always use the pre heat elecrodres. Excellent strength and creep resistant at elevated temperature up to 600°C.

APPLICATIONS

WELDMETAL- 8018W2, is best to weld the following as : Welding to creep - resisting steel, Boilers, Pressure vessels, Pipes, Tubes,High Tensile Steels, valves & tanks for storage of transportation of distribution of liquid as propane, butane, ethane, acetylene, carbon di-oxide,weathering steels, chemical plants, oil refineries, power plant etc. It is specially designed for RDSO steel grade for D-Class

CHEMICALANALYSIS OF ALL WELD METAL

Carbon%	Manganese%	Silicon%	Sulphur%	Phosphorous%
0.12 max	0.50-1.30	0.35-0.80	0.04 max	0.03 max
Nickel%	Chromium%	Copper%		
0.40-0.80	0.45-0.70	0.30-0.75		

MECHANICAL PROPERTIES OF ALL WELD METAL :

Yield Strength 360N /mm ² min	Ultimate Tensile Strength 510 -650 N /mm ²	Elongation% 18-22%	Cvn Impact At - 0°c 50 joules
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CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

Size(mm):	2.50x350	4.00x350	4.00x450	5.00x450
Amps:	70-100	120-140	160-200	200-240

WELDMETAL- E308 L

STAINLESS STEEL ELECTRODES



APPROVALS

LLOYD’S & SHIPPING (LR), LONDON,
BUREAU VERITAS

CLASSIFICATION & COADING

IS 5206-83 : E 19.9LR 16
AWS 5.4: E 308L -16

APPLICATIONS

WELDMETAL- E308L suitable for welding of AISI grades steel such as 301L, 302L,304L, 308L, Normal carbon grades steel like 302, 304 & 308 and welding of Clad steels of similar composition, it is also overlays and surfacing applications and also in un-alloys, & low alloy steels. It is specially recommended for extra low carbon stainless steel.

CHEMICALANALYSIS OF ALL WELD METAL

C%	Mn%	Si%	Cr%	Ni%	Mo%	Cu%	S%	P%
0.04 max	0.5-2.5	0 . 9 max	18-21	9-11	0.75 max	0.75 max	0.03 max	0.04 max

MECHANICAL PROPERTIES OF ALL WELD METAL :

Yield Strength	Ultimate Tensile Strength	Elongation%	CVN Impact at 27°C
360 N /mm ² min	510-650 N /mm ²	35-45%	70 Joules Min

CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

Size(mm):	2.50x350	3.15x350	4.00x350	5.00x450
Amps:	60-80	80-110	110-140	150-180

WELDMETAL- E309 L

STAINLESS STEEL ELECTRODES

CLASSIFICATION & COADING

IS 5206-83 : E 23.12 L R 16 | AWS 5.4 : E 309L-16

APPLICATIONS

WELDMETAL – E-309L is a stainless steel electrodes suitable for welding of AISI 309 grade stainless steel in cast or wrought form of Stainless Steel. It is specially design to yield a weld deposit of extra low carbon and 24Cr- 12Ni grade stainless steel.

The weld metal is highly resistant to cracks, corrosion and scaling at high temperature up to 1100°C. Easily and equally operates well on AC or DC(+) in all conventional position. It is easily striking /re-striking,with very little spatter, easily removal of slag with excellent bead appearance with radiographic quality weld.

APPLICATIONS

WELDMETAL- E309L suitable for welding of AISI grades steel as 309L type, straight chrome steel, and welding of Clad side of stainless clad steels, welding of similar and Dis-Similar steel eg. stainless steel to mild steel and also for extra low carbon stainless steel.

CHEMICALANALYSIS OF ALL WELD METAL

C%	Mn%	Si%	Cr%	Ni%	Mo%	Cu%	S%	P%
0.04 MAX	1.5-2.5	0 . 9 MAX	22-25	12-14	0.75 MAX	0.75 MAX	0.03 MAX	0.04 MAX

MECHANICAL PROPERTIES OF ALL WELD METAL :

Yield Strength	Ultimate Tensile Strength	Elongation%	CVN Impact at 27°C
360 N /mm ² min	510-650 N /mm ²	30-40%	70 Joules Min.

CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

Size(mm):	2.50x350	3.15x350	4.00x350	5.00x450
Amps:	60-80	80-110	110-140	150-180

WELDMETAL-E316 L

STAINLESS STEEL ELECTRODES



CLASSIFICATION & COADING

IS 5206-83 : E 19.12.2 LR 16 | AWS 5.4: E 316L-16

DESCRIPTION

WELDMETAL – E-316L is a Rutile type stainless steel electrodes suitable for welding of AISI 316 L,317 L equivalent grade stainless steel. It is specially design to yield a weld deposit of extra low carbon and 20Cr-14Ni grade stainless steel. Presence of molybdenum provides creep resistant to cracks, corrosion and scaling at high temperature up to 850°C. Easily and equally operates well on AC or DC(+) in all conventional position. It is easily striking/re-striking, with very little spatter, easily removal of slag with excellent bead appearance with radiographic quality weld.

APPLICATIONS

WELDMETAL- E316L suitable for welding of AISI grades steel as 316L, 317L type or equivalent grade and also welding for low carbon, high molybdenum Bearing Austenitic stainless steel. Suitable for chemical, Textile, milk plants, fertilizer plant, oil plant and Paints Industries Plants.

CHEMICALANALYSIS OF ALL WELD METAL

C%	Mn%	Si%	Cr%	Ni%	Mo%	Cu%	S%	P%
0.04 max	1.5-2.5	0 . 9 max	17-20	11-14	2-3	0.75 max	0.03 max	0.04 max

MECHANICAL PROPERTIES OF ALL WELD METAL :

Yield Strength	Ultimate Tensile Strength	Elongation%	Cvn Impact At - 0°C
360 N /mm ² min	510 - 650 N /mm ²	30-40%	70 Joules min.

CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

Size(mm):	2.50x350	3.15x350	4.00x350	5.00x350
Amps:	60-80	80-110	110-140	150-180

RECOMMENDATIONS

Re-dry the electrodes at 200°C for one hour, use low current, short arc, and stringer bead technique. maintain inter pass temperature 150°C max. Use stainless steel wire brus for cleaning the weld. use directly from the oven, store the electrodes in Dry Place.

WELDMETAL-350

HARD SURTFACING ELECTRODES



DESCRIPTION

WELD METAL – 350 is a Rutile coated electrodes, develop for the hard surfacing of steel subjected to wear due to impact and abrasion very stable arc and smooth transfer of alloying elements to weld deposit ensure completely crack free sound weld metal. The weld metal is air hardening type and gives 350 to 450 BHN hardness.

APPLICATIONS

WELD METAL-350 is suitable for the welding of such type of steel as : Shovels, Pulveriser rolls, Forging Dies, Gear shaft, Conveyor parts, Crawler Pads, Plough shears, Break Shoes, Gears, Punching Dies, Shears Blades, Sprockets, Wobbles, Crane Wheels, Commas and Pulleys idler wheels

CHEMICALANALYSIS OF ALL WELD METAL

C%	Mn%	Si%	Cr%
0.20- 0.40	0.40 - 0.80	0.6 max	2.50-3.00

MECHANICAL PROPERTIES OF ALL WELD METAL

HARDNESS : ON THREE LAYER DEPOSIT 350-450 BHN

CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

Size(mm):	3.15X450	4.00x450	5.00x450
Amps:	110-140	150-180	180-230

RECOMMENDATIONS

use low current, short arc, and stringer bead technique and avoid high current, store the electrodes in Dry Place. in case of reconditioning of heavily worn out parts give a buffer layer with our weld metal -7018 electrodes.

WELDMETAL- 630

HARD SURFACEING ELECTRODES



DESCRIPTION

WELDMETAL – 630 is a Rutile & Air Hardening type electrodes, develop for the hard surfacing of steel subjected to wear due to impact and abrasion. This electrodes is highly resistant to cracking and exhibits excellent resistance to tempering up to 500°C with very stable arc and smooth transfer of alloying elements to weld deposit ensure completely crack free sound weld metal. The weld metal is air hardening type and gives 550 to 600 BHN hardness is achieving in the first layer.

CHEMICALANALYSIS OF ALL WELD METAL

C%	Mn%	Si%	Cr%
2.50 Min	1.50 max	1.50 Max	3.00-3.50

MECHANICAL PROPERTIES OF ALL WELD METAL :

HARDNESS : ON SINGLE & MULTI LAYER DEPOSIT : 500-650 BHN

CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

Size(mm):	3.15x450	4.00x450	5.00x450
Amps:	110-140	150-180	180-230



WELDMETAL- 650H

HARD SURFACEING ELECTRODES

DESCRIPTION

WELD METAL – 650 H is a basic coated electrodes, develop for the hard surfacing of steel subjected to wear due to impact and abrasion. This electrodes is highly resistant to cracking and exhibits excellent resistance to tempering up to 750°C with very stable arc and smooth transfer of alloying elements to weld deposit ensure completely crack free sound weld metal. The weld metal is air hardening/Alloys hardening type and gives 600 to 650 BHN hardness is achieving in the first layer and also multi layer.

CHEMICALANALYSIS OF ALL WELD METAL

C%	Mn%	Si%	Cr%	Mo%	V%
3.50-4.50	1.50 max	1.50 max	8.0-10.0	0.55 Max	0.40 Max

MECHANICAL PROPERTIES OF ALL WELD METAL :

HARDNESS : ON SINGLE & MULTI LAYER DEPOSIT : 550-650 BHN

CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

Size(mm):	3.15x450	4.00x350	5.00x350
Amps:	110-140	150-180	180-230

WELDMETAL-CAST IRON

CAST IRON ELECTRODES

(Non Machineable)



DESCRIPTION

WELDMETAL – CAST IRON is a medium heavy coated graphite based electrodes which produces non machineable weld on cast iron, it is ideally suited for welding cast iron/cast steels themselves and joining cast steel to mild steel and low alloy steels. The weld display good abrasion resistance.

APPLICATIONS

WELDMETAL is lightly suitable for welding of cast iron, cast iron machine parts, cast iron machines equipments, and all type of general reclamation or repairing works where machinability of the weld is not essential.

CHEMICAL ANALYSIS OF ALL WELD METAL

C%	Mn%	Si%	S%	P%
2.0 - 3.0	0.6 max	5.0-0.6	0.3 max	0.3max

MECHANICAL PROPERTIES OF ALL WELD METAL :

HARDNESS : 200 BHM max

CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

Size(mm):	2.50x350	3.15x350	4.00x350	5.00x350
Amps:	50-70	80-100	100-130	130-170

RECOMMENDATIONS

temperature of the job should be remain constant until welding completed. Intermediate cooling must be avoided. Cool the welded piece under insulation with very slow cooling rate select the smallest size of the electrodes. Deposit thin layer to avoid peen the weld beads worm.

WELDMETAL-FENI (55%)

CAST IRON ELECTRODES

(Machineable)



CLASSIFICATION & COADING

AWS : A5.15 : E Ni Fe Cl

DESCRIPTION

WELD METAL – FeNi is a Nickel – Iron alloy core wire electrodes specially designed for producing high strength joints in malleable cast iron and in nodular cast irons. The weld metal has good ductility and excellent Machinability. Slag is very thin and runs to the side of weld beads.

APPLICATIONS

WELD METAL – FeNi welding of all type of cast iron & steels, joining of cast iron to steels, filling the deep cavities in castings, it can be used on high sulphur and high phosphorous castings.

CHEMICAL ANALYSIS OF ALL WELD METAL

C%	Si%	Ni%	Fe%
0.08-1.50	0.9 max	55-60	40-45

MECHANICAL PROPERTIES OF ALL WELD METAL :

HARDNESS : 220 BHM max

CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

Size(mm):	2.50x350	3.15x350	4.00x350	5.00x350
Amps:	40-70	70-100	100-130	130-170

RECOMMENDATIONS

Use low current, smallest possible size of electrodes and lay small beads to avoid over heating. Peen the weld beads to reduce welding stress. Cooling the welded piece slowly under the insulation. For the best result preheat the job up to 300°C.

WELD METAL PIPE E-6010-P1

MILD STEEL STICK
ELECTRODES (SMAW)



CLASSIFICATION & COADING

SFA /AWS A 5.1 : E6010-P | AWS A 5.1 M: E 4310 | EN :499: 1994 : E 38 2 C21

DESCRIPTION & APPLICATION

WELD METAL-6010 P1, PIPE WELD is a Deep Penetration , Cellulose Coated Electrodes designed for welding in all position for welding of large diameter pipe or pipelines , Especially recommended for Root Pass welding on DC (+) positive polarity in vertical down and vertical up welding positions to using conventional and stovepipe technique. Very good detachability of slag, also within narrow joints .

Apart from its good welding and gap bridging characteristics , its provide a power full arc that deposits well penetrated , smooth root passes with high travel speeds as well as high safety against the formation of piping or hollow bead and undercut.

CHEMICAL ANALYSIS OF ALL WELD METAL

Value	C%	Mn%	Si%	S%	P%	Cr%	Ni%	Mo%	V%
	Max	Max	Max	Max	Max	Max	Max	Max	Max
Required	1.00	1.10	0.30	0.03	0.35	0.30	0.30	0.30	0.08
Typical	0.170	1.18	0.287	0.025	0.032	0.19	0.20	0.28	0.002

MECHANICAL PROPERTIES OF ALL WELD METAL :

UTS (min)		YS (min)		ELONG.%	IMPACT (min)
ksi	Mpa	ksi	Mpa	(L=5d) min	-30°C
60	414	48	331	22%	20J

DEPOSITION DATA :

Diameter	Current	Voltage	Deposition Efficiency%	Number of Electrodes /kg	Burn -off time / electrodes	Depositi rate @90%
2.50x350mm (0.098 X 13.8 in.)	60-80	34V	79%	100	54 sec	0.7 kg/h (1.5 lbs/h)
3.20x350mm (1/8 x 13.8 in.)	75-130	25V	69%	67	57 sec	1.0 kg/h (2.2 lbs/h)
4.00 x350mm (5/32 x 13.8 in.)	140-190	30V	63%	50	58 sec	1.2 kg/h (2.6 lbs/h)
5.00 x350mm (0.197 x 13.8 in.)	160-240	28V	71%	29	65 sec	1.9 kg/h (4.2 lbs/h)

BASE MATERIAL

API SPEC. 5L: A,B,X42,X46,X52,X56,ROOT PASS UP TO X80
Root Pass up to L555NB , L555MB
P235G 1TH, P255G1TH
P355T1, P235T2,P355T2,L210NB,L415NB,L290MB , L415MB
S235JR, S275JR, S235J2G3, S275J2G3,S355J2G3,P235GH, P25GH

WELD METAL PIPE E-7010-P1

MILD STEEL STICK
ELECTRODES (SMAW)



CLASSIFICATION & COADING

SFA /AWS A 5.1 : E7010-P1 | AWS A 5.1 M: E 4910-P1 | EN :4991994 : E42 3 C 2 5

DESCRIPTION & APPLICATION

WELD METAL-7010 – P1, PIPE WELD is a Deep Penetration , Cellulose Coated Electrodes designed for welding in all position for welding of large diameter pipe or pipelines , Especially recommended for hot Passes , filler and cover layers. Highly economical compared with conventional vertical up welding . the penetrating arc characteristics and low slag formation allow good bead control and ensure best performance in all position even with the larger diameter electrodes and high amperage . it can be used in sour gas application i.e.(sulfur most notably can be applied in : fertilizer, asphalt, concrete and batteries

(HIC –TEST acc. NACE TM -02-84 ,) .

CHEMICAL ANALYSIS OF ALL WELD METAL

Value	C%	Mn%	Si%	S%	P%	Cr%	Ni%	Mo%	V%
	Max	Max	Max	Max	Max	Max	Max	Max	Max
Required	0.20	1.20	0.60	0.03	0.03	0.30	1.00	0.50	0.10
Typical	0.170	1.18	0.58	0.03	0.03	0.28	0.89	0.49	0.08

MECHANICAL PROPERTIES OF ALL WELD METAL :

UTS (min)		YS (min)		ELONG.%	IMPACT (min)
ksi	Mpa	ksi	Mpa	(L=5d) min	-30°C -30°C
70	490	60	415	22%	27J 20J

DEPOSITION DATA :

Diameter	Current	Voltage	Deposition Efficiency%	Number of Electrodes /kg	Burn -off time / electrodes	Depositi rate @90%
2.50x350mm (0.098 X 13.8 in.)	60-80	34V	79%	100	54 sec	0.7 kg/h (1.5 lbs/h)
3.20x350mm (1/8 x 13.8 in.)	75-130	25V	69%	67	57 sec	1.0 kg/h (2.2 lbs/h)
4.00 x350mm (5/32 x 13.8 in.)	120-180	30V	63%	50	58 sec	1.2 kg/h (2.6 lbs/h)
5.00 x350mm (0.197 x 13.8 in.)	160-210	28V	71%	29	65 sec	1.9 kg/h (4.2 lbs/h)

BASE MATERIAL

S235JR, S275JR, S235J2G3, S275J2G3,S355J2G3,P235GH, P25GH
L 210-L 415NB , L 90 MB – L-415 MB , P 355 T1 , P235 T2 –P 355T2
P235G 1TH, P255G1TH
ROOT PASS UP TO L 480 MB
API SPEC. 5L: A,B, X-42, X-46, X-52, X-56, X-60 ,ROOT PASS UP TO X-70

WELD METAL PIPE E-8010-P1

MILD STEEL STICK
ELECTRODES (SMAW)



CLASSIFICATION & COADING

SFA /AWS A 5.1 : E8010-P1 | AWS A 5.1 M: E 5510-P1 | EN :4991994 : E46 4 C 1Ni C25

DESCRIPTION & APPLICATION

WELD METAL-8010 P-1 , is a Deep Penetration , Cellulose Coated Electrodes for vertical – down welding of high strength designed for welding in all position for welding of large diameter pipe or pipelines , Especially recommended for hot Passes , filler and cover layers. Weld metal -8010-p1 meets all the exacting demands of the field welding of cross county pipelines extremely well. It is also suitable for welding on DC (+) positive polarity in vertical down and vertical up welding positions to using conventional and stovepipe technique. Very good detachability of slag, also within narrow joints . it ensures highest joint weld quality down to temperature of -40°C. it can be used in sour gas applications (HIC –Test acc. NACE TM -02-84). Test value for SSC-Test are available too.

CHEMICAL ANALYSIS OF ALL WELD METAL

Value	C%	Mn%	Si%	S%	P%	Cr%	Ni%	Mo%	V%
Max	Max	Max	Max	Max	Max	Max	Max	Max	Max
Required	0.20	1.20	0.60	0.03	0.03	0.30	1.00	0.50	0.10
Typical	0.19	1.16	0.55	0.028	0.029	0.28	0.90	0.48	0.098

MECHANICAL PROPERTIES OF ALL WELD METAL :

UTS (min)		YS (min)		ELONG.%	IMPACT (min)	
ksi	Mpa	ksi	Mpa	(L=5d) min	-30°C	-30°C
80	550	67	460	19%	27J	20J

DEPOSITION DATA :

Diameter	Current	Voltage	Deposition Efficiency%	Number of Electrodes /kg	Burn –off time / electrodes	Depositio rate @90%
2.50x350mm (0.098 X 13.8 in.)	60-80	34V	79%	100	54 sec	0.7 kg/h (1.5 lbs/h)
3.20x350mm (1/8 x 13.8 in.)	80-130	25V	69%	67	57 sec	1.0 kg/h (2.2 lbs/h)
4.00 x350mm (5/32 x 13.8 in.)	120-180	30V	63%	50	58 sec	1.2 kg/h (2.6 lbs/h)
5.00 x350mm (0.197 x 13.8 in.)	160-210	28V	71%	29	65 sec	1.9 kg/h (4.2 lbs/h)

BASE MATERIAL

API SPEC. 5L : X- 56, X-60 , X- 65 , X- 70
L 415 NB – L 485 NB , L 415 MB – L 485 MB

WELDMETAL-CUT FAST (CUTTING ELECTRODES)



DESCRIPTION

WELD METAL – CUT ROD, is an welding electrodes with special coating which gives a stable arc during the cutting and piercing processes. The kerfs are clean and narrow. suitable for all position. almost no slag is produced. There is no need of any supplementary gas like oxygen, acetylene or any compressed air, Piercing of metals can be done in all positions.

APPLICATIONS

WELD METAL-CUT ROD, Recommended for the cutting, chamfering, of the various steel such as mild steels, low alloy steels, stainless steels, and cast iron. cuts are fairly smooth.

RECOMMENDED TECHNIQUE

FOR PIERCING : Hold the electrodes at 90* to the job. Apply push in and pull out technique.
FOR CUTTING : Hold the electrodes at 45*, press it on the job and use TO & FRO motion like sawing.

CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

Size(mm):	3.15x350	4.00x350	5.00x350
Amps:	150-200	200-250	250-300

RECOMMENDATIONS

Use correct technique, angle of electrodes and recommended current. RE-DRY the moist electrodes at 100°C for 30 minutes. After striking the arc, swing the arc back & forth as in sawing.

WELDMETAL-GAUG (GAUGING ELECTRODES)

DESCRIPTION

WELDMETAL – GAUG, is an welding electrodes with special coating which gives a stable arc during the cutting and piercing with gauging processes. The wound are clean and narrow. suitable for all position. almost no slag is produced. There is no need of any supplementary gas like oxygen, acetylene or any compressed air, Piercing of metals can be done in all positions.

APPLICATIONS

WELDMETAL-GAUG, Recommended for the chamfering, of the various steel such as mild steels low alloy steels, stainless steels, and cast iron. cuts are fairly smooth.

RECOMMENDED TECHNIQUE

FOR PIERCING : Hold the electrodes at 90* to the job . Apply push in and pull out technique .
FOR CUTTING : Hold the electrodes at 45*, press it on the job and use to & fro motion like sawing.

CURRENT & CONDITIONS : USE AC 50 (OCV) OR DC (+/-)

Size(mm):	3.15x350	4.00x350	5.00x350
Amps:	150-200	200-250	250-300

RECOMMENDATIONS

use correct technique, angle of electrodes and recommended current re-dry the moist electrodes at 100°C for 30 minutes. After striking the arc, swing the arc back & forth as in sawing.

MIG WELDING WIRE

METAL INEART GAS
ELECTRODES WIRE



APPROVALS

Lloyd's & shipping (LR), London

Bureau Veritas

CLASSIFICATION

AWS/SFA 5.18 : ER:70S-6 | IS : 6419 : Grade S4

CHARACTERISTICS & APPLICATIONS

Weld Metal MIG – 70S-6 is a copper coated manganese –silicon bearing wire for MIG welding. Its gives stable arc and minimum spatter under optimum welding conditions. It is design for all positional welding of structural steels pressure Vessels etc. The weld metal is of radiographic quality.

WIRE CHEMISTRY % (TYPICAL)

C%	Mn%	Si%	Cu%	S%	P%
0.10 MAX	1.60 MAX	0.90 MAX	0.20 MAX	0.02 MAX	0.02 MAX

ALL WELD METAL MECHANICAL PROPERTIES

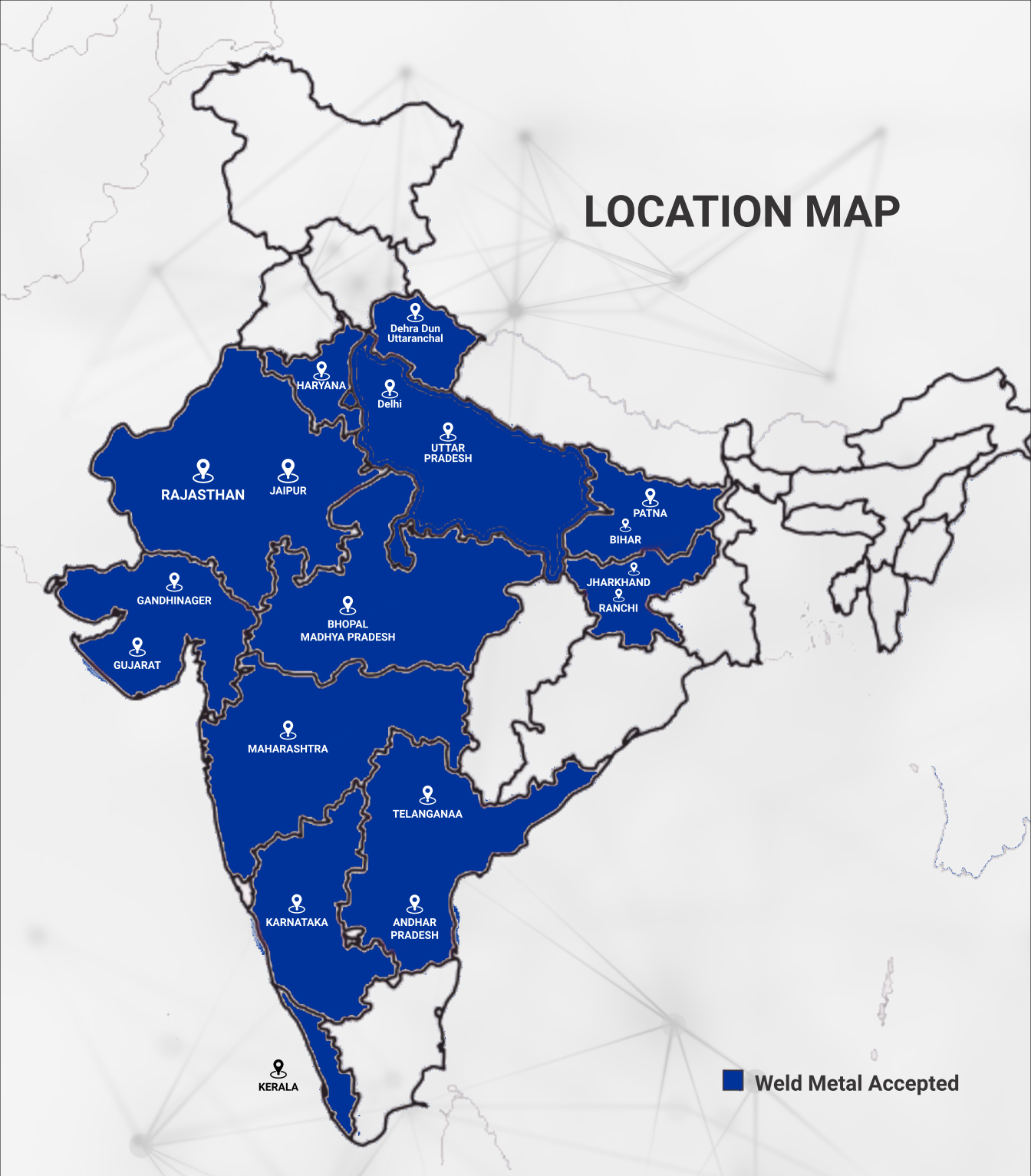
(Under CO2 Shielding Typical)

UTS	YS	Elongation %	CVN Impact at -29°C
N/mm ²	N/mm ²	GL=4d	
520	440	26	40

SIZE AVAILABLE (MM)

0.80 1.00 1.20 1.60 2.00

LOCATION MAP



Weld Metal Accepted

