

# MALU ELECTRODES PVT. LTD.

An ISO 9001:2008 Certified Company

## Mangalam®

## HIGH-TIDE®





Sr. No.	NAME AWS/SFA 5.1 1S 814	Description & Application	Size (mm)	Current (Amp)	Packing Specification	
					Pieces (Per Pack)	Pieces (Per Carton)
01	MANGALAM® 6013X E6013 ER4211X	All position medium coated rutile electrode with excellent usability characteristics for producing radiographic quality welds. Can be used for pipes & Tubes up to 12 mm thickness.	2.50 x 350 3.15 x 350 / 450 4.00 x 450 5.00 x 450	80 - 110 90 - 130 140 - 190 170 - 230	125 90 60 40	1500 1080 720 480
02	HIGH TIDE 6013 E6013 ER4211X	All position medium coated rutile electrode with excellent usability characteristics for producing radiographic quality weld. Can be used for pipes & Tubes up to 12 mm thickness.	2.50 x 350 3.15 x 350 4.00 x 450 5.00 x 450	80 - 110 90 - 130 140 - 190 170 - 230	125 90 60 40	1500 1080 720 480
03	MANGALAM® E7016 EB5426H3X	Basic coated low hydrogen electrode for giving radiographic quality for joining high thickness joints subjected to restraint. Suitable for pipe welding application. Metal recovery around 100 %.	2.50 x 350 3.15 x 450 4.00 x 450 5.00 x 450	60 - 90 100 - 140 140 - 180 190 - 250	180 130 85 50	720 520 340 200
04	MANGALAM® E7018 EB5426H3JX	Basic coated low hydrogen iron powder all position electrode for giving radiographic quality welds subjected to restraint. Resists hot & cold cracking. weld is strong, ductile & tough. Suitable for components subjected to dynamic loading. Can be used for pressure parts particularly in thermal plants. Metal recovery 115%.	2.50 x 350 / 450 3.15 x 350 / 450 4.00 x 450 5.00 x 450	80 - 100 110 - 130 150 - 200 190 - 250	150 100 70 45	600 400 280 180
05	MANGALAM® E7018-1 EB5629H3JX	Basic coated low hydrogen iron powder all position electrode for giving radiographic quality welds resistant to hot & cold cracking. Weld is strong, ductile & tough down to -45 °C. Suitable for components subjected to dynamic loading & pressure parts.	2.50 x 350 3.15 x 450 4.00 x 450 5.00 x 450	80 - 110 100 - 135 140 - 180 180 - 250	150 100 70 45	600 400 280 180
06	MANGALAM® SS6013XX E6013 ER4222X	A heavy coated all position rutile electrode for depositing heavier welds. Would be useful for application where slower cooling rates are required.	2.50 x 350 3.15 x 350/450 4.00 x 450 5.00 x 450	60 - 90 100 - 140 140 - 190 190 - 250	175 105 65 40	700 420 260 160
07	MANGALAM® SUPREME 6013XX E6013 ER4212X	A medium coated all position rutile electrode suitable for major structural works. Would be useful for application where radiographic quality is required.	2.50 x 350 3.15 x 350 3.15 x 450 4.00 x 450 5.00 x 450	60 - 90 90 - 130 100 - 140 140 - 190 190 - 250	225 130 130 85 55	900 520 520 340 220
08	MANGALAM® VD 6013 E 6013 ER4211X	A Rutile coated all position electrode particularly designed for vertical down welding. Ideally suited for fillet welds in vertical down position and Tee joints.	2.50 x 350 3.15 x 350 4.00 x 450 5.00 x 450	80 - 110 90 - 130 140 - 190 170 - 230	125 90 60 40	1500 1080 720 480
09	MANGALAM® CUTRODE	Used for cutting / Piercing Steel Plate. Gives a forceful arc that shears base material..	3.15 x 350/450 4.00 x 450 5.00 x 450	160 - 180 200 - 250 250 - 300	85 45 30	1020 540 360

**MANGALAM CAST IRON ELECTRODES**

Sr. No.	Type	Application	Size (mm)	Current (Amp)	Packing Specification	
					Weight	Weight
01	MANGALAM® CAST IRON ELECTRODES	Mangalam Cast Iron electrode is all position cast iron electrodes depositing air hardening type for non machinable cast iron and joining mild steel and low alloy steels where 160-250 BHN Hardness is required. Welds are normally non machinable, crack resistant and free from porosity. Repairing of foundry defects, rusted parts etc for economy welding of seal castings, sealing of cracks in castings.	2.50 x 350 3.15 x 350 / 450 4.00 x 350 / 450	60 - 90 90 - 120 120 - 140	2 Kg 2 Kg 2 Kg	24 Kg/ 12 Pkt 24 Kg/ 12 Pkt 24 Kg/ 12 Pkt

**APPROVALS**




## STAINLESS STEEL ELECTRODE

Sr. No.	NAMES AWS/SFA 5.4	Description & Application	Size (mm)	Current (Amp)	Packing Specification		
					Size (mm)	Weight (Per Pkt.)	Weight (Per Box)
01	MANGALAM® E308L-16	Rutile type extra low carbon electrode for welding of AISI 304L, 308L, 321 & 347 Stainless Steel. Weld metal has good ductility & resistant to cracking & oxidation.	2.00 x 300	40-70	2.00 x 350	2 kg	10kg./5pkt.
			2.50 x 350	45-85	2.50 x 350	2 kg	10kg./5pkt.
			3.15 x 350	85-115	3.15 x 350	2 kg	10kg./5pkt.
			4.00 x 350	100-140	4.00 x 350	2 kg	10kg./5pkt.
			5.00 x 350	140-180	5.00 x 350	2 kg	10kg./5pkt.
02	MANGALAM® E309L-16	Rutile type electrode for welding of AISI 309L Stainless Steel has got excellent resistance to intergranular corrosion. Used as Buffer layer before depositing 410 & 430 weld metal.	2.50 x 350	50-70	2.50 x 350	2 kg	10kg./5pkt.
			3.15 x 350	70-100	3.15 x 350	2 kg	10kg./5pkt.
			4.00 x 350	100-140	4.00 x 350	2 kg	10kg./5pkt.
			5.00 x 350	140-180	5.00 x 350	2 kg	10kg./5pkt.
03	MANGALAM® E310-16	Rutile type basic coated all position welding electrode for welding of AISI 310 containing 25% chromium and 20% Nickel, low spatter loss, smooth and uniform bead having easy slag removal properties. The weld deposited has excellent resistant to heat and oxidation which is very useful in fabricating furnace components, burners, heat treatment pots & baskets.	2.50 X 350	40 - 80	2.50 X 350	2 kg	10kg./5pkt.
			3.15 X 350	60 - 100	3.15 X 350	2 kg	10kg./5pkt.
			4.00 X 350	90 - 140	4.00 X 350	2 kg	10kg./5pkt.
			5.00 X 350	130 - 180	5.00 X 350	2 kg	10kg./5pkt.
04	MANGALAM® E316L-16	Rutile type basic coated all position welding electrode for welding of AISI 316, 161, 317 grade stainless steel. Giving very smooth and ribbed bead. Slag control and removal is very easy. The weldmetal has a superior resistance to pitting corrosion. Can be used in textile, paper, petrochemical & pharmaceutical industries.	2.50 X 350	40 - 80	2.50 X 350	2 kg	10kg./5pkt.
			3.15 X 350	60 - 100	3.15 X 350	2 kg	10kg./5pkt.
			4.00 X 350	90 - 140	4.00 X 350	2 kg	10kg./5pkt.
			5.00 X 350	130 - 180	5.00 X 350	2 kg	10kg./5pkt.

## HARD FACING ELECTRODES

Sr. No.	Type	Application	Size (mm)	Current (Amp)	Packing Specification	
					Pieces (Per Pack)	Pieces (Per Pack)
1.	MANGALAM® HF 250 R	Shaft, Journals, Gear Teeth	3.15 x 450	100 - 140	130	520
			4.00 x 450	140 - 180	85	340
			5.00 x 450	180 - 220	50	200
2.	MANGALAM® HF 350 R	Similar applications requiring higher hardness.	2.50 x 350	70 - 100	225	900
			3.20 x 450	100 - 140	130	520
			4.00 x 450	140 - 180	85	340
			5.00 x 450	180 - 220	50	200
3.	MANGALAM® HF 650 R	Crusher jaws, Bucket Teeth, Pulveriser Hammer, Cement Mill, Cane Cutting Knives & Hammer.	2.50 x 350	70 - 90	225	900
			3.15 x 450	100 - 140	130	520
			4.00 x 450	140 - 180	85	340
			5.00 x 450	180 - 210	50	200
4.	MANGALAM® HF 250 LH	Shaft, Journals, Gear Teeth	3.15 x 450	100 - 140	130	520
			4.00 x 450	140 - 180	85	340
			5.00 x 450	180 - 220	55	220
5.	MANGALAM® HF 350 LH	Similar application requiring higher hardness.	2.50 x 350	70 - 100	225	900
			3.15 x 450	100 - 140	130	520
			4.00 x 450	140 - 180	85	340
			5.00 x 450	180 - 220	55	220
6.	MANGALAM® HF 650 LH	Crusher jaws, Bucket Teeth, Rock crusher Hammer, Ploughs Cane cutting Knives & Hammers Cement Mill Hammers.	2.50 x 350	70 - 90	225	900
			3.15 x 450	100 - 140	130	520
			4.00 x 450	140 - 180	85	340
			5.00 x 450	180 - 210	55	220
7.	MANGALAM® MANGAN	Rock Crushing Jaws & Crusher Mantel, Manganese Steel rail Points and Crossing Dredger Bucket Teeth & Cement Grinder teeth, bulldozer Teeth, Manganese Steel Casting etc.	3.15 x 350/450	100 - 140	105	420
			4.00 x 350/450	140 - 190	65	260
			5.00 x 450	180 - 220	40	160

**Mangalam-250**  
WELDING ELECTRODES

**Mangalam-350**  
WELDING ELECTRODES

**Mangalam-650**  
WELDING ELECTRODES

**Mangalam-E 6013**  
WELDING ELECTRODES  
VERTICAL DOWN

**Mangalam-E 7016**  
WELDING ELECTRODES

**Mangalam-E 7018-1**  
WELDING ELECTRODES

**Mangalam-E 7018**  
WELDING ELECTRODES

**Mangalam-ss**  
WELDING ELECTRODES

**Mangalam-SUPREME**  
WELDING ELECTRODES

**HIGH-TIDE**  
WELDING ELECTRODES

**Mangalam**  
STAINLESS STEEL WELDING ELECTRODES  
VACUUM - PACK 308L-16

**Mangalam**  
STAINLESS STEEL WELDING ELECTRODES  
VACUUM - PACK 309L-16