



# EXCEL 13S

## MILD STEEL ELECTRODE

**CLASSIFICATION** : IS : 814-2004 : ER 4211 X  
AWS/A 5.1 : E 6013

**APPROVALS** : BIS, DNV, IRS, CIB (Pb.), LRS

**CHARACTERISTICS** : A rutile type medium-heavy coated electrode specially manufactured for radiography quality welds. Low spatter, adequate penetration, easy slag removal and finely rippled beads are the special features of EXCEL-13S electrodes. Mechanical properties are very good and consistent.

**APPLICATIONS** :

- Storage Tanks
- Boilers
- Railway Wagons
- Bridges
- Fire Boxes
- Structural Fabrication
- Ship Construction
- Pipe Lines
- Machine Bases
- Truck & Bus Bodies

**RECOMMENDATIONS** : Keep the electrodes in a dry place. To obtain best results, use welding current within recommended range. Moist electrodes should be re-dried at 100°C for 30 minutes.

**CHEMICAL ANALYSIS OF WELD METAL (%)** :

	C	Mn	Si	S	P
	0.10 max	0.35-0.70	0.40 max	0.035 max	0.035 max

**MECHANICAL PROPERTIES OF WELD-METAL (AS PER IS:814-2004)** :

	Yield Strength	Ultimate Tensile Strength	Elongation (GL=5d)	Reduction in area	CVN Impact Values at 27°C/0°C
	Kg/mm <sup>2</sup>	Kg/mm <sup>2</sup>	(%)	(%)	Joules
	42-47	47-56	26-30	50-70	70/50
	N/mm <sup>2</sup>	N/mm <sup>2</sup>			Kgf.m (min.)
	410-460	460-550			7/5

**CURRENT CONDITIONS : USE AC(50V) OR DC (±)**

Size (mm)	2 x 300	2.5 x 350	3.15 x 350	4.0 x 350	5.0 x 450	6.3 x 450
			3.15 x 450	4.0 x 450		

Range (Amps.)	50-70	70-100	100-140	140-180	180-250	240-280
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