

Product description

MMA electrode with rutile metal powder type flux made on carbon steel core wire. Electrode coating is designed to give sound porosity-free deposits coupled with smooth operation. Recovery is about 200% with respect to core wire, 65% with respect to whole electrode.

Specifications

DIN 8555 E10-UM-65-G
BS EN 14700 E Fe16

Materials to be welded

Surfacing of mild and low alloy steels.

Applications

This electrode gives a high alloy complex chromium carbide deposit to produce very high hardness, resistance to extreme abrasion and thermal stability up to 600°C, coupled with reasonable corrosion resistance. The deposit is not machinable but can be ground if necessary.

Used for equipment in contact with hot metal, slag and hot gases at temperatures in excess of 600°C. For applications requiring high resistance to thermal shock one of the cobalt based Cobstel types should be considered. For ambient temperature applications Methard 850 or 950 (E-55) are more economic alternatives.

Used for surfacing **slag crushers, ore processors, furnace guides, rollers and moulds**, in the **steel, ceramic, cement, pottery and glass** industries.

Microstructure

In the as-welded condition the microstructure consists of an austenitic alloy matrix (bulk hardness 500-600HV) and a large proportion of chromium and complex alloy carbides (1500-2000HV).

Welding guidelines

Preheat to 200-450°C and slow cool to minimise surface cracking. Use a stringer bead or wide weave for maximum coverage.

Build-up is normally limited to 2 layers (maximum 3). Surface crazing or cracking (checking) is normal but can be minimised by preheating and slow cooling. For large build-ups or any surfacing on 13% Mn steels use a buffer layer of a 307 type (data sheet E-21).

Composition (weld metal wt %)

	C	Mn	Si	Cr	Mo+Nb+V+W
typ	4.5	0.2	1	28	12

All-weld mechanical properties

Typical hardness:

	HRC	HV
As welded	62-66	750-850

These values are for guidance only actual hardness is dependent on base material, number of layers, cooling rate and welding conditions.

Parameters

DC +ve or AC (OCV: 70V min)



	3.2	4.0	5.0
∅ mm			
min A	110	150	190
max A	160	220	280

Packaging data

	3.2	4.0	5.0
∅ mm			
length mm	380	380	450
kg/carton	12.6	12.6	15.3
pieces/carton	183	114	81

Storage

3 hermetically sealed ring-pull metal tins per carton, with unlimited shelf life. Direct use from tin is satisfactory.

For electrodes that have been exposed:

Redry 150-250°C/1-2h to restore to as-packed condition. Maximum 350° C, 3 cycles, 10h total.

Storage: Recommended ambient storage conditions for opened tins (using plastic lid): < 60% RH, > 18°C.

Fume data

Fume composition, wt % typical:

Fe	Mn	Cr	Mo	V	F	OES (mg/m ³)
25	4	12	2	0.5	3	0.4