

Wearshield® MM 40

Hardfacing electrode

Classification

DIN 8555-83 : E1-UM-400-G*

* Nearest classification

General Description

An all position rutile/basic coated electrode that produces a machinable martensitic deposit

Designed for operator appeal and weld quality having excellent arc characteristics

Good restriking and low spatter

The electrode can be used with the drag or contact welding technique as well as out of position

Application

Wearshield MM 40 produces a crack-free wear resistant deposit with a hardness of 42-45 HRC depending on upon material dilution and number of layers. It is particularly suitable for applications involving sliding, rolling and metal to metal wear, combined with resistance to mild abrasion.

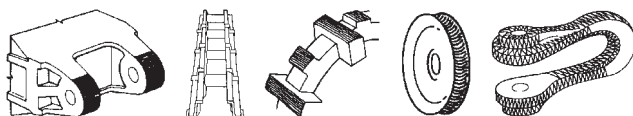
Typical applications include:

Buckets links, bucket bases

Guide rolls

Tractor rolls

Crane wheels



Mechanical properties, all weld metal

	Typical hardness values
1 Layer	39-42 HRC (360-400 HB)
2 Layer	40-45 HRC (375-425 HB)
3 Layer	42-45 HRC (400-425 HB)

Welded on Mild Steel Plate

Packaging, available sizes and identification

	Diameter (mm)	3.2	4.0	5.0
	Length (mm)	350	350	450
Unit: Box	Pieces / unit (nominal)	66	43	22
	Net weight (kg)	2.5	2.5	2.5

Identification

Imprint: Wearshield MM 40

Tip colour: red

Wearshield® MM 40: rev. EN 15

Wearshield® MM 40

Additional information

When welding with Wearshield MM40 the bead width should be limited to 12 - 20mm for all electrode diameters when using a weaving technique. For edge and corner build-up narrow stringer beads are preferred.

A preheat between 150-250°C is necessary to prevent cracking in situations of high restraint and/or heavy thicknesses.

The deposited weld metal is machinable, therefore, tempering and annealing are not generally necessary but may be carried out to decrease hardness and increase toughness. Annealing at 760°C for several hours and slow cooling followed by tempering at 520°C will reduce the hardness. This deposit can subsequently be flame hardened or furnace hardened.

The build up is usually limited to 4 layers.

Welding positions



ISO/ASME PA/1G PC/2G PF/5G up

Current type

AC / DC electr. +

Chemical composition (w%), typical, all weld metal

C	Mn	Si	Cr	Mo
0.2	0.5	1.3	3.4	0.5

Structure

In the as welded condition the microstructure consists mainly of martensite

Calculation data

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time - per electrode at max. (s)*	Energy E(kJ)	Dep.rate Current H(kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal B	kg Electrodes/ kg weldmetal 1/N
3.2 x 350	90 - 130	DC+	71	175	1.3	38.6	41	1.57
4.0 x 350	140 - 180	DC+	83	312	1.5	56.6	28	1.61
5.0 x 450	170 - 220	DC+	108	640	2.5	114.1	13	1.50

* stub end = 35 mm

Complementary products

Flux cored wire Lincore® 40-0