

Hardfacing electrode

Classification

DIN 8555-83 : E10-UM-45-GPZ

General Description

A heavy coated rutile electrode that produces a primary austenite-chrome carbide eutectic weld deposit

Designed for operator appeal and weld quality

Excellent arc characteristics, good restriking, complete slag coverage and low spatter

The electrode coating permits the use of a light drag or contact welding technique

Application

Wearshield 44 produces an abrasion and impact resistant deposit with a hardness of 42-48HRc.

The intended use of Wearshield 44 is to provide a combination of abrasion and impact resistance at service temperatures up to 600°C.

Typical applications include:

- Ingot tongs
- Scraper blades
- Rolling mill guides
- Screw flights
- Coal mining chutes
- Plough shares, scraper blades and cultivator sweeps
- Pulleys and chain links



Mechanical properties, all weld metal

Typical hardness values

1 Layer	42 HRc
2 Layer	49 HRc
3 Layer	48 HRc

Welded on Mild Steel Plate

Packaging, available sizes and identification

	Diameter (mm)	3.2	4.0	4.8
	Length (mm)	355	355	355
Unit: Box	Pieces / unit (nominal)	59	-	2.7
	Net weight (kg)	2.5	2.5	2.5

Identification Imprint: Wearshield 44

Tip colour: none

Wearshield® 44: rev. EN 15

Wearshield® 44

Additional information

When welding with Wearshield 44 the bead width should be limited to 12-20mm for all electrode diameters when employing a weaving technique. For edge and corner build up narrow stringer beads are preferred.

Preheating is not necessary when surfacing austenitic substrates such as stainless steels and manganese steels, although the interpass temperature should be limited to about 260°C for manganese steels. For low alloy and carbon steels a preheat of 200°C is usually sufficient, but is dependent on base material thickness and chemistry.

The deposited metal is not machinable by conventional methods although the deposit can be shaped by grinding.

The build up is usually limited to 2-3 layers.

Wearshield 44 can be deposited on small components without check cracking, however, check cracking may not be preventable on larger sections.

Wearshield 44 may also be used to overlay cast irons, however, this is not possible without check cracking. To minimise the risk of spalling, closely spaced check cracks are preferred. These are obtained by employing stringer bead welding procedures.

Welding positions



ISO/ASME PA/1G PC/2G

Current type

AC / DC electr. +

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

C	Mn	Si	Cr	Mo
2.0	0.16	0.9	24.2	2.5

Structure

In the as welded condition the microstructure consists of primary austenite with an interdendritic eutectic of austenite and chromium carbides

Calculation data

Sizes Diam. x length (mm)	Current range (A)
3.2 x 355	120-160
4.0 x 355	150 - 220
4.8 x 355	190 - 270

Complementary products

There is no flux cored equivalent to Wearshield 44. The closest product is Lincore® 50, however, the deposit varies significantly to Wearshield 44.