

# Wearshield® MI (e)

## Hardfacing electrode

### Classification

AWS A5.13-00 : EFe6  
DIN 8555-83 : E6-UM-60-GPS

### General Description

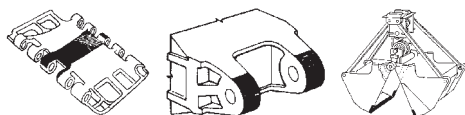
A basic coated electrode that produces a martensitic deposit with a considerable amount of retained austenite  
Designed for operator appeal and weld quality  
Excellent arc characteristics, good restriking and low spatter

### Application

Wearshield MI produces a wear resistant martensite/austenite deposit with a hardness of 45-58 HRC. It can be used to surface a variety of carbon, carbon manganese and alloy steels. The martensite/austenite deposit makes Wearshield MI particularly suitable for applications involving impact, metal to metal wear and mild abrasion such as by limestone. This deposit tends to cross check.

Typical applications include:

Dipper lips  
Construction machinery  
Earth moving equipment  
Rock crushers  
Hammer mills  
Conveyor screws  
Ditcher teeth  
Agricultural equipment



### Mechanical properties, all weld metal

|         | Typical hardness values |
|---------|-------------------------|
| 1 Layer | 45-55 HRC               |
| 2 Layer | 50-58 HRC               |

Welded on Mild Steel Plate

### Packaging, available sizes and identification

|           |                         |     |     |     |     |
|-----------|-------------------------|-----|-----|-----|-----|
|           | Diameter (mm)           | 2.5 | 3.2 | 4.0 | 5.0 |
|           | Length (mm)             | 350 | 350 | 350 | 450 |
| Unit: Box | Pieces / unit (nominal) | 117 | 69  | 38  | 25  |
|           | Net weight (kg)         | 2.5 | 2.5 | 2.5 | 2.5 |

### Identification

Imprint: Wearshield MI(e)

Tip colour: violet

Wearshield® MI (e): rev. EN 15

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## Additional information

A preheat and interpass temperature of over 200°C is preferred to help reduce check cracking and avoid chipping and fragmentation.

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

The Wearshield MI deposit tends to cross check and is therefore usually limited to 2 layers to avoid chipping and fragmentation.

Wearshield MI cannot be cut by the oxy-fuel processes. Plasma arc and air-carbon arc processes can be used to both cut and gouge the weld deposit.

## Welding positions



ISO/ASME PA/1G PB/2F PC/2G PF/3G up PE/4G PF/5G up

## Current type

AC / DC electr. -

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

| C   | Mn  | Si  | Cr |
|-----|-----|-----|----|
| 0.5 | 0.4 | 1.8 | 9  |

## Structure

In the as welded condition the microstructure consists of a mixed structure of martensite and austenite.

## Calculation data

| Sizes<br>Diam. x length<br>(mm) | Current<br>range<br>(A) | Current<br>type | Arc time<br>- per electrode at max. Current<br>(s)* | Energy<br>E(kJ) | Dep.rate<br>H(kg/h) |
|---------------------------------|-------------------------|-----------------|---|-----------------|---------------------|
| 2.5 x 350                       | 60 – 70                 | AC/DC E-        | -   | -               | 7.6                 |
| 3.2 x 350                       | 70 – 120                | AC/DC E-        | -   | -               | 1.10                |
| 4.0 x 450                       | 110 – 150               | AC/DC E-        | -   | -               | 1.45                |
| 5.0 x 450                       | 150 - 200               | AC/DC E-        | -   | -               | 2.00                |

\* stub end = 35 mm

## Complementary products

Solid wire LNM 420 FM.