

# ES 650

Type Basic

SMAW

E 6-UM-60

**ESWECO**  
*The Art of Welding*

## Description

ES 650 is our basic coated electrode for wear resistant surfacing parts of steel, cast steel and high Mn-steel, subject to abrasion, metal-to-metal wear, impact and/or compression stresses.

Deposit weld metal has a martensitic structure, hardness of pure weld deposit approx. 600HB. After welding the deposit can be machined by grinding only.

ES 650 is particularly suitable under conditions of heavy abrasion and friction, combined with impact.

Ideally suitable for applications involving rolling, sliding and metal-to-metal wear. Applications are universal but typical for hardfacing parts e.g. agricultural, earth moving and stone crushing industry, hardfacing crane and mine car wheels, sprockets and gear teeth, skip guides, dredger buckets, scrapper blades, transfer tables, cable sheaves, tractor and shovel parts, dragline buckets, conveyor chains, hammer heads, clutch jaws.

## Current

DC+, AC OCV 65 V



## Classifications

EN 14700	E Fe8
DIN 8555	E 6-UM-60

## Typical all weld metal composition, %

C	Si	Mn	Cr	Mo	Nb
0.05	0.7	1.3	6.9	1.18	0.5

## Typical mech. Properties all weld metal

Weld metal hardness, a w	58-63
HRC(first layer on mild steel, no preheat)	
Machinability	Grinding only
Impact resistance	Excellent
Abrasion resistance	Excellent

## Tempering resistance

Temp°C/1h	HRC
200	54
300	51
400	51

## Welding parameters

Diameter,mm	Length,mm	Welding current, A	Arc voltage,V
2.5	350	60-80	21
3.2	350	80-110	21
4.0	450	130-170	21
5.0	450	160-200	22