Hardfacing cored wire

Classification

DIN 8555-83 : MF6-GF-50-GP

General description

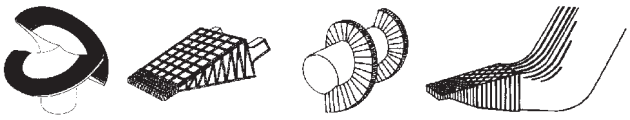
Lincore 50-O is a self shielded, open arc, flux cored tubular electrode that produces a primary austenite and austenite-carbide eutectic weld deposit. The arc characteristics are excellent producing minimal spatter and good slag removal. Although, Lincore 50 is primarily designed for the open arc operation, it may be used with a neutral flux for conditions requiring spatter elimination and removal of arc glare. The as welded deposit usually check cracks.

Application

Lincore 50 produces an abrasion and impact resistant deposit with a hardness range of 34-56HRc depending on base metal chemistry, material dilution and number of layers. The combination of abrasion and impact resistance coupled with hot forging properties makes Lincore 50 particularly suitable for applications involving transportation of abrasive media under heavy variable loading.

Typical applications include:

Dipper and dredge cutter teeth
Rock crusher hammers and mill hammers
Rock crushers and crusher mantles
Screw flights
Coal mining cutters
Conveyor buckets and rolls
Plough shares, scrapper blades and cultivator sweeps
Truck chain and gears
Dragline buckets, links and chains



Mechanical properties, all weld metal

	Typical hardness values
Layer 1	34-41 HRc (320-380HB)
Layer 2	44-53 HRc (415-530HB)
Layer 3	48-56 HRc (460-584HB)

Welded on Mild Steel Plate (12mm)

Packaging, available sizes and indentification

Unit type	Net weight/unit (kg)	Diameter (mm) 1.1	1.6	2.0	2.8
Wire reel 22RR	10			X	
Wire reel 22RR	11.34	X	X		
Wire reel 50C	22.68	X	X	X	X

Additional information

All work-hardened base material and previously deposited hardfacing material should be removed prior to applying a new deposit, since such areas are prone to embrittlement and possible cracking. Areas that contain irregularaties such as cracks and deep gouges can be repaired locally using Wearshield BU30 or Wearshield 15CrMn prior to hardfacing with Lincore 50.

Preheat 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 carbon steels a preheat of 200°C is usually sufficient, but is dependent on material thickness and chemistry.

The weld metal is not machinable by conventional methods although the deposit can be shaped by grinding. Lincore 50 cannot be cut by the oxy-fuel processes. Plasma arc and air-carbon arc processes can be used to both cut an gouge the weld deposit. Preheat temperatures similar to those for welding may be necessary to prevent cracking along the cut edge.

Lincore 50 may also be used in corrosive, cavitation and erosion situations such as the chemical, paper mill, food processing industry, glass manufacturing, power generation and tool manufacturing.

Welding positions

ISO/ASME PA/1G

Current type

DC +

Chemical composition (w%) typical, all weld metal

C	Mn	Si	Cr	Mo	Al
2.2	1.2	1.0	11.0	0.5	0.6

Structure

In the as welded condition the microstructure consists mainly of primary austenite with an austenite-carbide eutectic

Calculation Data

Diameter (mm)	Wire Feed Speed (m/min)	Current (Amps)	Arc Voltage (volts)	Deposition Rate (kg/h)
1.1	5.1 to 15.2	120 - 250	20 - 28	1.9 - 5.8
1.6	3.8 to 8.9	175 - 365	23 - 33	2.7 - 7.9
2.0	3.2 to 6.4	210 - 380	27 - 23	3.4 - 6.8
2.8	2.0 to 3.3	315 - 450	26 - 29	3.9 - 6.4

Complementary products

There is no direct equivalent to Lincore 50 although Wearshield® ABR and Wearshield® 44 are the nearest.