



LOTHERME HF- 20



Composite submerged arc welding wires recommended with Lotherme SAF-704 flux for re-building of steel mill rolls

Characteristics & Applications:

LOTHERME HF-20 is a composite SAW wire of 1-2% Cr, 2-3% Ni, low carbon with controlled addition of Silicon & Molybdenum for buffer layer deposits. The weld metal has excellent bonding property, resistance to solidification cracking and is easily machinable.

LOTHERME SAF-704 is an agglomerated basic flux, shall be re-dried at 350oC before use.

LOTHERME HF-20 wire is used for buffer layer prior to hard-surfacing of higher carbon (>0.25%) CC rolls and equivalent grade steel rolls. Single layer deposit is recommended as buffer layer.

For surface re-building, the wire can be used on multi-layers welding.

For hard-surfacing, the deposit is followed by 2 to 3 layers of LOTHERME HF-45 or LOTHERME HF-55 wire based on the requirement. In case of low carbon content (<0.25%) of the rolls, buffer layer may be avoided. The surface shall be machined, cleaned & be made free from cracks prior to weld deposition. The job/ roll shall be preheated at 250-350°C prior to welding and similar inter-pass temperature shall be maintained during welding.

For hard-surface layer deposition, post-weld stress relief heat treatment shall be done at 350-450°C for 5 to 8 hrs depending on the job.

Typical Chemical Composition of All Weld Metal (%):

Element	C	Mn	Si	Cr	Ni	Mo	N
Typical	0.08 max	0.50-1.20	0.60 max	1.2-2.0	2.0-3.0	0.40-0.80	0.06-0.15

Typical Mechanical Properties of All Weld Metal (after SR heat treatment at 400°C for 8 hrs) :

Weld Metal hardness after 3rd layer on MS Plate with LoTherme SAF-704 (AW) - **23-28 HRC**

1st layer LoTherme HF-20, 2nd layers LoTherme HF-45 with LoTherme SAF-704 Flux - **40-45 HRC**

1st layer LoTherme HF-20, 2nd layers LoTherme HF-55 with LoTherme SAF-704 Flux - **50-54 HRC**

Current and Packing Data: DC (+):

Size (mm)	Current (A)	Volt.(V)	Linear travel speed, mm/min.
3.2	350-450	28-30	400-500

Packaging:

1. Wire size is 3.2mm. The wire is supplied in a layer wound 25 kg metallic ring packed in a shrink-wrapped corrugated box.
2. Wire is also available in 200/250kg card-board drum packing on a pallet.