High Chrome Iron (HiCr-Iron)

Field of Application

Mill Type	Position
Hot Strip Mill	Early Finishing Stands Work Roll
Plate Mill	Work Roll

Mechanical Properties

Hardness Range	65-80 ShC
Tensile Strength	> 700 MPa
Bending Strength	> 1000 MPa
Young's Modulus	approx. 225.000 MPa

The microstructure of the high chromium cast iron consists of a high amount of chromium carbides (M_7C_3) embedded in a matrix of tempered martensite. This grade shows very good wear and oxidation resistance.

Further alloying of special carbides, like vanadium or molybdenum, significantly increases hardness and wear resistance.

These elements either dissolve into the eutectic M_7C_3 (or $M_{23}C_6$) carbides or precipitate as extremely hard MC or M_2C carbides, finely dispersed throughout the structure which refines the material texture and increases hardness and wear resistance.

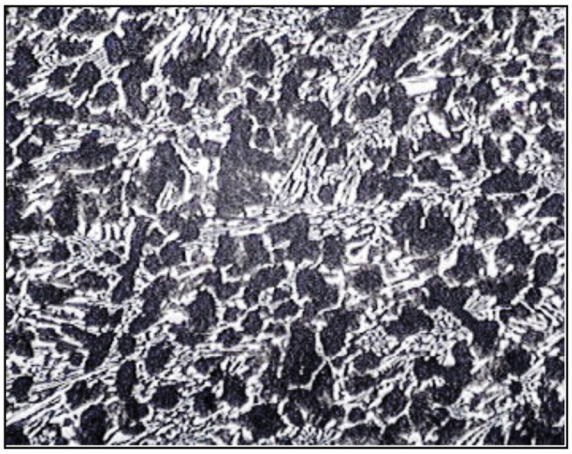
Product Highlights

- Excellent wear resistance and oxidation resistance
- Constant material properties during service life

Chemical Composition:

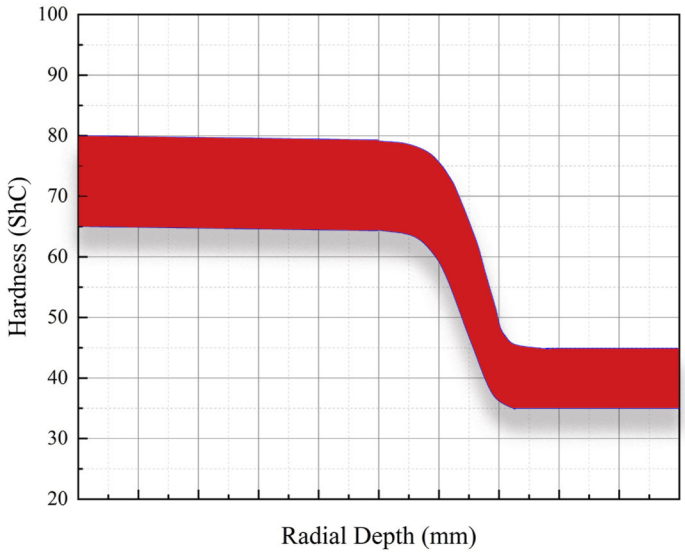
	C	Mn	Si	P	S	Ni	Cr	Mo	V + Nb
Min	2.50	0.50	0.20	0.000	0.000	1.00	10.50	0.40	0.00
Max	3.10	1.50	1.00	0.050	0.050	2.00	19.00	3.60	2.00

Microstructure:



100 X – etched (Nital)

Hardness Penetration Curve (Shell – Interface – Core):



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