

Indefinite Chill Double Poured (ICDP)

Field of Application

Mill Type	Position
Bar and Wire Rod Mill	Intermediate and Finishing Stands
Narrow Strip Mill	Late Finishing Stands

Properties

Hardness Range	70-83 ShC
Tensile Strength	> 400 MPa
Bending Strength	> 700 MPa
Young's Modulus	approx. 170.000 MPa

The microstructure of standard indefinite chill double poured (ICDP) consists of M_3C type eutectic carbides and free graphite embedded in a tempered martensitic/bainitic matrix. This alloy is characterized by its good wear resistance and resistance towards mill accidents.

Enhanced ICDP rolls are further alloyed with special carbide forming elements such as niobium, vanadium or molybdenum, which encourage the formation of hard MC type carbides. These carbides are finely dispersed within the martensitic matrix, cementite (Fe_3C) and free graphite. The presence of special carbides significantly improve wear resistance compared to the standard grades and minimizes the typical hardness drop in conventional ICDP rolls.

Product Highlights

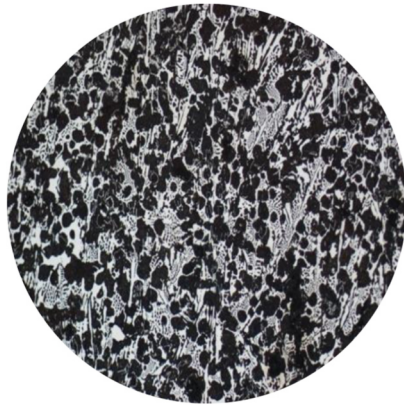
- Good wear resistance
- Very small drop in hardness during roll life
- Good Fire Cracking Resistance
- Insensitive to rolling mill accidents



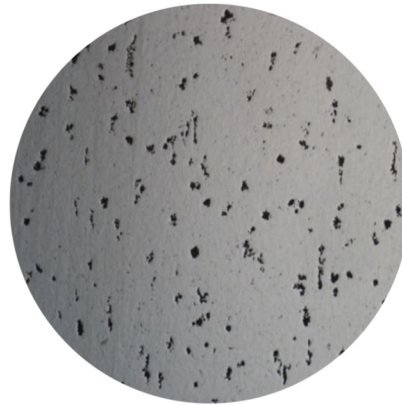
Chemical Composition:

	C	Mn	Si	P	S	Ni	Cr	Mo	Nb + V + W
Min	2.80	0.50	0.50	0.00	0.00	3.00	1.00	0.30	0.00
Max	3.50	1.30	1.50	0.05	0.05	5.00	2.00	3.00	4.00

Microstructure:

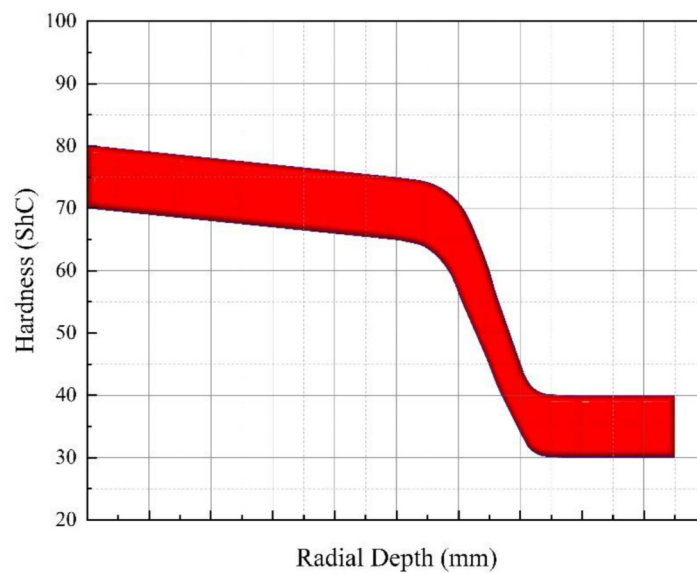


100 X – etched



100 X – unetched

Hardness Graph (Shell – Interface – Core):



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