ROLL MATERIAL DATA SHEET

Indefinite Chill Double Poured

GRADE

ICDP

01 FIELD OF APPLICATION

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

02 MECHANICAL PROPERTIES

HARDNESS RANGE	TENSILE STRENGTH	BENDING STRENGTH	YOUNG'S MODULUS
70-83 ShC	> **400** MPa	> **700** MPa	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

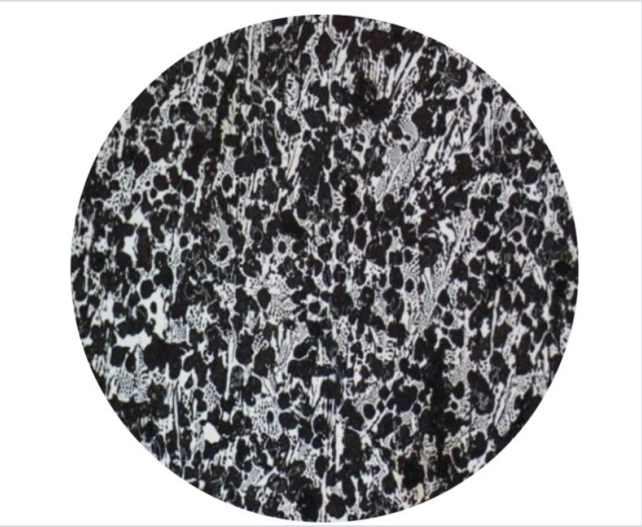
- Good wear resistance
- Very small drop in hardness during roll life
- Good Fire Cracking Resistance
- Insensitive to rolling mill accidents



03 CHEMICAL COMPOSITION

wt. %	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

04 MICROSTRUCTURE



■ *100 X – etched*



■ *100 X – unetched*

05 HARDNESS GRAPH (SHELL – INTERFACE – CORE)

