UNION ELECTRIC STEEL
THE DAVY ROLL COMPANY

The Davy Roll Company Limited

Alloy Indefinite Chill

Description

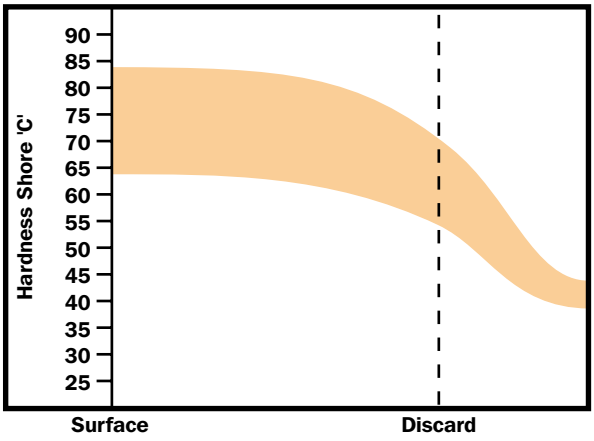
Double Pour, Flake or Nodular Core

Higher hardness indefinite chill rolls must be double poured to maintain the desired level of toughness and thermal properties in the journals and barrel axis. The increased hardness is obtained by alloy additions - mainly nickel, chromium and molybdenum - which modify the matrix structure to produce harder acicular phases.

These rolls combine first class wear resistance and surface finish with the very good spall and firecrack resistance which results from their graphite content and they have proved to be very successful in hot wide strip mills. They also give excellent results under variable operating conditions in plate mills.

The core material can be either flake or nodular iron according to requirements. In general, the flake core will display better thermal properties while the nodular iron achieves greater mechanical strength. The extra strength has become increasingly important in mills using work roll bending and shifting systems. Rolls can be static cast or vertical centrifugal cast.

Typical Hardness Gradient



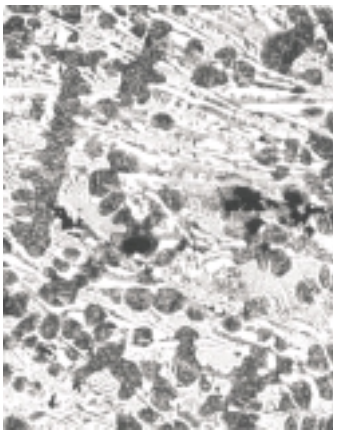
Applications

Product	Type of Mill	Position
Plate	2, 3 and 4 High	Roughing/Finishing
Wide Strip	4 High Continuous	Finishing
Wide Strip	4 High Reversing	Roughing/Finishing
Cold Reduced Strip	4 High Continuous	Work Rolls
Sheet and Coil	2 High Skin Pass	Work Rolls
Sheet and Coil	4 High Temper	Back Up Rolls

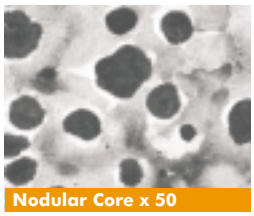
Typical Mechanical Properties

	N/mm2		
	Barrel	Journals & Axis	
Property		Flake Core	Nod. Core
Tensile Strength	345	235	425
Bending Strength	540	345	835

Micrograph (Shell x100)




Flake Core x 50


Nodular Core x 50

Typical Analysis

Code	Leeb E	Shore C	C	Si	Mn	Ni	Cr	Mo
DX6	680-710	65-70	3.0/3.4	0.7/1.2	0.8/1.5	3.0/4.0	1.0/1.5	0.1/0.4
DX7	710-740	70-75	3.0/3.4	0.7/1.0	0.3/1.5	3.5/5.0	1.0/2.0	0.1/0.4
DX9	740-795	75-85	3.0/3.5	0.6/1.0	0.3/1.5	4.0/5.0	1.2/2.0	0.2/0.5
RX7	670-740	63-75	3.0/3.4	0.7/1.2	0.3/1.5	3.5/4.5	1.0/2.0	0.1/0.4
RX8	710-750	70-77	3.0/3.4	0.7/1.2	0.3/1.5	3.8/4.8	1.0/2.0	0.1/0.4
RX9	740-780	75-82	3.0/3.4	0.7/1.2	0.3/1.5	4.0/5.0	1.0/2.0	0.1/0.4

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