Cast Steel Roll Specifications

GRADE: 5 Chrome

Union Electric Åkers
Forged and Cast Rolls ™

DESCRIPTION

This is the new standard of Back-Up Roll for high productivity mills requiring extended campaign lengths and superior wear performance.

These improved properties are achieved through the production of a Monobloc Static Cast Roll with an analysis derived in part from a family of tool steel materials. These rolls are produced to a higher hardness level of up to 73 Shore C through a differential hardening process. The greatly enhanced wear properties produced can be related to a higher percentage of more complex carbides within a matrix of tempered acicular products.

In the differential hardening process, the rolls are first treated to produce the optimum journal/neck structure for meeting the mechanical requirements of the mill. The barrel surface layer is then heated to a controlled depth by means of a special Rotary Selas Furnace. The optimum wear resistant rolling structure is then obtained through a controlled water quench and isothermal hold. Finally, the roll is given a tempering treatment to achieve the appropriate hardness.

As the 5 Chrome Roll will achieve significantly longer total service life, the Monobloc Casting Method is preferred over the Duplex Casting Method to prevent potential shell to core bond problems. The rolls still retain the benefits of the traditional differentially hardened alloy cast steel materials, showing excellent durability, high strength and spall resistance.

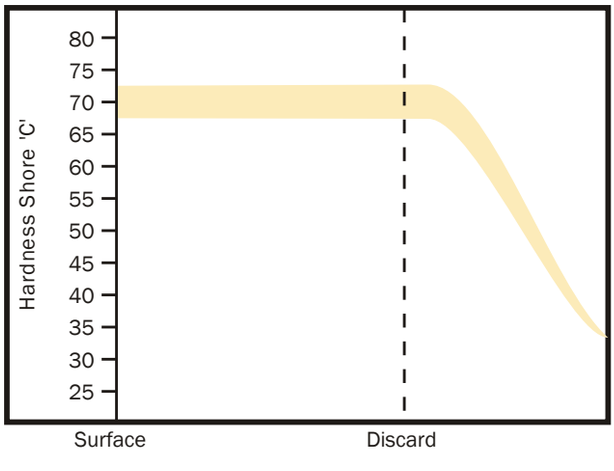
APPLICATIONS

Product	Type of Mill	Position
Hot Rolled Coil	2 High Roughing	Work Rolls
Hot Rolled Coil	4 High Roughing / Finishing	Back Up Rolls
Plate	2 High Roughing	Work Rolls
Plate	4 High Roughing / Finishing	Back Up Rolls
Aluminium	4High Roughing / Finishing	Back Up Rolls
Cold Rolled Coil	4 High Tandem	Back Up Rolls
Cold Rolled Coil	4 High Temper / DR	Back Up Rolls
Cold Rolled Coil	4 High Galv / Skin Pass	Back Up Rolls

TYPICAL MECH. PROPERTIES

	N/mm2	
Property	Barrel Surface	Journals & Axis
Tensile Strength	1400	750
Bending Strength	1900	1030

DEPTH OF HARDNESS



MICROGRAPH X500

TYPICAL ANALYSIS

Code	Leeb E	Shore C	C	Si	Mn	Ni	Cr	Mo
5 Chrome	680/730	65/73	0.3/0.7	0.3/0.8	0.3/1.0	0.5 max	3.5/6.0	0.5/1.0