

The Davy Roll Company Limited

Description

A new generation of differentially hardened alloy cast steel back up rolls has been developed to meet the ever advancing requirements of modern strip mills.

It was clear that there was a need for a back up roll whose campaign times could be substantially extended while retaining a good even wear profile that would maintain close gauge control.

This goal is achieved by the production of a monobloc static cast roll with an analysis derived in part from a family of tool steel materials. The rolls are produced to a high hardness level of up to 70 Shore C. The greatly enhanced wear properties produced can be related to a secondary hardening phenomenon that occurs during the complex heat treatment cycle applied. Examination of the microstructure reveals many very fine carbide globules present in a matrix of tempered acicular products.

Although presenting a real advance in roll technology, the rolls still retain the benefits of the traditional differentially hardened alloy cast steel materials, showing excellent durability, high strength and spall resistance.

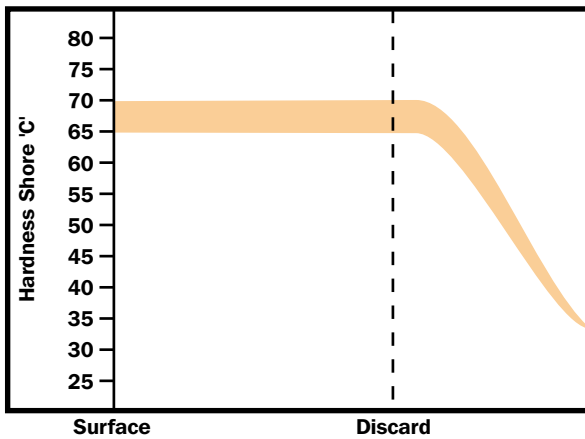
Applications

Product	Type of Mill	Position
Wide Strip	Hot and Cold	Backup Rolls

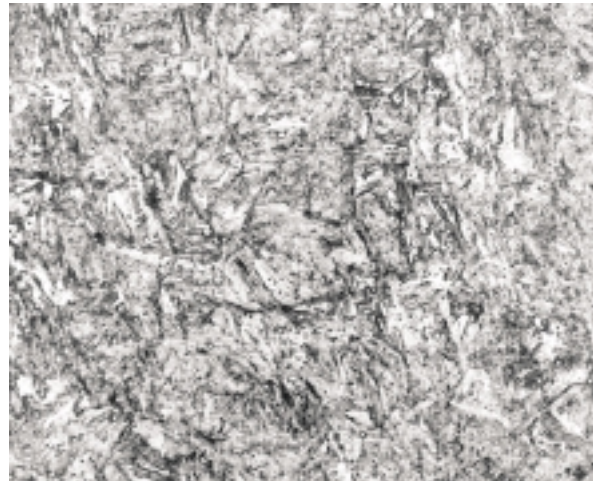
Typical Mechanical Properties

Property	N/mm ²	
	Barrel Surface	Journals & Axis
Tensile Strength	1200	600
Bending Strength	1650	825

Typical Hardness Gradient



Micrograph (x500)



Typical Analysis

Code	Leeb E	Shore C	C	Si	Mn	Ni	Cr	Mo
V-Chrome	680-710	65/70	0.3/0.7	0.3/0.8	0.3/1.0	1.0 max	3.5/6.0	1.0/2.0

