Cast Steel Roll Specifications

GRADE: Graphitic Steel Base

Union Electric Åkers
Forged and Cast Rolls
™

DESCRIPTION

Graphitic Steel Base is similar to normal Steel Base in that it is a hypereutectoid steel with a carbon content between 1.2% and 2.4%. However, unlike Steel Base, all the carbon is not present as carbide. Modifications of the alloy content and metal treatment produces a controlled amount of fine graphite particles dispersed throughout the structure.

The presence of the graphite improves the firecrack resistance of the roll material and reduces thrust collar wear as well as the side wear which occurs during indirect reduction. It also helps to resist wear in applications with aggressive abrasion on side faces due to excessive speed mismatch.

The grade chosen for a particular application will have sufficient carbide in the microstructure to ensure that the wear resistance is high while the matrix structure can be either spheroidal or lamellar pearlite depending upon the heat treatment given.

The virtually constant hardness and wear resistance across the barrel diameter allows Graphitic Steel Base rolls to be used for almost any size of section, especially where fire cracking is a problem.

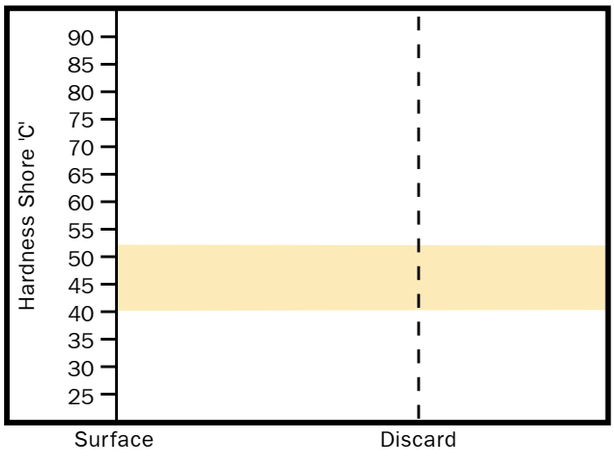
APPLICATIONS

Product	Type of Mill	Position
Billet	2 High Continuous	Rough and Intermediary
Heavy Section and Rail	2 and 3 High	All Positions
Beams	Universal	All Positions
Medium Section	2 and 3 High	All Positions

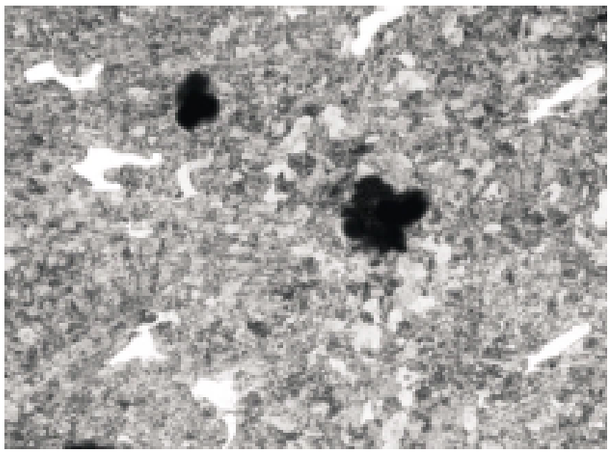
TYPICAL MECH. PROPERTIES

	N/mm2	
Property	Low Carbon	High Carbon
Tensile Strength	460	395
Bending Strength	650	540

DEPTH OF HARDNESS



MICROSTRUCTURE X100



AIM CHEMISTRY (WT%)

Code	Leeb E	Shore C	C	Si	Mn	Ni	Cr	Mo
GS8	525/560	40-45	1.4/1.6	1.0/2.0	0.5/0.9	0.5max	0.6/1.2	0.25max
GS9	540-570	42-47	1.6/1.8	1.0/2.0	0.5/0.9	0.5max	0.6/1.2	0.25max
GS10	555-610	44-53	1.8/2.0	1.0/2.0	0.5/0.9	0.5max	0.6/1.2	0.25max
GS11	585-625	49-59	2.0/2.2	1.0/2.0	0.5/0.9	0.5max	0.6/1.2	0.25max