

# Cast Steel Roll Specifications

## GRADE: Alloy Cast Steel

**Union Electric Åkers**  
Forged and Cast Rolls



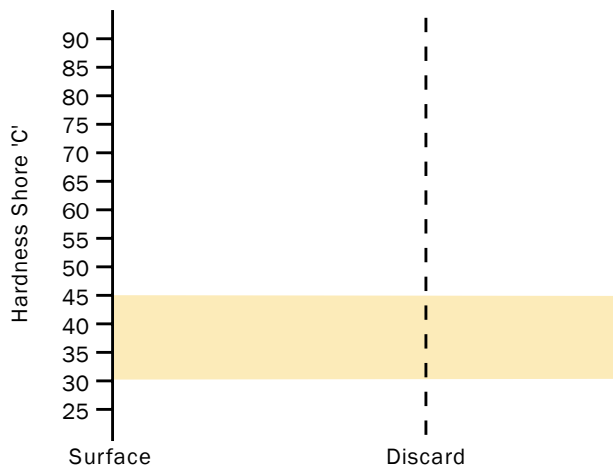
### DESCRIPTION

These steels consist of lower carbon materials with some alloying, especially chromium. This range of rolls is capable of a higher strength and wear resistance than is possible with lower alloy steels and the higher carbon grades in particular are capable of good surface finish. The rolls are supplied with a carbon content of up to 1.4% and are heat treated to give a hardness which is normally between 30° and 45° Shore C.

The lower carbon grades will have a structure consisting of ferrite and fine pearlite which, as the carbon content is raised, changes first to a fully pearlitic structure and then to one containing free carbide in a matrix of fine pearlite for the highest carbon materials.

Alloy cast steel can be used in heavy duty applications such as slabbing, blooming and heavy section mills but the improved wear resistance of the high carbon grades makes them suitable for use in medium section mills as well as roughing rolls for flat products.

### DEPTH OF HARDNESS



### APPLICATIONS

Product	Type of Mill	Position
Slabs	Universal and High Lift	Horizontal and Vertical
Blooms	2 and 3 High	All Positions
Plate	2 High	Roughing
Sheet	2 and 3 High	Roughing
Wide Strip	2 and 4 High	Roughing
Beam Blanks	2 High	
Billets	2 and 3 High	Roughing
Billets	Continuous	Roughing
Heavy Section and Rail	2 and 3 High	Roughing, Intermediate and Finishing
Medium Section	2 and 3 High	Roughing

### TYPICAL MECH. PROPERTIES

Property	N/mm <sup>2</sup>	
	Low Carbon	High Carbon
Tensile Strength	750	550
Bending Strength	1300	1000

### MICROSTRUCTURE X100



### AIM CHEMISTRY (WT%)

Code	Leeb E	Shore C	C	Si	Mn	Ni	Cr	Mo
A1	465/525	30/40	0.4/0.5	0.3/0.8	0.5/1.0	0.5 max	0.8/1.4	0.1/0.5
A2	465/525	30/40	0.5/0.6	0.3/0.8	0.5/1.0	0.5 max	0.8/1.4	0.1/0.5
A3	485/545	33/43	0.6/0.7	0.3/0.8	0.5/1.0	0.5 max	0.8/1.4	0.1/0.5
A4	485/545	33/43	0.7/0.8	0.3/0.8	0.5/1.0	0.5 max	0.8/1.4	0.1/0.5
A5	485/545	33/43	0.8/1.0	0.3/0.8	0.5/1.0	0.5 max	0.8/1.4	0.1/0.5
A6	495/555	35/45	1.0/1.2	0.3/0.8	0.5/1.0	0.5 max	0.8/1.4	0.1/0.5
A7	495/555	35/45	1.2/1.4	0.3/0.8	0.5/1.0	0.5 max	0.8/1.4	0.1/0.5