

# Cast Steel Roll Specifications

## GRADE: High Speed Steel

**Union Electric Åkers**  
Forged and Cast Rolls



### DESCRIPTION

#### Centrifugally Cast, Nodular Core

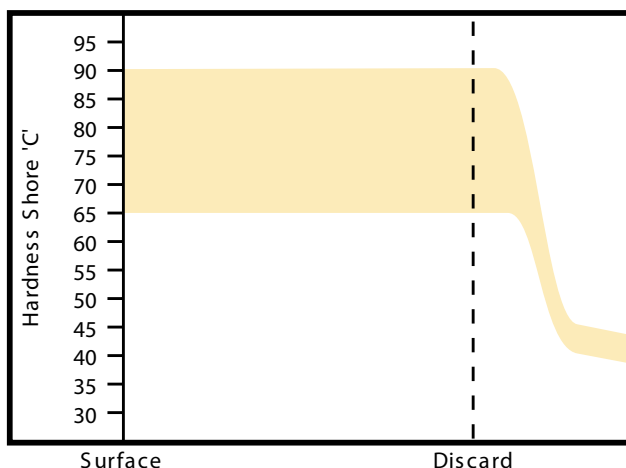
Specially developed for use as work rolls in the early finishing stands of hot strip mills. High Speed Steel rolls are centrifugally cast double poured and consist of a shell of high carbon high speed steel with journals and barrel axis of nodular cast iron.

This type of roll is particularly suitable for mills requiring the highest standards of surface finish and dimensional control where the exceptional wear resistance reduces the need for frequent roll changes, so enhancing mill productivity.

The structure of the shell metal consists of globular primary carbides in a tempered martensitic matrix with fine secondary carbides. The carbon content of the shell metal is higher than that found in conventional high speed steels so as to increase the carbide content to give levels of wear resistance previously unheard of for this type of roll.

The fine microstructure and high hardenability of this material mean that there is no fall-off in hardness to discard so ensuring consistently excellent performance throughout the life of the roll. The core material for any double poured High Speed Steel roll will be of nodular iron, which provides greater mechanical strength which is important in mills using roll bending and shifting systems.

### DEPTH OF HARDNESS



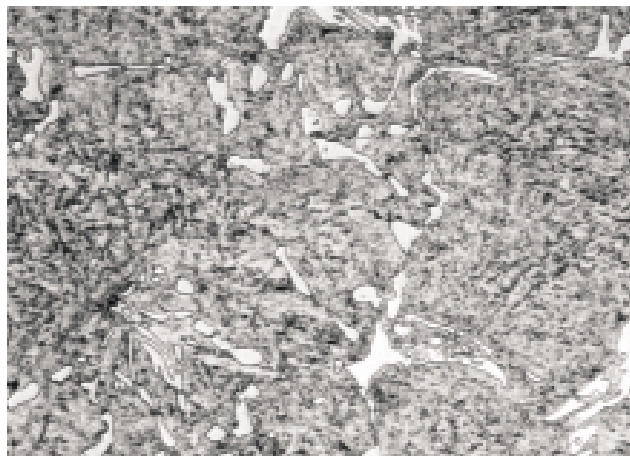
### APPLICATIONS

Product	Type of Mill	Position
Wide Strip	4 High	Work Rolls

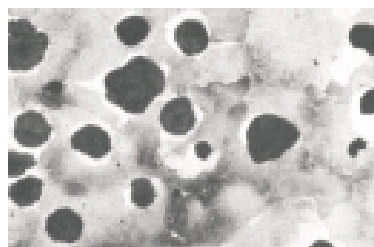
### TYPICAL MECH. PROPERTIES

Property	N/mm <sup>2</sup>	
	Barrel	Journals & Axis
Tensile Strength	850	425
Bending Strength	1100	835

### HSS SHELL X500



### NODULAR CORE X50



### AIM CHEMISTRY (WT%)

Code	Leeb E	Shore C	C	Si	Mn	Ni	Cr	Mo	V	W
HSS	757/790	78/84	1.0/2.5	0.3/1.8	0.1/1.5	0.1/1.0	4.5/9.5	0.5/7.0	4.0/10.0	0.0/6.0