Forged Steel Roll Specifications

GRADE: 5CR

Union Electric Åkers
Forged and Cast Rolls
™

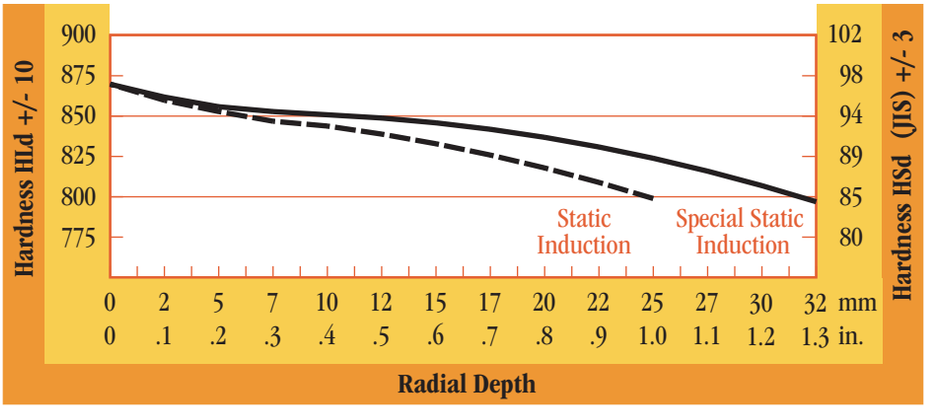
DESCRIPTION

This high alloy, small diameter (<15", 380 mm) work roll material is used in both ferrous and nonferrous cold mill applications. The microstructure of the 5% chromium alloy enhances the wear properties by the development of a uniform dispersion of alloy carbides. Grade 5CR can be melted using either the electric arc furnace, vacuum degassed, bottom poured or ESR (electroslag remelt) ingot process. This roll is most effective in mills that experience high wear situations. The hardenability is maximized with the special static induction heat treatment process developed by *Union Electric Åkers.*

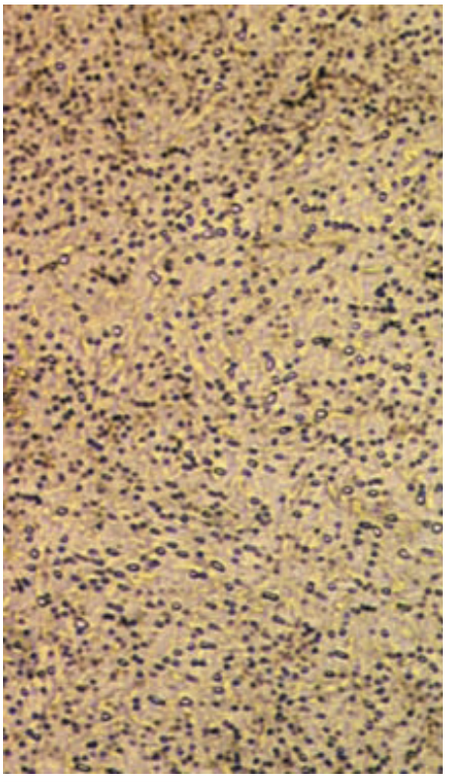
AIM CHEMISTRY (WT%)

C	Mn	P	S	Si	Cr	Mo	V
.87	.27	.015 max	.012 max	.40	5.12	.19	.06

DEPTH OF HARDNESS



MICROSTRUCTURE



1500X

HEAT TREATMENT CAPABILITY

Decrease from Initial Surface Hardness (Radial Depth)

Hardening Method	20/30 HLd 4/6 HSd (JIS)	40/50 HLd 8/10 HSd (JIS)
Static Induction	0.50" (13 mm)	0.70" (18 mm)
Special Static Induction*	0.70" (18 mm)	0.90" (23 mm)

**Cryogenic treatment utilized in this method.*

TYPICAL CARBIDE ANALYSIS

Carbide Type	Carbide Hardness (HV)	Surface Area (%)	Average Diameter (μ)	Carbide Density (Carbide/mm ^{2})
M_7C_3	1200-1600	11 - 12	.5	5.7 x 10 ^{5}