Forged Steel Roll Specifications

GRADE: 3CR50C (UEHM)

Union Electric Åkers
Forged and Cast Rolls
™

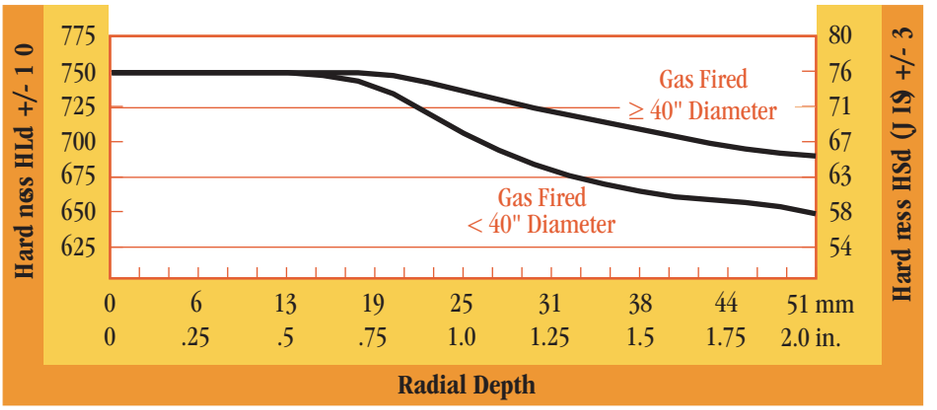
DESCRIPTION

This alloy can be used for back-up rolls in all types of ferrous and nonferrous mill applications. The 3% chromium alloy (*Union Electric Åkers* Grade designation "UEHM") can be heat treated to increase neck strength for mill applications that require "flexure re-sponse" and increased resistance to neck breakage. Traditional mill designs are best served with this alloy when roll life does not exceed 4" (100 mm) on diameter.

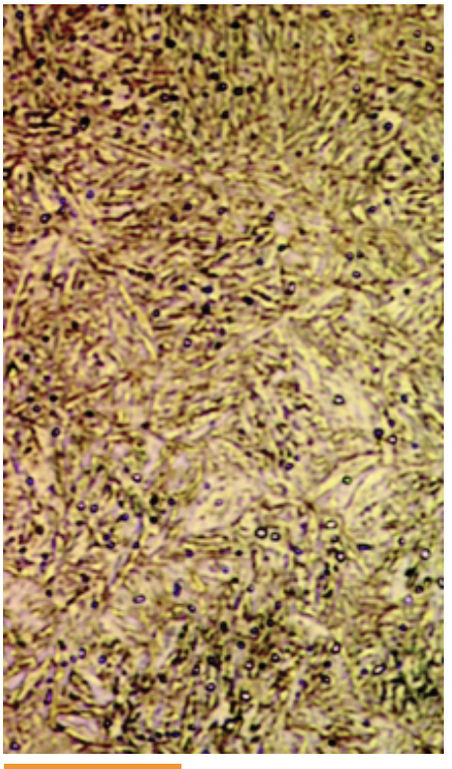
AIM CHEMISTRY (WT%)

C	Mn	P	S	Si	Cr	Mo	V
.46	.27	.015 max	.012 max	.37	3.12	.19	.06

DEPTH OF HARDNESS



MICROSTRUCTURE



1500X

HEAT TREATMENT CAPABILITY

Decrease from Initial Surface Hardness (Radial Depth)

Hardening Method	10/20 HLd 2/4 HSd (JIS)	50/60 HLd 10/12 HSd (JIS)
Gas Fired - < 40" (1000 mm)	0.80" (20 mm)	1.10" (28 mm)
Gas Fired - ≥ 40" (1000 mm)	1.00" (25 mm)	1.80" (46 mm)

TYPICAL CARBIDE ANALYSIS

Carbide Type	Carbide Hardness (HV)	Surface Area (%)	Average Diameter (μ)	Carbide Density (Carbide/mm ^{2})
M_3C	850-1100	2 - 3	.7	0.8 x 10 ^{5}