

# Steels for cold rolls – schematic flow sheet

## Surface hardenable tool steel and ledeburitic tool steel

Increasing hardness of rolls

1080*	<b>1.2990</b>	61 - 64°		
525		Eaf/ESR		
L (i,k)		s		
Cryodur 2990 Coldroll				
C	Cr	Mo	V	Si
1.00	8.00	1.10	1.60	0.30

1080*	<b>1.2379</b>	58 - 62°		
525		Eaf		
L (i,j,k)		s		
X153CrMoV12 Cryodur 2379 Coldroll				
C	Cr	Mo	V	Si
1.55	12.00	0.75	0.90	0.30

1190/1230*	<b>1.3343</b>	63 - 65°		
560		Eaf/ESR		
L (i)		s		
HS6-5-3 Rapidur 3343 Coldroll				
C	Cr	Mo	W	V
0.90	4.10	5.00	6.40	1.90
980	<b>1.2080</b>	60 - 62°		
250		Eaf		
L (i)		s		
X210Cr12 Cryodur 2080 Coldroll				
C	Cr	Mn	V	Si
2.00	12.00	0.30		0.30

900*	<b>1.2325 So4</b>	70°		
300		Eaf/ESR		
S (i,j)		m		
80CrMo16-4 Cryodur 2325 So4 Coldroll				
C	Cr	Mo	Si	Mn
0.80	4.00	0.55	0.75	0.60

1020*	<b>1.2362</b>	60 - 62		
525		Eaf/ESR		
L (j)		m		
≈X63CrMoV5-1 Cryodur 2362 Coldroll				
C	Cr	Mo	V	Si
0.65	5.20	1.40	0.50	1.10

1080*	<b>1.2363</b>	56 - 58°		
550		Eaf/ESR		
L (j)		m		
X100CrMoV5 Cryodur 2363 Coldroll				
C	Cr	Mo	V	Si
1.00	5.00	0.95	0.20	0.30

870*	<b>1.2325</b>	50°		
300		Eaf/ESR		
S (i,j)		g		
80CrMo12-6 Cryodur 2325 So1 Coldroll				
C	Cr	Mo	Si	Mn
0.80	3.00	0.55	0.75	0.60

870*	<b>1.2364</b>	50°		
300		Eaf/ESR		
S (i,j)		m		
85CrMoV12-6-5 Cryodur 2364 Coldroll				
C	Cr	Mo	V	Si/Mn
0.83	3.00	0.55	0.50	0.75/0.60

870*	<b>1.2321 So3</b>	35°		
300		Eaf/ESR		
S (i,j)		g		
80CrMo8-3 Cryodur 2327 So3DH Coldroll				
C	Cr	Mo	Si	Mn
0.80	2.10	0.36	0.75	0.35

870*	<b>1.2321</b>	20°		
300		Eaf/ESR		
S (i,j)		g		
80CrMo8-3 Cryodur 2327 So1 Coldroll				
C	Cr	Mo	Si	Mn
0.80	1.90	0.30	0.45	0.35

- a\*. Max. hardening temperature (depends on applied procedure)/(°C)
- b. Max. annealing temperature (°C)
- c. Application → i = work rolls  
j = back up rolls  
L = Ledeburitic steel  
S = Surface hardenable tool steel  
D. German material number  
E. Designation

a*	<b>1.DDDD</b>	f°		
b		g		
c (i,j,k)		l		
EEEEEEEE brand				
C	Cr	Mo	V	Si
Reference analysis [mass %]				

- f°. Max. effective hardening depth at 700 HV30 (mm) for surface hardenable tool steel / for ledeburitic steel approved case hardness range (depends on applied procedure) [HRC]
- g. Melt process → Eaf = Electric arc furnace  
ESR = Electro slag remelting
- l. grindability → g = good  
m = moderate  
s = low