

Assab Steels CARMO Cold Work Steel

Category : Metal , Ferrous Metal , Chrome-moly Steel , Tool Steel , Cold Work Steel

Material Notes:

CARMO is a high-strength, flame-induction and through hardening steel delivered prehardened to 240-270 HB. The surface of the steel can be flame-hardened without water cooling to a hardness of 58 ± 2 HRC. The depth of hardness is normally 4-5 mm and the hardened and tempered matrix is a good base for the flame-hardened layer. The steel can be easily repair welded and has a high wear resistance similar to that of A2. The toughness of CARMO is much better than that for the steel types A2 and D2. CARMO is a cold work tool steel which has been developed together with the automotive industry. Its analysis has been balanced to give one universal tool steel for car body dies instead of the several steel grades (flame hardening and through hardening grades) which are normally used. The steel can be used in the flame-hardened or in the through-hardened condition for blanking and forming of both car body parts (thin sheet) or structural parts (thicker sheet).

Order this product through the following link:

http://www.lookpolymers.com/polymer_Assab-Steels-CARMO-Cold-Work-Steel.php

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	43	43	Surface hardness. 600°C Tempering temperature, $T_{\text{sub>A}}$ = 960°C
	55	55	Surface hardness. 400°C Tempering temperature, $T_{\text{sub>A}}$ = 960°C
	58	58	At 900°C Austenitizing temperature during hardening
	60	60	Core hardness in air cooling for a diameter of 100 mm.
	62	62	Core hardness in air cooling for a diameter of 50 mm.
	63	63	At 960°C Austenitizing temperature during hardening
	63	63	Surface hardness. 100°C Tempering temperature, $T_{\text{sub>A}}$ = 960°C
	63	63	Core hardness in air cooling for a diameter of 1-20 mm.
	65	65	At 1025°C Austenitizing temperature during hardening
Tensile Strength, Ultimate	870 MPa	126000 psi	$R_{\text{sub>m}}$, @RT, 270 HB.
Tensile Strength, Yield	670 MPa	97200 psi	$R_{\text{sub>p}} > 0.2$, @RT, 270 HB.
Elongation at Break	15 %	15 %	
Reduction of Area	50 %	50 %	
	125 J	92.2 ft-lb	RT. 450°C tempering temp. Specimen size: 7x10x55 mm unnotched.

Impact Test Mechanical Properties	Metric	English	Comments Hardened at 960°C. Quenched in air. Tempered twice
	200 J	148 ft-lb	RT. 250°C tempering temp. Specimen size: 7x10x55 mm unnotched. Hardened at 960°C. Quenched in air. Tempered twice
	260 J	192 ft-lb	RT. 600°C tempering temp. Specimen size: 7x10x55 mm unnotched. Hardened at 960°C. Quenched in air. Tempered twice

Thermal Properties	Metric	English	Comments
CTE, linear	12.3 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	6.83 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	Hardened and tempered to 56 HRC
	@Temperature 20.0 - 200 °C	@Temperature 68.0 - 392 °F	
	13.3 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	7.39 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	Hardened and tempered to 56 HRC
	@Temperature 20.0 - 400 °C	@Temperature 68.0 - 752 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.60 %	0.60 %	
Chromium, Cr	4.5 %	4.5 %	
Iron, Fe	93.05 %	93.05 %	
Manganese, Mn	0.80 %	0.80 %	
Molybdenum, Mo	0.50 %	0.50 %	
Silicon, Si	0.35 %	0.35 %	
Vanadium, V	0.20 %	0.20 %	

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China