

Assab Steels 709M Machinery Steel

Category : Metal , Ferrous Metal , Alloy Steel

Material Notes:

ASSAB 709M is an alloyed machinery steel with high strength in small and medium sizes. As standard ASSAB 705M is supplied tough hardened requiring no further heat treatment. It can be oil hardened to higher mechanical properties. Applications: ASSAB 709M is suitable for flame and induction hardening. It can also be nitrided or tuffrided to a surface hardness of 600-650 Vickers. ASSAB 709M is not suitable for welding but can with certain precautions be repair welded. Typical applications include shafts and other power transmission components as well as high strength bolts. AISI /SAE 4140, DIN 42CrMo4, W.nr. 1.7225, BS 708M42, AFNOR 42CD4, JIS SCM4, SS 2244

Order this product through the following link:

http://www.lookpolymers.com/polymer_Assab-Steels-709M-Machinery-Steel.php

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	260	260	700°C tempering temperature. Quenching in oil ø 50. Testpiece hardened by oil quenching from 850°C.
	370	370	500°C tempering temperature. Quenching in oil ø 50. Testpiece hardened by oil quenching from 850°C.
	245 - 290 @Diameter 101 - 210 mm	245 - 290 @Diameter 3.98 - 8.27 in	un-machined
Hardness, Rockwell C	275 - 320 @Diameter <=100 mm	275 - 320 @Diameter <=3.94 in	un-machined
	40	40	tempering temperature 500°C. Hardened by oil quenching.
	31 - 50	31 - 50	30 mm from the quenched end.
Tensile Strength at Break	49 - 60	49 - 60	10 mm from the quenched end.
	55	55	tempering temperature 200°C. Hardened by oil quenching.
	800 MPa	116000 psi	R_m. 700°C tempering temperature. Quenching in oil ø 50. Testpiece hardened by oil quenching from 850°C.
Tensile Strength, Ultimate	1130 MPa	164000 psi	R_m. 500°C tempering temperature. Quenching in oil ø 50. Testpiece hardened by oil quenching from 850°C.
	800 - 950 MPa @Diameter 101 - 210 mm	116000 - 138000 psi @Diameter 3.98 - 8.27 in	Rm., un-machined

Mechanical Properties	Metric	English	Comments
	1050 MPa	152000 psi	Rm., unmachined
	@Diameter <=100 mm	@Diameter <=3.94 in	
Tensile Strength, Yield	700 MPa	102000 psi	R_e. 700°C tempering temperature. Quenching in oil ø 50. Testpiece hardened by oil quenching from 850°C.
	1050 MPa	152000 psi	R_e. 500°C tempering temperature. Quenching in oil ø 50. Testpiece hardened by oil quenching from 850°C.
	>= 600 MPa	>= 87000 psi	Re., un-machined
	@Diameter 101 - 210 mm	@Diameter 3.98 - 8.27 in	
	>= 690 MPa	>= 100000 psi	Re. , un-machined
	@Diameter <=100 mm	@Diameter <=3.94 in	
Elongation at Break	15 %	15 %	5XD. 500°C tempering temperature. Quenching in oil ø 120. Testpiece hardened by oil quenching from 850°C.
	20 %	20 %	5XD. 700°C tempering temperature. Quenching in oil ø 120. Testpiece hardened by oil quenching from 850°C.
	>= 12 %	>= 12 %	un-machined
	@Diameter <=100 mm	@Diameter <=3.94 in	
	>= 14 %	>= 14 %	un-machined
	@Diameter 101 - 210 mm	@Diameter 3.98 - 8.27 in	
Reduction of Area	50 %	50 %	500°C tempering temperature. Quenching in oil ø 50. Testpiece hardened by oil quenching from 850°C.
	64 %	64 %	700°C tempering temperature. Quenching in oil ø 50. Testpiece hardened by oil quenching from 850°C.
	>= 50 %	>= 50 %	un-machined
	@Diameter <=100 mm	@Diameter <=3.94 in	
	>= 55 %	>= 55 %	un-machined
	@Diameter 101 - 210 mm	@Diameter 3.98 - 8.27 in	
Impact Test	>= 25.0 J	>= 18.4 ft-lb	un-machined

Mechanical Properties	@Diameter 16.0 - 210 Metric	@Diameter 0.630 - 8.27 English	Comments
Component Elements Properties	Metric	English	Comments
Carbon, C	0.42 %	0.42 %	
Chromium, Cr	1.05 %	1.05 %	
Iron, Fe	97.33 %	97.33 %	
Manganese, Mn	0.75 %	0.75 %	
Molybdenum, Mo	0.20 %	0.20 %	
Silicon, Si	0.25 %	0.25 %	

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