

Bohler-Uddeholm UDDEHOLM CORRAX® Precipitation Hardening Stainless Mold Steel

Category : Metal , Ferrous Metal , Stainless Steel , Precipitation Hardening Stainless , Tool Steel , Mold Steel

Material Notes:

A precipitation hardening stainless steel which offers excellent high corrosion resistance, excellent dimensional stability during hardening and good wear resistance. It can be used at its as-supplied hardness of 34-36 HRC, or a low-temperature aging treatment can increase the hardness up to 50 HRC. CORRAX® is characterized by: Extremely good dimensional stability during the aging process High uniformity of properties even in large dimensions Very good weldability; no pre-heating necessary No hard "white layer" after EDM Corrosion resistance superior to AISI 420 and AISI 440 Applications: Injection moulds for corrosive plastics, rubber and medical and food industry Extrusion dies Plastic processing - screws Engineering parts

Order this product through the following link:

http://www.lookpolymers.com/polymer_Bohler-Uddeholm-UDDEHOLM-CORRAX-Precipitation-Hardening-Stainless-Mold-Steel.php

Physical Properties	Metric	English	Comments
Density	7.75 g/cc	0.280 lb/in ³	hardened to 46 HRC

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	34	34	Solution treated (Delivery condition)
Tensile Strength, Ultimate	1100 MPa	160000 psi	Solution treated ~ 34 HRC
	1170 MPa	170000 psi	Aged to ~ 40 HRC
	1520 MPa	220000 psi	Aged to ~ 46 HRC
	1720 MPa	250000 psi	Aged to ~ 50 HRC
Tensile Strength, Yield	1590 MPa	230000 psi	Aged to ~ 50 HRC
	689 MPa	100000 psi	Solution treated ~ 34 HRC
	@Strain 0.200 %	@Strain 0.200 %	
	1030 MPa	150000 psi	Aged to ~ 40 HRC
	@Strain 0.200 %	@Strain 0.200 %	
	1380 MPa	200000 psi	Aged to ~ 46 HRC
Modulus of Elasticity	200 GPa	29000 ksi	(hardened to 46 HRC)
	172 GPa	25000 ksi	hardened to 46 HRC
	@Temperature 399 °C	@Temperature 750 °F	
	193 GPa	28000 ksi	

Mechanical Properties	Metric @ Temperature 199 °C	English @ Temperature 390 °F	hardened to 46 HRC Comments
Compressive Yield Strength	900 MPa	131000 psi	0.2%, Solution treated ~ 34 HRC
	1300 MPa	189000 psi	0.2%, Aged to ~ 40 HRC
	1600 MPa	232000 psi	0.2%, Aged to ~ 46 HRC
	1800 MPa	261000 psi	0.2%, Aged to ~ 50 HRC
Impact Test	5.42 - 17.6 J	4.00 - 13.0 ft-lb	50 HRC
	20.3 - 40.7 J	15.0 - 30.0 ft-lb	34 HRC

Thermal Properties	Metric	English	Comments
CTE, linear	11.7 µm/m-°C	6.50 µin/in-°F	hardened to 46 HRC
	@Temperature 199 °C	@Temperature 390 °F	
	12.2 µm/m-°C	6.80 µin/in-°F	hardened to 46 HRC
	@Temperature 399 °C	@Temperature 750 °F	
Thermal Conductivity	18.0 W/m-K	125 BTU-in/hr-ft ² -°F	hardened to 46 HRC
	@Temperature 199 °C	@Temperature 390 °F	
	21.0 W/m-K	146 BTU-in/hr-ft ² -°F	hardened to 46 HRC
	@Temperature 399 °C	@Temperature 750 °F	
Shrinkage	0.0700 - 0.250 %	0.0700 - 0.250 %	Transverse
	@Temperature 524 - 621 °C, Time 14400 sec	@Temperature 975 - 1150 °F, Time 4.00 hour	
	0.0700 - 0.250 %	0.0700 - 0.250 %	
	@Temperature 524 - 621 °C, Time 14400 sec	@Temperature 975 - 1150 °F, Time 4.00 hour	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	1.6 %	1.6 %	
Carbon, C	0.030 %	0.030 %	
Chromium, Cr	12 %	12 %	
Iron, Fe	75.17 %	75.17 %	as balance
Manganese, Mn	0.30 %	0.30 %	

Component Elements Properties	Metric	English	Comments
Nickel, Ni	9.2 %	9.2 %	
Silicon, Si	0.30 %	0.30 %	

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