

## Industeel CLC 1.2311 Prehardened Mold Steel (300HB/30HRC)

Category : Metal , Ferrous Metal , Carbon Steel , High Carbon Steel , Tool Steel , Mold Steel

### Material Notes:

Description: CLC 1.2311 is a 300HB (30HRC) pre-hardened grade specially designed for plastic mold industry. Chromium, Molybdenum, carbon and manganese additions are optimized to have a fully martensite-bainite microstructure after quenching. The steel is melted in electrical furnace and refined with VOD or DH device The cleanliness of the steel is guaranteed as well as the soundness. This makes the steel particularly well adapted for mold steel even when polishing or chemical etching are required for surface finish quality. Information provided by manufacturer.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Industeel-CLC-12311-Prehardened-Mold-Steel-300HB30HRC.php](http://www.lookpolymers.com/polymer_Industeel-CLC-12311-Prehardened-Mold-Steel-300HB30HRC.php)

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	300	300	Typical, in Longitudinal and Transverse Direction
Tensile Strength, Ultimate	992 MPa	144000 psi	Typical, Transverse Direction
	1014 MPa	147100 psi	Typical, Longitudinal Direction
Tensile Strength, Yield	821 MPa	119000 psi	Typical, Transverse Direction
	@Strain 0.200 %	@Strain 0.200 %	
	854 MPa	124000 psi	Typical, Longitudinal Direction
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	9.6 %	9.6 %	Typical, EL 5.65 Transverse Direction
	10.8 %	10.8 %	Typical, EL 5.65 Longitudinal Direction
Modulus of Elasticity	205 GPa	29700 ksi	Typical, in Longitudinal and Transverse Direction
Charpy Impact	25.0 J	18.4 ft-lb	Typical (Transverse)
	28.0 J	20.7 ft-lb	Typical (Longitudinal)
	23.0 J	17.0 ft-lb	Typical (Longitudinal)
@Temperature -20.0 Å°C	@Temperature -4.00 Å°F		
Charpy Impact, Unnotched	28.0 J	20.7 ft-lb	Longitudinal
	@Temperature -20.0 Å°C	@Temperature -4.00 Å°F	
	30.0 J	22.1 ft-lb	Transverse
	@Temperature 20.0 Å°C	@Temperature 68.0 Å°F	

Mechanical Properties	Metric	English	Comments
	@Temperature 20.0 Â°C	23.0 N-lb @Temperature 68.0 Â°F	Longitudinal

Thermal Properties	Metric	English	Comments
CTE, linear	11.5 Âµm/m-Â°C	6.39 Âµin/in-Â°F	
	@Temperature 20.0 - 100 Â°C	@Temperature 68.0 - 212 Â°F	
	11.57 Âµm/m-Â°C	6.428 Âµin/in-Â°F	
	@Temperature 20.0 - 200 Â°C	@Temperature 68.0 - 392 Â°F	
	12.47 Âµm/m-Â°C	6.928 Âµin/in-Â°F	
	@Temperature 20.0 - 300 Â°C	@Temperature 68.0 - 572 Â°F	
Thermal Conductivity	34.0 W/m-K	236 BTU-in/hr-ftÂ²-Â°F	
	@Temperature 20.0 Â°C	@Temperature 68.0 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.40 %	0.40 %	
Chromium, Cr	1.9 %	1.9 %	
Iron, Fe	95.683 - 95.7 %	95.683 - 95.7 %	As remainder
Manganese, Mn	1.5 %	1.5 %	
Molybdenum, Mo	0.20 %	0.20 %	
Phosphorous, P	<= 0.012 %	<= 0.012 %	
Silicon, Si	0.30 %	0.30 %	
Sulfur, S	<= 0.0050 %	<= 0.0050 %	

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