

2011



ALUMINUM ALLOY TECHNICAL SPECIFICATION SHEET

GENERAL: High copper content makes this alloy one of the best choices for aluminum machining. Although formability is very low, there are some applications that are cold formed from this alloy. The alloy's strength however is machinability and therefore is most commonly utilized in a variety of screw machine applications. As noted in the chemical composition below, through improvements to impact on environment, lead is currently held at lower limits today than in past years.

CHEMICAL COMPOSITION¹: Compositions in % max, unless otherwise specified.

Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Others		Al (min)
									Each	Total	
0.40	0.7	5.0-6.0	-	-	-	-	0.30	0.20-.4	0.05	0.15	Balance

¹ Complying with Aluminum Association, ASTM and Federal Specifications

MECHANICAL PROPERTIES AND CHARACTERISTICS

Although Beneke Wire Co makes every effort to provide you with accurate values in this section, when using for design purposes please consult with the Beneke technical staff or refer to any relevant standards and/or specifications.

Temper	Max Diameter ⁵ (inches)	Ultimate Tensile		Typical Shear ³ (ksi)	Typical % El ³ (in 10")	Resistance to Corrosion		Formability ²	Machinability ²
		Specification ¹ (ksi)	Typical ⁴ (ksi)			General ²	SCC ²		
2011-O	.680	-	22.0	-	-	D	D	B	C
-H12	.680	-	27.0	-	-	D	D	C	C
-T3	.680	45.0 min	52.0	35	15	D	D	E	A
-T4	.680	40.0 min	46.0	30	18	D	D	D	C

¹ Complying with Aluminum Association, ASTM and Federal Specifications

² Ratings A-E are relative ratings in decreasing order of merit

³ Industry averages as published by Aluminum Association. Should not be used for design purposes

⁴ Computed Beneke averages. Should not be used for design purposes

⁵ Larger sizes may be available subject to inquiry

FINISHES: Finish can be very important when buying 2011 alloy for machining purposes and in many cases is dependent upon customers equipment. For cold heading purposes, success is dependent upon the proper finish:

1) #4 Finish- A lustrous finish especially applicable for cold heading. This oxide free surface greatly improves tool life and uniformity in metal flow while heading. Product has enhanced, shiny appearance and will anodize well.

2) DOX Finish - A satiny white finish specifically used on heat treated cold heading wire and rod. This oxide free surface greatly improves uniformity in metal flow during heading, thus giving the added advantage needed when heading heat treated wire and rod.

3) MICRO Finish - A bright, lustrous finish applicable only to heat treated wire. This oxide free surface is particularly useful in escomatic wire or any application where close tolerances in diameter are required. Improved corrosion resistance is one of many advantages.