

2024



ALUMINUM ALLOY TECHNICAL SPECIFICATION SHEET

GENERAL: Substantial levels of copper combine with moderate levels of magnesium make this alloy one of the highest strength aluminum alloys when in the heat treated condition. Although 2024 alloy work hardens very quickly, it is used extensively in a broad range of cold heading applications. These applications include many types of bolts, screws, and rivets, including aerospace fasteners, Phillips head screws, and mandrels for use in blind rivets. Due to the chemical makeup of this alloy, it is susceptible to corrosion in common atmospheric conditions.

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

Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others		Al (min)
									Each	Total	
0.50	0.50	3.8-4.9	0.30-0.9	1.2-1.8	0.10	-	0.25	0.15	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		
2024-0	.715	35.0 max	27.2	18.0	20	D	B	B	D
-H12	.715	-	31.0	-	-	D	B	B	D
-H13	.715	32.0-42.0	33.4	22.0	16	D	B	B	C
-T3	.625	-	81.0	54.0	15	D	C	E	B
-T4	.715	62.0 min	69.5	45.0	17	D	C	D	B

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: 2024 alloy in H-tempers have improved formability when combined with a special finish. The following is a list of available finishes:

1) **#4 Finish** - A lustrous finish specifically 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.