

5056



## ALUMINUM ALLOY TECHNICAL SPECIFICATION SHEET

**GENERAL:** Magnesium is the primary constituent in this alloy, which is among the highest strength, non-heat treatable alloys. Due to its high strength and excellent formability, this alloy is used extensively in cold heading applications as well as wire forms and hinge pins. The most common cold heading temper is H32. Applications include solid, semi-tubular and tubular rivets; Phillips Head wood screws and threaded rods. Due to its excellent corrosion resistance, this alloy can be used without worry in atmospheres such as salt water where corrosion would normally be a problem with other metals.

**CHEMICAL COMPOSITION<sup>1</sup>:** Compositions in % max, unless otherwise specified.

Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others		Al (min)
									Each	Total	
0.30	0.40	.10	0.05-0.20	4.5-5.6	0.05-0.20	-	0.10	-	0.05	0.15	Balance

<sup>1</sup> 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 <sup>5</sup> (inches)	Ultimate Tensile		Typical Shear <sup>3</sup> (ksi)	Typical % El <sup>3</sup> (in 10")	Resistance to Corrosion		Formability <sup>2</sup>	Machinability <sup>2</sup>
		Specification <sup>1</sup> (ksi)	Typical <sup>4</sup> (ksi)			General <sup>2</sup>	SCC <sup>2</sup>		
5056-O	.525	46.0 max	42.0	26.0	27	A	B	A	D
-H12	.525	46.0 min	47.0	-	-	A	B	A	D
-H32	.525	44.0-52.0	46.0	28.0	20	A	B	A	D
-H14	.480	52.0 min	53.0	31.0	-	A	B	B	D
-H34	.480	50.0 min	51.5	30.0	-	A	B	B	D
-H16	.410	-	57.0	-	-	A	B	C	C
-H36	.410	-	55.0	-	-	A	B	B	D
-H18	.325	58.0 min	63.0	34.0	10	A	C	C	C
-H38	.325	55.0 min	60.0	32.0	15	A	B	C	C

<sup>1</sup> Complying with Aluminum Association, ASTM and Federal Specifications

<sup>2</sup> Ratings A-E are relative ratings in decreasing order of merit

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

<sup>4</sup> Computed Beneke averages. Should not be used for design purposes

<sup>5</sup> Larger sizes may be available subject to inquiry

**FINISHES:** Excellent finishes can be obtained with 5056 alloy, especially when Beneke's special finishes are used. The following is a list of available finishes:

**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) Anodizing Finish** - This oxide free surface has specific applications in products that are color anodized or bright dipped as a final operation. Adds a luster to the anodized part. Improves corrosion resistance.

**3) Bright Finish** - Clean, chrome-like finish comparable to stainless or chrome finish on steel; improves cosmetic appearance of aluminum wire.