

MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc.

485 Lexington Ave., New York 17, N.Y.

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Revised

ALUMINUM ALLOY EXTRUSIONS

5.6Zn - 2.5Mg - 1.6Cu - 0.3Cr (7075-T6511)

Stress-Relief Stretched and Straightened

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. FORM: Bars, rods, and shapes.
3. APPLICATION: Primarily for parts subject to excessive warpage during machining due to residual stresses, and for parts requiring high strength and whose fabrication does not involve welding or forming.
4. COMPOSITION:

Zinc	5.1 - 6.1
Magnesium	2.1 - 2.9
Copper	1.2 - 2.0
Chromium	0.18 - 0.40
Iron	0.7 max
Silicon	0.50 max
Manganese	0.30 max
Titanium	0.20 max
Other Impurities, each	0.05 max
Other Impurities, total	0.15 max
Aluminum	remainder
5. CONDITION: Solution heat treated, stress-relieved by stretching, and precipitation heat treated.
 - 5.1 Unless otherwise specified, extrusions shall be supplied with an as-extruded surface finish; light polishing to remove minor surface imperfections is permissible provided such imperfections can be removed within the dimensional tolerances.
 - 5.2 Material shall be stretched in the solution heat treated condition to produce a nominal permanent set of 1-1/2%, but not less than 1% nor more than 3%.
 - 5.3 Material may receive minor straightening after stretching of an amount necessary to meet the requirements of Section 8.

6. TECHNICAL REQUIREMENTS:6.1 Tensile Properties:

Nominal Diameter or Least Thickness or Area Inches	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 10,300,000)		Elongation % in 2 in. or 4D min
		psi, min	Extension Under Load in. in 2 in.	
Under 0.250, all areas	78,000	70,000	0.0176	7
0.250 to 0.500, excl, all areas	81,000	73,000	0.0182	7
0.500 to 3.000, excl, all areas	81,000	72,000	0.0180	7
3.000 to 4.000, excl,				
Area 20 sq in. and under	81,000	71,000	0.0178	7
Area over 20 to 32 sq in., incl	78,000	70,000	0.0176	6
4.500 to 5.000, incl,				
Area 32 sq in. and under	78,000	68,000	0.0172	6