

MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc.

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Revised

ALUMINUM ALLOY TUBING, SEAMLESS, DRAWN, CLOSE TOLERANCE
2.5Mg - 0.25Cr (5052-0)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily for ducts requiring small radius bends.

3. COMPOSITION:

Magnesium	2.2 - 2.8
Chromium	0.15 - 0.35
Iron + Silicon	0.45 max
Zinc	0.10 max
Manganese	0.10 max
Copper	0.10 max
Other Impurities, each	0.05 max
Other Impurities, total	0.15 max
Aluminum	remainder

4. CONDITION: Annealed.

5. TECHNICAL REQUIREMENTS:

5.1 Tensile Properties:

Tensile Strength, psi	35,000 max
Yield Strength at 0.2% Offset or at 0.0080 in. in 2 in. Extension Under Load (E = 10,100,000), psi	20,000 max
Elongation, % in 2 in.	
Strip	10 min
Full Section	12 min

5.1.1 When a dispute occurs between purchaser and vendor over the yield strength value, yield strength determined by the offset method shall apply.

5.2 Flattening: Tubing having nominal wall thickness less than 10% of the nominal OD shall be capable of withstanding, without cracking, flattening sideways under a load applied gradually at room temperature until the outside dimension under load is equal to 3 times the nominal wall thickness.

5.2.1 If tubing does not pass the flattening test of 5.2, a section of the tube not less than 1/2 in. in length and embracing 1/3 to 1/2 the circumference of the tube shall be capable of withstanding, without cracking, bending at room temperature through an angle of 180 deg around a diameter equal to the nominal wall thickness of the tubing with axis of bend parallel to axis of tube and with inside of tube on inside of bend.

6. QUALITY: Tubing shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts.