AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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STEEL SEAMLESS TUBING, CORROSION AND HEAT RESISTANT

18 Chromium - 8 Nickel

1. ACKNOWLEDGMENT: A vendor must mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. COMPOSITION:

Carbon	0.08 max
Manganese	2.50 max
Silicon	1.50 max
Phosphorus	0.03 max
Sulphur	0.03 max
Chromium	17.00 min
Nickel	8.00 min
Columbium	10 times carbon to 1.00
or	
Titanium	5 times carbon to 0.60

3. CONDITION: (a) Solution heat treated and pickled.

(b) Test pieces pulled at the rate of .05 inch per inch per minute shall conform to the following requirements:

Tensile Strength, lb/sq. inch	100,000 max
Elongation, % in 2 in., strip	35% min
Elongation, % in 2 in., full section of tube	40% min

(c) The tubing shall be capable of being expanded on a hardened and polished tapered steel pin having a 60° included angle, to a diameter 35% greater than the original diameter without cracking.

4. QUALITY: (a) This material must be uniform in quality, free from surface and internal defects and must not reveal material defects during fabrication.

(b) All material shall be free from grease or other foreign matter and shall have a workmanlike finish.

5. EMBRITTLEMENT: The material shall be capable of meeting the following test but the actual conducting of the test is an option of the purchaser:

After being heated to 1200° F for two hours and air cooled, embrittlement test specimens shall withstand a 48 hour boiling in 10% copper sulphate, 10% sulphuric acid solution without evidence of intercrystalline surface attack. After such immersion, the specimens must withstand cold bending through an angle of 180° over a diameter equal to the thickness of the specimen without cracking.

6. TOLERANCE: (a) The following variations in nominal outside diameter are permissible. All dimensions are in inches: