

AERONAUTICAL MATERIAL SPECIFICATION

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STEEL TUBING, SEAMLESS, CORROSION RESISTANT 12.5Cr (SAE 51410)

- 1. ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
- 2. APPLICATION:** Parts and assemblies, such as oil lines and air passages, requiring oxidation resistance up to 1000 F, but useful at the higher temperatures only when stresses are low.

3. COMPOSITION:

	Check Analysis		
	Under	Min or Over	Max
Carbon	0.15	max	-- 0.01
Manganese	1.00	max	-- 0.03
Silicon	1.00	max	-- 0.05
Phosphorus	0.040	max	-- 0.005
Sulfur	0.030	max	-- 0.005
Chromium	11.50 - 13.50		0.15 0.15
Nickel	0.75	max	-- 0.03
Molybdenum	0.50	max	-- 0.03
Copper	0.50	max	-- 0.03
Tin	0.05	max	-- --
Aluminum	0.05	max	-- --

- 4. CONDITION:** Cold drawn and annealed, unless otherwise specified.

- 4.1 Fabrication:** Any surface finishing operation applied to remove objectionable pits and surface blemishes shall be performed prior to the final anneal. A light polish to improve surface appearance may be employed after the final anneal. Passivation treatment shall follow any polishing treatment.

5. TECHNICAL REQUIREMENTS:

5.1 Tensile Properties:

Tensile Strength, psi	100,000 max
Elongation, % in 2 in.	
Strip	20 min
Full Section	25 min

- 5.2 Hardenability:** Tubing shall be capable of meeting the following test:

- 5.2.1** Specimens shall be heated to 1750 F \pm 10, held for 30 minutes and cooled in still air. Tensile strength of such specimens shall be not lower than 150,000 psi.

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