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AIRCRAFT AIRFRAME TUBING, CARBON AND ALLOY STEEL SEAMLESS ROUND

AIRCRAFT TUBING IS COMMONLY PRODUCED STRESS RELIEVED, ANNEALED, NORMALIZED OR OTHERWISE HEAT TREATED TO OBTAIN PROPERTIES REQUIRED FOR AIRBORNE STRUCTURAL PARTS, AND IS GENERALLY USED IN THE CONDITION RECEIVED FROM THE MILL. IT IS NOT INTENDED FOR AIRCRAFT PARTS WHERE MACHINING OUTSIDE OR INSIDE SURFACES TO EXACT DIMENSIONS IS NECESSARY.

CROSS SECTIONAL DIMENSIONAL AND WALL THICKNESS TOLERANCES:

NOMINAL OD, INCHES	(a) (c) OD TOLERANCE, INCH, PLUS OR MINUS		(b) WALL THICKNESS TOLERANCE + OR -
	ANNEALED, NORMALIZED OR COLD DRAWN AND STRESS RELIEVED	QUENCHED AND TEMPERED	
3/16 TO (NOT INCLUDING) 1/2	.004	.010	15
1/2 TO (NOT INCLUDING) 1-1/2	.005	.015	10
1-1/2 TO (NOT INCLUDING) 3-1/2	.010	.030	10
3-1/2 TO (INCLUDING) 5-1/2	.015	.045	10

- (a) TOLERANCES ARE APPLICABLE TO INDIVIDUAL MEASUREMENTS.
- (b) FOR TUBING WITH INSIDE DIAMETER LESS THAN 1/2 INCH (OR LESS THAN 5/8 INCH WHEN THE WALL THICKNESS IS MORE THAN 20% OF THE OUTSIDE DIAMETER) WHICH CANNOT BE SUCCESSFULLY DRAWN OVER A STATIONARY MANDREL, THE WALL THICKNESS MAY VARY 15% OVER OR UNDER THAT SPECIFIED.
- (c) TUBING WITH WALL THICKNESS LESS THAN 3% OF THE NOMINAL OD WILL BE ALLOWED AN OVALITY TOLERANCE OF ±1/2% OF THE NOMINAL OD IN ADDITION TO THE TOLERANCE INDICATED.

STRAIGHTNESS:

- (1) AS FINISHED, ANNEALED, NORMALIZED OR STRESS RELIEVED.

NOMINAL OD INCHES	WALL THICKNESS	MAXIMUM CURVATURE (DEPTH OF ARC) INCHES	
		PER FOOT	IN ANY THREE FEET
ALL SIZES	OVER 3% OF OD BUT NOT OVER .50 INCH	.010	.030

- (2) QUENCHED AND TEMPERED - THE DEPARTURE FROM STRAIGHTNESS OF TUBING 5 INCHES OR LESS NOMINAL OD SHALL NOT EXCEED .060 INCHES IN ANY 3 FEET OF LENGTH OR .020 INCHES TIMES THE LENGTH IN FEET FOR SHORTER LENGTHS.

LENGTH: LENGTH SHALL VARY NOT MORE THAN +1/8; -0 INCHES.

FOR STANDARD SIZES FOR ROUND TUBING SEE DRAWING AND10102.

ⓐ CANCELED AFTER 5 MAY 1967. USE AMS2253D.

THIS IS A DESIGN STANDARD. NOT TO BE USED AS A PART NUMBER.

CUSTODIANS Navy-BuAer Air Force	OTHER INT. A - N - AF -	MILITARY STANDARD		MS33529(ASG)
	TOLERANCES - SEAMLESS STEEL TUBING, AIRCRAFT AIRFRAME, ROUND			
PROCUREMENT SPECIFICATION	SUPERSEDES: AND10368	SHEET 1	OF 1	

APPROVED 28 Apr 1953 REVISED 5 May 1967