

# ASTM A513 TUBE SPECIFICATIONS

## GENERAL CHARACTERISTICS

Round, square, rectangular, and specialty shape tubing are all covered by this specification. This specification applies to mechanical tube made of carbon and alloy steel that has been electric resistance welded. Mechanical tube composed of hot- or cold-rolled steel is covered by this specification. Unless otherwise stated, [ASTM A513 tube](#) is made in compliance with the mechanical and chemical property specifications of ASTM A513 Types 1 and 2, with Grades MT 1010 to MT 1020.

## MECHANICAL PROPERTIES OF ASTM A513 TUBE:

Mechanical properties	Grade	UTS ksi	YS ksi	%EL
ASTM A513	1010	45	32	15
ASTM A513	1015	48	35	15
ASTM A513	1020	52	38	12

## ASTM A513 CHEMICAL COMPOSITION FOR TUBE:

Designation		%C	%Mn	%S	%P
Grade 1010	Min	0.08	0.30	--	--
	Max	0.13	0.60	0.035	0.035
Grade 1015	Min	0.13	0.30	--	--
	Max	0.18	0.60	0.035	0.035
Grade 1020	Min	0.18	0.30	--	--
	Max	0.23	0.60	0.035	0.035

## TOLERANCE OF ASTM A513 TUBES

The mean outside diameter must fall within the given tolerance even if the ovality is 50% higher than the outer tolerances. The formula for calculating the maximum squareness tolerance is largest dimension across flats x 0.006 in. The straightness tolerance for square and rectangular tubes is 1/16" in 3 feet, whereas it is 0.03" in 3 feet for round tubes.

TWIST TOLERANCE	
Largest Dimension (In.)	Tolerance in 3-feet (In.)
Over 1-1/2" to 2-1/2", incl.	0.062
Over 2-1/2" to 4", incl.	0.075
Over 4" to 6", incl.	0.087

Shape Length Type	Lengths (Ft.)	Tolerances (In.)
Round	Over 10' to 24', incl.	(+/-) 1/4"
Round	Over 24' to 34', incl.	(+/-) 5/16"
Round	Over 34' to 40', incl.	(+/-) 3/8"
Square & Rectangular	Over 12' to 20', incl.	(+/-) 1/8"
Square & Rectangular	Over 20' to 30', incl.	(+/-) 3/16"
Square & Rectangular	Over 30' to 40', incl.	(+/-) 3/8"

For more details visit: [ASTM A513 Tube Supplier](#)

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