

**Tolerances
Copper and Copper Alloy Wire**

RATIONALE

This document has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE:

This specification covers established inch/pound manufacturing tolerances applicable to copper and copper alloy wire ordered to inch/pound dimensions. These tolerances apply to all conditions, unless otherwise noted.

2. DIAMETER OR THICKNESS:

2.1 Metallic Coated, Not Redrawn:

2.1.1 Round Only, Non-Refractory: See Table 1.

TABLE 1 - Diameter or Thickness Tolerance Round, Non-Refractory

Specified Diameter Inch	Tolerance	Tolerance
	Inch plus	Inch minus
Up to 0.010, incl	0.0001	0.0001
Over 0.010	3.0%D	1.0%D

2.2 Bare and Metallic Coated, Cold Drawn:

See 2.2.1 and 2.2.2.

2.2.1 Round, Hexagon, and Octagon: See Table 2.

2.2.2 Square and Rectangular: See Table 3

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TABLE 2 - Diameter or Thickness Tolerance, Round, Hexagon, and Octagon

Specified Diameter or Distance Between Parallel Surfaces Inch	Tolerance, Inch Plus and Minus Non-Refractory Round	Tolerance, Inch Plus and Minus Non-Refractory Hexagon Octagon	Tolerance, Inch Plus and Minus Refractory Round	Tolerance, Inch Plus and Minus Refractory Hexagon Octagon
Up to 0.010, incl	0.0001	--	0.0002	--
Over 0.010 to 0.020, incl	0.0002	--	0.0003	--
Over 0.020 to 0.030, incl	0.0003	--	0.0005	--
Over 0.030 to 0.040, incl	0.0004	0.0008	0.0007	0.002
Over 0.040 to 0.050, incl	0.0005	0.0010	0.0008	0.003
Over 0.050 to 0.060, incl	0.0006	0.0012	0.0010	0.003
Over 0.060 to 0.080, incl	0.0008	0.0016	0.0015	0.004
Over 0.080 to 0.150, incl	0.0010	0.002	0.002	0.004
Over 0.150 to 0.500, incl	0.0015	0.003	0.002	0.004
Over 0.500 to 0.750, incl	0.002	0.004	0.003	0.005

TABLE 3 - Diameter or Thickness Tolerances, Square and Rectangular

Specified Thickness Inch	Tolerance, Inch Plus and Minus Width Ranges Inch Up to 0.500, incl Copper	Tolerance, Inch Plus and Minus Width Ranges Inch Up to 0.500, incl Non-Refractory	Tolerance, Inch Plus and Minus Width Ranges Inch Up to 0.500, incl Refractory	Tolerance, Inch Plus and Minus Width Ranges Inch Over 0.500 to 1.250, incl Copper	Tolerance, Inch Plus and Minus Width Ranges Inch Over 0.500 to 1.250, incl Non-Refractory	Tolerance, Inch Plus and Minus Width Ranges Inch Over 0.500 to 1.250, incl Refractory
Up to 0.013, incl	0.0010	0.0010	0.0015	0.0013	0.0013	0.002
Over 0.013 to 0.050, incl	0.0013	0.0013	0.0015	0.0015	0.0015	0.002
Over 0.050 to 0.090, incl	0.0015	0.0015	0.002	0.002	0.002	0.003
Over 0.090 to 0.130, incl	0.002	0.002	0.003	0.0025	0.0025	0.004
Over 0.130 to 0.188, incl	0.003	0.003	0.004	0.0035	0.0035	0.0045

3. WIDTH; RECTANGULAR:

See Table 4.

TABLE 4 - Width Tolerances, Rectangular

Specified Width Inches	Tolerance, Inch Plus and Minus Non-Refractory	Tolerance, Inch Plus and Minus Refractory
Up to 0.050, incl	0.0013	0.0015
Over 0.050 to 0.090, incl	0.0015	0.002
Over 0.090 to 0.130, incl	0.002	0.003
Over 0.130 to 0.188, incl	0.003	0.004
Over 0.188 to 0.500, incl	0.0035	0.005
Over 0.500 to 1.250, incl	0.005	0.007