

TABLE 16.3 Property Limits—Rod, Bar, Tube, Pipe, Structural Profiles and Sheet ④—Electric Conductors

PRODUCT	ALLOY AND TEMPER	SPECIFIED THICKNESS in.	TENSILE STRENGTH ksi				ELECTRICAL CONDUCTIVITY ① min. percent IACS at 68F
			ULTIMATE		YIELD		
			min.	max.	min.	max.	
Extruded rod, bar, tube, pipe, and structural profiles	1350-H111	All	8.5	..	3.5	..	61.0
	6101-H111	0.250–2.000	12.0	..	8.0	..	59.0
	6101-T6	0.125–0.500	29.0	..	25.0	..	55.0
	6101-T61	0.125–0.749 0.750–1.499 1.500–2.000	20.0	..	15.0	..	57.0
			18.0	..	11.0	..	57.0
			15.0	..	8.0	..	57.0
	6101-T63	0.125–1.000	27.0	..	22.0	..	56.0
6101-T64	0.125–1.000	15.0	..	8.0	..	59.5	
6101-T65	0.125–0.749	25.0	32.0	20.0	27.0	56.5	
Rolled bar	1350-H12	0.125–1.000	12.0	..	8.0	..	61.0
Sawed-plate bar	1350-H112	0.125–0.499	11.0	..	6.0	..	61.0
		0.500–1.000	10.0	..	4.0	..	61.0
		1.001–1.500	9.0	..	3.5	..	61.0
Sheet	1350-O	0.006–0.125	8.0	14.0	61.8

TABLE 16.4 Equivalent Resistivity Values —Electric Conductors

VOLUME CONDUCTIVITY percent IACS at 68°F	EQUIVALENT RESISTIVITY AT 68°F ⑥	
	VOLUME	
	ohm—circular mil/ft.	microhm—in.
52.5	19.754	1.2929
53.5	19.385	1.2687
53.8	19.277	1.2617
53.9	19.241	1.2593
54.0	19.206	1.2570
54.3	19.099	1.2501
55.0	18.856	1.2341
56.0	18.520	1.2121
56.5	18.356	1.2014
57.0	18.195	1.1908
59.0	17.578	1.1505
59.5	17.430	1.1408
61.0	17.002	1.1128
61.2	16.946	1.1091
61.3	16.918	1.1073
61.4	16.891	1.1055
61.5	16.863	1.1037
61.8	16.782	1.0983
62.0	16.727	1.0948
62.1	16.700	1.0931
62.2	16.674	1.0913
62.3	16.647	1.0896
62.4	16.620	1.0878

Footnotes for Tables 16.1 Through 16.4

- ① To convert conductivity to maximum resistivity use Table 16.4.
- ② Any test in a lot.
- ③ Average of all tests in a lot.
- ④ The data base and criteria upon which these mechanical property limits are established are outlined on page 6-1 under “Mechanical Properties.”
- ⑤ Applicable up thru 0.250 in.
- ⑥ Equivalent weight resistivity in ohm-lb./mile² at 68°F equals:

$$9844.8 \times \frac{1}{N} \times \rho$$

where N is the volume conductivity from the first column and ρ is the alloy density in lbs./in.³ (see Table 2.4)