

TECHNICAL SPECIFICATION FOR BARE ALUMINUM ALLOY CONDUCTOR

JPSCO SPECIFICATION NO 1553-S- 97

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The Technical Specifications, General Requirements forms a part of the specification.

1. SCOPE
 - 1.1 These specifications cover 6201-T81 Stranded Bare Aluminum Alloy conductor for use on Overhead Transmission and Distribution 50 Hertz Power System.
2. GENERAL REQUIREMENTS
 - 2.1 INFORMATION

Refer to "Submittal of Information" Section 2 Paragraph 2.1 of "Specifications and Requirements".
 - 2.2 DRAWING ETC. BY SUPPLIER

Refer to "Submittal of Information" Section 2 paragraph 2.2 of "Specifications and Requirements".
3. STANDARDS AND SERVICE CONDITIONS
 - 3.1 STANDARDS
 - 3.1.1 Refer to "Codes and Standards" Section 3 of "Specifications and Requirements".

3.1.2 The following standards shall be observed in the design, manufacture, performance and tests.

3.1.2.1 ASTM B 398 Aluminum Alloy 6201-T81 for Electrical purposes

3.1.2.2 ASTM B 399 Specification for Concentric-Lay-Stranded 6201-T81 Aluminum Alloy Conductors

3.1.2.3 ASTM B 230 Aluminum Wire, 1350-H19 for Electrical Purposes.

3.1.2.4 ASTM B 231 Aluminum Conductors, Concentric-Lay-Stranded

3.1.2.5 NEMA WC-21 Non-returnable reels for wire and cable

3.1.2.6 IPCEA S66-524

3.2 SERVICE CONDITIONS

3.2.1 Refer to "Geographic Conditions" Section 4 of "Specifications and Requirements".

4. DETAILED REQUIREMENTS

4.1 TYPE

	CONDUCTOR SIZE AND TYPE	STRANDING AND DIA. OF WIRES	DIAMETER OF CONDUCTOR	TENSILE STRENGTH
4.1.1	394.5 KCMIL, 6201-T81 Stranded Al. Alloy Code Name "CANTON"	19 x 0.1441" (19 x 3.66 mm)	0.721" (18.30 mm)	13,300 lbs (58.56 KN)
4.1.2	155.4 KCMIL, 6201-T81 Stranded Al. Alloy Code Name "ANAHEIM"	7 x 0.1490" (7 x 3.78 mm)	0.477" (11.34 mm)	5,390 lbs (23.75 KN)
4.1.3	77.47 KCMIL, 6201-T81 Stranded Al. Alloy Code Name "AMES"	7 x 0.1052" (7 x 2.67 mm)	0.316" (8.01 mm)	2,800 lbs (12.42 KN)

4.2 LINE DESIGN CONDITIONS

4.2.1 DISTRIBUTION CIRCUITS

4.2.1.1 LOADED: Tension shall not exceed 45 percent of ultimate strength

4.2.1.2 INITIAL UNLOADED: Tension shall not exceed 33 1/3 percent of ultimate strength at 60 F.

4.2.1.3 FINAL UNLOADED: Tension shall not exceed 20 percent of ultimate strength at 60 F.

4.2.1.4 LOADING CONDITIONS

4.2.1.4.1 Loadings are based on wind conditions only, the values used in designs are as follows:

4.2.1.4.1.1 15.93 kg/m (9 lbs/ft)

4.2.1.4.1.2 26.55 kg/m (15 lbs/ft)

4.2.2 TRANSMISSION CIRCUITS

4.2.2.1 Loaded: Tension shall not exceed 50 percent of ultimate strength at 10 C.

4.2.2.2 Final Unloaded: Tension shall not exceed 20 percent of ultimate strength at +25 C.

4.2.2.3 LOADINGS

4.2.2.3.1 Loading is based on wind condition only, the value used in design is as follow

4.2.2.3.1.1 107.5kg/m

*Conductor types detailed in paragraphs 4.1.1., 4.1.2, and 4.1.3 of section 4 are used on distribution circuits. However, only conductor type detailed in paragraph 4.1.1 is used on transmission circuits.

4.3 CONSTRUCTION

4.3.1 The conductors shall be constructed in accordance with ASTM B 399 standards.

4.4 DATA TO BE FURNISHED

4.4.1 Conductor sag and tension charts for "Line Design Conditions" in section 4, paragraph 4.2 of this specification shall be furnished by Bidder.

4.4.2 The "SUPPLIER" is required to furnish four (4) sets of templates for each conductor sag and tension characteristics covering the recommended range of spans

for "Line Design Conditions" given in Section 4, Paragraph 4.2 of this specification.

5. TESTS

Refer to "Tests" Section 5 of "Specifications and Requirements".

6. PACKAGING AND MARKING

6.1 PACKAGING

6.1.1 Conductors shall be supplied in lengths according to material schedule, on non-returnable export type reels, designed and constructed in accordance with NEMA WC-21 standard.

6.1.1.1 Conductors of the type listed in Section 4 Paragraph 4.1.1. of this specification shall be supplied on Metal Reels.

6.1.1.2 Conductors of the types listed in Section 4 Paragraphs 4.1.2, 4.1.3 of this specification shall be supplied on Wooden Reels.

6.2 MARKING

6.2.1 Each reel must be clearly marked or tagged (manufacturer's standard showing legibly all essential information such as product identification, item description (conductor type and size) Length and Gross, Tare and Net Weight.

6.2.2 For "Export Marking" refer to Section 8 of "Specifications and Requirements".