INCH-POUND

A-A-52416
December 7, 1992

COMMERCIAL ITEM DESCRIPTION

TERMINALS, LUG; AND SPLICES, CONDUCTOR (ELECTRICAL, SOLDERLESS, FOR AUTOMOTIVE USE)

The General Service Administration has authorized the use of this commercial item description (CID) as a replacement for MIL-T-13513B(AT), which is canceled.

1.0 Abstract. This commercial item description (CID) covers crimp-type, solderless, electrical, lug terminals and splices for use with insulated electrical conductors (cables) for automotive vehicles.

1.1 Classification. Terminals and splices shall be of the following types, as specified (see 5.2):

Type I	- Terminals, Nonwatersealed type.
Type II	- Terminals, Watersealed type.
Type III	- Splices, Nonwatersealed.

2.0 Salient characteristics.

2.1 Materials. Materials shall be as specified herein and in applicable drawings. Materials shall be free from defects which adversely affect performance or serviceability of the finished product. The use of recovered material made in compliance with regulatory requirements is acceptable providing that all requirements of this CID are met (see 5.5).

2.1.1 Type I and III. Type I terminals and type III splices shall be fabricated of copper or aluminum bronze conforming to ASTM B133, B272.

2.1.2 Type II. Type II terminals (watersealed type) shall be fabricated of materials as specified in Drawing 7056700.

2.2 Design and construction.

2.2.1 Type I and III. Type I terminals and type III splices shall be constructed as specified herein and in accordance with applicable drawings.

Beneficial comments, recommendations, additions, deletions clarifications, etc. and any other data which may improve this document should be sent by letter to: U.S. Army Tank-Automotive Command, ATTN: AMSTA-GDS, Warren, MI 48397-5000.

AMSC N/A FSC 5940

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

2.2.2 Type II. Type II (watersealed type) terminals shall be constructed as specified herein and in accordance with the applicable item (part number) specified in Drawing 7056700.

2.3 Performance. Terminals or splices, when connected to the intended conductor(s) by the applicable crimping tool, shall meet the performance requirements specified herein.

2.3.1 Voltage drop.

2.3.1.1 Terminals. The terminals and attached conductor shall be connected into a circuit adjusted to pass the current specified in table I. The millivolt drop shall be measured from the intersection of the torque and barrel to a point on the conductor 1/4 inch from the open end of the barrel. When terminals have conductor insulation supports, this point shall be 1/8 in from the end of the support. The terminals shall meet the "initial" voltage drop as specified in table I.

2.3.1.2 Splices. The splices and attached conductor shall be connected into a circuit adjusted to pass the current specified in table I. The millivolt drop shall be measured from a point 1/4 inch from the barrel of one conductor to a point 1/4 inch distant from the barrel on the other conductor. The splices shall meet the "initial" voltage drop as specified in table I except the "initial" voltage drop values shall be increased by 33 percent (%).

TABLE I. Test requirements.

Conductor size (AWG 1/)	Test current (amperes ± 5%)	Maximum voltage drop (millivolts)		Minimum mechanical strength [pounds (kilograms)]
		Initial	After test	
20	11	7	12	19 (8.62)
18	16	7	12	28 (12.70)
16	22	7	12	37 (16.78)
14	32	6	11	45 (20.41)
12	44	5	8	95 (43.09)
10	69	5	8	150 (68.04)
8	95	5	8	195 (88.45)
6	139	5	8	270 (122.47)
4	165	5	8	350 (158.76)
2	226	5	8	555 (251.75)
1	264	5	8	650 (294.84)
0	307	5	8	760 (344.74)
00	353	5	8	860 (390.10)
0000	460	5	8	1000 (453.60)

1/ American Wire Gage (AWG).

2.3.2 Current rating. The terminal or splice temperature shall not exceed by more than 9 degrees Fahrenheit (°F), the temperature of the attached conductor stranding. This shall be verified by attaching the terminal or splice to an appropriate size conductor and passing the current specified in table I through the test circuit.

2.3.3 Current overload. The terminal or splice temperature shall not exceed by more than 18°F the temperature of the attached conductor stranding. The value recorded in the subsequent voltage drop shall meet the "after test" requirements specified in table I.

2.3.4 Mechanical strength. The terminals or splices shall withstand the minimum mechanical strength requirements specified in table I without breaking or becoming distorted to the extent of being unfit for further use. The tensile load shall be applied at a rate not less than 4 inches per minute.

2.4 Vibration. The terminals or splices shall be capable of withstanding a vibration for 1 hour in each of the of three perpendicular planes at an amplitude of 0.030 inch (0.762 mm) [0.060 inch (1.524 mm) in total excursion] and a frequency of 10 to 55 to 10 cycles per second with the frequency range to be accomplished once each minute.

2.4.1 Watersealed type. Type II (watersealed type) terminals when attached and crimped to a conductor shall be capable of being submerged in water under hydrostatic pressure of 6 psi for at least 6 hours with little or no evidence of leaking at the crimped point.

2.5 Corrosion protection. The terminals or splices shall be tin plated to provide corrosion protection in a salt laden atmosphere. This shall be verified by subjecting the items to a salt spray in accordance with ASTM B117 for 200 hours minimum.

2.6 Identification marking. Unless otherwise specified in the drawings, the terminals or splices shall be suitably identified/marked with the manufacturer's CAGE code and part number, the conductor (cable) size, and drawing part number.

2.7 Workmanship. Workmanship employed in the manufacture of the terminals or splices shall be of a quality necessary to produce items free of rust, burrs, cracks, dirt, cause faulty or incomplete connection, or any other defects which would affect the serviceability, appearance, or safety of personnel.

3.0 Quality assurance provisions.

3.1 Responsibility for inspection. The contractor is responsible for the performance of all inspection (examinations and tests).

3.2 Contractor certification. The contractor shall certify and maintain substantiating evidence that the product offered meets the salient characteristics of this commercial item description and that the product conforms to the producer's own drawings, specifications, standards, and quality assurance practices. Items with known defects shall not be submitted for Government acceptance. The Government reserves the right to require proof of such conformance prior to the first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

4.0 Preservation, packaging, packing, labeling, and marking. Preservation, packaging, packing, and marking for the desired level shall be in accordance with the applicable packaging requirements specified by the contracting authority (see 5.2).

5.0 Notes.

(This section contains information of a general or explanatory nature that may be helpful but is not mandatory.)

5.1 Addresses for obtaining copies of referenced documents.

5.1.1 Government drawings. Copies of Drawing 7056700 "Terminal, Special, Waterseal" is available from the Contracting Officer, U.S. Army Tank-Automotive Command, Warren, MI 48397-5000.

5.1.2 Non-Government publications. ASTM B117 "Method of Salt Spray (Fog) Testing"; ASTM B133 "Rod, Bar, and Shapes"; ASTM B272 "Flat Products With Finished Edges" are available from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103-1187.

5.2 Ordering data. Acquisition documents must specify the following:

a. Title, number, and date of this CID.
b. Type, applicable drawing and part no. (see 1.1, 2.2.1, and 2.2.2).
c. Selection of applicable level and packaging requirements (see 4.0).

5.3 Metric product. Terminals that are manufactured to metric dimensions will be considered on the following basis:

a. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pound units, provided they fall within specified tolerances using conversion tables contained in the latest revision of ASTM E380, and all other requirements of this CID are met.

b. If a product is manufactured to metric dimensions and those dimensions exceed the tolerances specified in the inch/pound units, a request should be made to the contracting officer to determine if the product is acceptable.

c. The contracting officer has the option of accepting or rejecting the product.

5.4 Cross reference. Items covered by this CID are interchangeable/ substitutable with items conforming to MIL-T-13513B(AT).

5.5 Regulatory requirements. Recovered material is material made in conformance to section 402 of the Clean Air Act (33 U.S.C. 1342 et. seq).

Custodian:
Army - AT
Air Force - 99

Review activities:
Army - AR, EA, MI
DLA - GS

Preparing activity:
Army - AT

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