

METRIC

A-A-52404

July 20, 1992

## COMMERCIAL ITEM DESCRIPTION

## INSULATION SHEET, CELLULAR, PLASTIC: THERMAL (METRIC)

The General Services Administration has authorized the use of this commercial item description as a replacement for MIL-I-14511C, which is canceled.

1. Abstract. This commercial item description (CID) covers a unicellular, elastomeric, expanded plastic thermal insulating material whose intended use is to insulate metallic personnel compartment panels of military vehicles, as a thermal barrier for temperatures ranging from 74 degrees Celsius (°C) to minus (-) 54°C.

1.1 Size. The sheet insulation sizes shall be designated by using alpha code.

1.2 Sheet form. The sheet form shall be designated with arabic numeral 1.

2. Salient characteristics.

2.1 Materials. The insulation sheet shall be made of slab, bonded, or molded urethane foams. The use of recovered material is acceptable, provided that all requirements of this CID are met (see 5.5).

2.2 Design and construction.

2.2.1 Dimensions and tolerances. Dimensions and tolerances shall be as specified by the contracting activity.

2.2.2 Color. Unless otherwise specified, the color of the insulating material shall be green 383, color chip no. 34094 per FED-STD-595.

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 5640

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

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**2.3 Performance.**

**2.3.1 Compression set.** The resilience capability of the insulation material shall be 35 to 50 percent (%) when tested in accordance with method B of ASTM D395.

**2.3.2 Volume change on heat aging.** The volume change on heat aging insulation material shall be not more than 8% when tested in accordance with method 7221 of FED-STD-601.

**2.3.3 "K" Factor.** The heat transfer coefficient of insulation material shall be no more than 0.043 watt per meter Kelvin [W/(mK)] at 74°C and minus 54°C.

**2.3.4 Density.** The density of insulation material shall be not more than 120.138 kilogram per cubic meter (kg/m<sup>3</sup>).

**2.3.5 Tensile strength.** The tensile strength of the insulation material shall be not less than 344.737 kilopascal (kPa) when tested in accordance with ASTM D412 or ASTM D3574.

**2.3.6 Elongation.** The elongation of the insulation material shall be not less than 200%. The elongation shall be measured and recorded during tensile strength testing (see 2.4.5).

**2.3.7 Water absorption.** The water absorption of the insulation material shall be not more than 4% by weight when tested in accordance with method 12411 of FED-STD-601.

**2.3.8 Flame resistance.** The insulation shall be self-extinguishing. This shall be verified by applying a candle flame to the lower or free end of a clamped specimen for 15 seconds. The candle shall then be removed. If the flame ceases within 5 seconds, the insulation material shall be considered self-extinguishing.

**2.3.9 Brittleness.** The insulation material shall withstand a 180 degree bend over an 8 mm diameter rod in 15 seconds at a temperature of minus 54 ± 3°C without cracking.

**2.3.10 Dimensional change.** The change in the linear or transverse dimensions shall be not more than 1.5%.

**2.3.11 Coherency with adhesive cemented joint.** The tensile strength of the cemented joint shall not be less than 344.737 kPa.

**2.4 Identification and marking.** Identification and marking shall be permanent and legible in accordance with MIL-STD-130 and shall include the manufacturer's identification, and the part identification number (PIN).

**2.5 Workmanship.** Workmanship shall be in accordance with the manufacture of high quality insulation sheets. This shall be evidenced by the absence of any defects which are detrimental to their appearance or serviceability. Insulation sheet shall be free from large voids, foreign inclusions, contaminations, seams, and from any material that accelerates aging and deterioration.

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3. 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. Preservation, packaging, packing, labeling, and marking. Preservation, packaging, packing, labeling, and marking for the desired level shall be as specified in the contract (see 5.2).

5. 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 specifications and standards. Copies of federal and military specifications and standards are available from the Navy Publications and Printing Service Office, Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

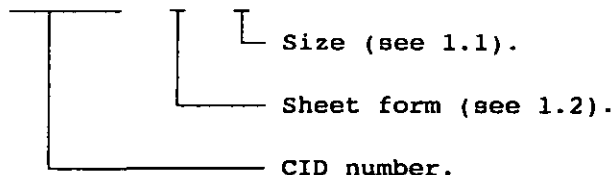
5.1.2 Non-Government publications. ASTM D395 "Standard Test Methods for Rubber Property Compression Set"; ASTM D412 "Standard Test Method for Rubber Properties in Tension"; and ASTM D3574 "Standard Method of Testing Flexible Cellular Materials-Slab, Bonded, and Molded Urethane Foams" are available from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

5.2 Ordering data. Acquisition documents must specify the following:

- a. Title, number, and date of this commercial item description.
- b. Size and PIN of insulation sheet (see 5.3).
- c. Dimensions and tolerances (see 2.2.1).
- d. Color if not as specified (see 2.2.2).
- e. Issue of the DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 5.1.1 and 5.1.2).
- f. Selection of applicable level and packaging requirements (see 4).

5.3 CID based PIN structure. The PINs to be used for insulation sheets acquired to this CID are created as follows:

A 52404 - 1 - X



5.4 Cross referenced data. Insulation sheet conforming to this document are interchangeable/substitutable with insulation sheet conforming to MIL-I-14511C.

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5.5 Regulatory requirements. The offeror/contractor is encouraged to use recovered materials in accordance with Public Law 94-580 to the maximum extent practicable.

Custodians:

Army - AT  
Air Force - 99

Preparing activity:

Army - AT

(Project 5640-0556)

Review activities:

Army - MI, AR, MR  
Air Force - 84

User activities:

Army - AV, ME