



ENGINEERING MATERIAL SPECIFICATION

Material Name

Specification Number

MULTI-PLY DEADENER PAD, MOLDED
MULTI-PLY DEADENER PAD, MOLDED

SK-M99G9500-A
DELTA SK-M99G9500-B

1. SCOPE

The material defined by this specification is a molded multi-ply deadener pad with a flexible heavy layer based on bitumen and/or synthetic resins and a non-woven fiber padding consisting of natural and/or synthetic fibers bonded with synthetic resins. The fiber padding may be replaced by a polyurethane foam pad.

2. APPLICATION

This material is generally used as a sound absorption pad in the passenger compartment and/or as specified on the Engineering Drawing.

3. REQUIREMENTS

The material shall be conditioned for a minimum of 24 h at 23 +/- 2 C and 50 +/- 5 % relative humidity prior to testing.

3.1 CONSTRUCTION

The material consists of a molded flexible heavy layer based on bitumen and/or synthetic resins and a molded non-woven fiber padding consisting of natural and/or synthetic fibers bonded with synthetic resins. The fiber padding may be replaced by a polyurethane foam pad (chipfoam). The fiber or foam pad and heavy layer must be laminated by appropriate means

3.2 THICKNESS OF FIBER PADDING (mm)

As specified on the Engineering Drawing.

3.3 THICKNESS HEAVY LAYER (mm)

As specified on the Engineering Drawing.

3.4 MAXIMUM TOTAL WEIGHT OF MOLDED PART (kg)

As specified on the Engineering Drawing.

3.5 COLD IMPACT RESISTANCE (- 30 C) (FLTM EU-BO 51-1, except weight-force of steel ball 2.5 N)

Date	Release No.	Released
1994 12 15		Revised and Retyped, was 12 pages
1985 01 17	B/001674 TP	Revised 3.10, .12, .15, .16, 4 Del. Preliminary
1981 06 12	B/453222 TP	Last Revision

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3.6 COHESIVE STRENGTH (Fiber Pad), min

2 kN/m²

Test Method:

- 1) Three test specimens 100 x 100 mm shall be bonded to two specimen holders each, using adhesive S-M2G4610-A or equivalent, and conditioned for 24 hours at room temperature.
- 2) Determine cohesive strength in a tensile testing machine at a rate of pull 25 mm/minute.

3.7 HEAT RESISTANCE

No separation between fiber or foam padding and heavy layer or separation within fiber or foam padding. No deterioration of heavy layer pad.

Test Method: (See Figure 2)

- 1) Cut from material under test 3 specimens of 200 x 200 mm and bond with the fiber pad or foam surface to primed metal panels of 300 x 300 mm using adhesive S-M2G4610-A or equivalent.
- 2) Condition test specimens for 2 hours at room temperature.
- 3) Suspend in a mechanical convection oven maintained at 90 +/- 2 C for 2 weeks.

3.8 HEAT SHRINKAGE

The molded part shall not shrink in excess of 3 % in any direction after 1 hour at 80 +/- 2 C air temperature. Cool to room temperature prior to measuring shrinkage.

3.9 PALLETIZING

The heavy layer shall have an anti-blocking surface finish to allow plied-up parts to be separated easily without tearing. There shall be no fiber or foam residue sticking to the heavy layer surface after separation.

Test Method:

- 1) Cut 5 identical specimens 200 x 200 mm from molded part and determine weight and thickness per specimen.
- 2) Ply-up and cover with an aluminum plate of same size.
- 3) Load with a dead weight equalling a ply-up height of 500 mm minus weight of 5 specimens and cover plate.



- 4) Expose test assembly in a mechanical convection oven maintained at 50 +/- 2 C for 2 weeks. Cool to room temperature, remove weight and cover plate and examine as described above.

3.10 MILDEW RESISTANCE AND ODOR

No evidence of mildew development. The odor test shall be in accordance with FLTM BO 131-01, maximum Rating 2.

Test Method: Place a 100 x 100 mm sample, soaked with distilled water in a beaker glass of one liter capacity and cover tightly with a lid. Maintain assembly at a temperature of 35 +/- 2 C for 14 days. Remove lid and examine for evidence of mildew development.

3.11 FLAMMABILITY

3.11.1 SK-M99G9500-A (ISO 3795)

Burn Rate, max 250 mm/minute

DELTA 3.11.2 SK-M99G9500-B

Burn Rate, max 100 mm/minute

In order to comply with Federal Motor Vehicle Safety Standard No. 302, the materials, portions of components, and composites shall not burn or transmit a flame across their surface, at a rate of more than 100 mm/minute. To demonstrate compliance, the sample size and method of testing shall be in accordance with FLTM EU-BN 24-2.

3.11.2.1 Performance-Environmental Ageing Requirement

All materials, portions of components, and composites defined by this specification that have not been treated, modified or reformulated, and exceed a maximum burn rate of 75 mm per minute as specified by the Flammability Lot Sampling Plan of FLTM EU-BN 24-2, must be evaluated for permanency of the materials' flame retardant properties per SK-M99G9500-A, Table 1 according to the accelerated environmental ageing requirements applicable to the basic material category of this particular specification.