



MULTI-PLY DEADENER PAD

▽ S-M99G4604-C

1. SCOPE

The material defined by this specification is a multi-ply deadener pad with a bitumen cardboard cover as surface finish, a bitumen and/or plastic base flexible heavy layer and a fiber padding consisting of natural and/or synthetic fibers. The fiber padding may be replaced by a polyurethane foam pad.

2. APPLICATION

This material is used as a sound deadener pad in the passenger compartment, e.g. floor pan, etc. and/or as specified on Engineering Drawing.

3. REQUIREMENTS

The material shall be conditioned for a minimum of 24 h at 20 +/- 2 °C and 65 +/- 3% relative humidity prior to test.

Material specification requirements are to be used for initial qualification of materials.

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.1 CONSTRUCTION

This material consist of a bitumen cardboard cover as surface finish, a bitumen or plastics based flexible heavy layer and non-woven fiber padding of natural and/or synthetic fibers bonded with synthetic resins. The fiber padding may be replaced by a polyurethane foam, pad (chip foam). Bitumen cardboard, flexible heavy layer and fiber or foam pad must be bonded to each other by appropriate means.

3.2 BITUMEN CARDBOARD

3.2.1	Thickness, max (ASTM D 374, Method A)	1.5 mm
3.2.2	Mass, min	850 g/m ²
3.2.3	Bitumen Content, min (ASTM D 461)	16%
3.2.4	Burst Strength, min (ASTM D 774, based on 1.0 mm thickness)	0.8 MN/m ²
3.2.5	Water Absorption, max (SAE J315)	28%

Date	Action	Revisions
2006 11 06	Revised	S-M99G4604-B inactivated and removed, no replacement named; Inserted 3.0; Deleted 3.6 & 4 R. Lord
1994 12 22	Revised	Retyped, was 15 pages
1971 10 06	Last Revision	2G/CB6748 KP



**3.3 HEAVY LAYER PAD**

- 3.3.1 Thickness (ASTM D 374, Method A) 2 + 0.5 mm

3.4 FIBER OR FOAM PAD

- 3.4.1 Thickness, max 16 mm (ASTM C 167)
- 3.4.2 Density, kg/ m³ (ASTM D 167 or D 1564) As per approved Initial Sample Report +/- 10%

3.5 ASSEMBLY REQUIREMENTS

- 3.5.1 Total Thickness, max (FLTM BN 114-01; 2.8 N plates) 20 mm
- 3.5.2 Total Mass, max 8 kg/m²
- 3.5.3 Flexibility
- No chipping or cracking of cover material and/or heavy layer pad.
- 3.5.4 Cold Impact Resistance (FLTM EU-BV 055-06, Load A, -30 °C)
- No chipping of cover material and/or heavy layer pad or tearing at fastening slots.
- 3.5.5 Palletizing
- The material shall separate easily upon peeling by hand without testing. There shall be no fiber or foam resin sticking to the cover material after separation.
- Test Method: (See Figure 1)
- 1) Cut five specimens 200 x 200 mm from material under test 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 equaling a ply-up height of 500 mm minus weight of five specimens and cover plate.
 - 4) Expose assembly in a mechanical convected oven maintained at a temperature of 50 +/- 2 °C for 2 weeks.
- Cool to room temperature, remove weight and cover plate and examine as described above.

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3.5.6 Splitting Resistance (Fiber Pad), min

1 kN/m²

Test Method: (See Figure 2)

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

3.5.7 Heat Resistance

No separation between fiber or foam padding and heavy layer pad or splitting fiber or foam padding. No deterioration of heavy layer and/or bitumen cardboard.

Test Method: (See Figure 3)

- 1) Cut from material under test specimens 200 x 200 mm and bond with the fiber or foam surface to primed metal panels 300 x 300 mm using adhesive S-M2G4601-A or equivalent.
- 2) Condition for 24 hours at room temperature and suspend in a mechanical convected oven maintained at 90 +/- 2 °C for 2 weeks.

3.5.8 Shrinkage

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

3.5.9 Mildew Resistance (Fiber Pad)

The material shall be free from mildew and malodor. There shall be no visible changes evident after drying.

Test Method: Place a 100 x 100 mm sample of fiber padding 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 350 hours. Remove lid and examine as described above.

3.5.10 Flammability

▽ 3.5.10.2 Burn Rate, max

100 mm/minute

In order to comply with the 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 EN-BN 024-02.