



## NOISE INSULATION SHIELD-I

SS-M99G9514-A

### 1. SCOPE

The material defined by this specification is an oil and moisture resistant, fiber based molded shield.

### 2. APPLICATION

The material was originally released as an air born noise insulation part mechanically fixed under the engine compartment.

### 3. REQUIREMENTS

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

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

#### 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 DENSITY

1.0 +/- 0.1 g/cm<sup>3</sup>

(ASTM D 2395-69, Method A; specimens of 50 x 50 mm to be cut from plane areas of finished part)

#### 3.2 THICKNESS

6.0 +/- 1.5 mm or as specified on Engineering drawing

(Slide gauge)

#### 3.3 WATER ABSORPTION, max

60%

Test Method:

- 1) Cut 50 x 50 mm specimens from plane areas of finished part.
- 2) Seal edges of test specimens against test fluid penetration (e.g use wax).
- 3) Weigh specimens nearest to 0.1 g.
- 4) Immerse at room temperature in distilled water for 24 hours.
- 5) Slightly blot specimens with filter paper to remove excessive test fluid from the surfaces of specimens.
- 6) Weigh specimens again nearest to 0.1 g and calculate the increase of weight in % based on original value.

| Date       | Action            | Revisions                      |
|------------|-------------------|--------------------------------|
| 2006 10 18 | Revised           | Inserted 3.0; Deleted 3.10 & 4 |
| 1994 12 16 | Revised & Retyped | Was 11 pages                   |
| 1977 02 14 | Released          | SM/EQ8209TP                    |



**3.4 COLD IMPACT RESISTANCE**

No cracking

Test Method:

- 1) Place a steel ball of 30 mm diameter, mass 225 g, and a 50 x 50 mm specimen, cut from plane areas of finished part for 4 hours at -40 +/- 2 °C in a cold box.
- 2) Place the specimen horizontally on a base plate and normal to the direction of impact.
- 3) While still in the cold box drop the steel ball to the middle of the specimen from a height of 1000 mm.

**3.5 TENSILE STRENGTH**

(ASTM D 412, Die C; specimens to be cut from plane areas of finished part)

- |       |                                                                                             |                       |
|-------|---------------------------------------------------------------------------------------------|-----------------------|
| 3.5.1 | Original, min                                                                               | 175 N/cm <sup>2</sup> |
| 3.5.2 | After Humidity Ageing, max<br>(48 h at 38 +/- 2 °C and 98 +/- 2% relative humidity)         | -15%                  |
| 3.5.3 | After Heat Ageing<br>(14 d at 90 +/- 2 °C, 1 h at room temperature)                         | No loss               |
| 3.5.4 | After Immersion in Engine Oil, max<br>(48 h in Oil No. 1 of ASTM D 471 at room temperature) | -15%                  |
| 3.5.5 | After Immersion in Water, max<br>(48 h in distilled water at room temperature)              | -15%                  |

**3.6 TEAR STRENGTH, min**

(ASTM D 624, Die C; specimens to be cut from plane areas of finished part)

220 N/cm

**3.7 FINISHED PART REQUIREMENTS**

- |       |            |                                     |
|-------|------------|-------------------------------------|
| 3.7.1 | Dimensions | As specified on Engineering drawing |
| 3.7.2 | Mass       |                                     |

The tolerance in mass of finished part for any one supplier shall be maximum +/- 10%, based on the recorded mass of his originally approved sample.