SAE International

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J1352

REV. JAN2005

Issued 1981-05
Revised 2005-01

Superseding J1352 JUN1994

Compression and Recovery of Insulation Paddings

1. Scope

This test method is applicable for determining the relative compression and recovery of fibrous insulation padding materials.

1.1 Purpose

The purpose of this test method is to establish a means of measuring the ability of fibrous insulation materials to resist compression and recover after being compressed, dry or wet. It should be noted that there are two test methods for each dry and wet test. Two methods have been found necessary for different loading applications, and also due to large variation in surface density of the padding materials. The results of these two test methods cannot be correlated to each other. The material specification should indicate which test is necessary for each application.

1.2 Rationale

This revision makes an editorial correction to Equation 1 in Paragraph 10. No other changes were made.

2. References

There are no referenced publications specified herein.

3. Apparatus

3.1 Platen

3.1.1 Method A, 100 x 100 mm with a mass of 300 g.

3.1.2 Method B, 100 x 100 mm with a mass of 100 g.

3.2 Compression Machine (Optional)

Capable of compressing the specimen at a rate of 50 mm/min without impact.

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4. Test Specimen

From the material to be tested, cut enough specimens 100 x 100 mm to achieve a minimum thickness of 25 mm when plied together.

5. Conditioning

Test for material classification and for arbitration purposes shall be made on material conditioned to a constant weight in a controlled atmosphere of 21 °C ± 1 °C and 50% ± 5% relative humidity. Quality control tests can be conducted on unconditioned specimens unless otherwise specified by the user.

6. Procedure—Method A, Normal

6.1 Ply sufficient layers of the specimen together to achieve a minimum thickness of 25 mm.

6.2 Add the 300 g platen and place in the compression apparatus.

6.3 Apply a load of 2.25 kg for 1 min. Remove the load and measure the thickness of the specimen at the center of the four sides and record the average as T_1.

6.4 Apply a load of 35 kg. If a dead weight is used, add it slowly without impact. If a compression machine is used, apply the load at a rate of 50 mm/min. Measure the average thickness as soon as the full load is attained and record as T_2.

6.5 Hold this load for 5 min, then remove the load and allow specimen to recover for 5 min with the platen on the specimen.

6.6 Measure the average thickness and record as T_3.

7. Procedure—Method B, Normal

7.1 Ply sufficient layers of the specimen together to achieve a minimum thickness of 25 mm.

7.2 Add 100 g platen and measure the thickness of the specimen at the center of the four sides of the platen. Record the average as T_1.

7.3 Apply a load of 3 kg for 1 min. Measure the average thickness as soon as full load is attained and record as T_2.

7.4 Remove the load and allow the specimen to recover for 3 min.

7.5 Measure the average thickness and record as T_3.

8. Procedure—Method C, Compression and Recovery—Wet

8.1 Determine and record T_1 as described in 7.1 and 7.2, Method B.

8.2 Immerse specimen in distilled water at 21 °C ± 1 °C for 30 min.