SAE International™

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J815

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Superseding J815 OCT2002

Load Deflection Testing of Urethane Foams for Automotive Seating

1. ***Scope***—Traditionally, cellular foam products have been checked for load deflection by determining the load required to cause a 25% deflection. In automotive seating, on the other hand, the load deflection is checked by determining the thickness under constant force conditions to (a) indicate the initial softness of the seat cushion, (b) measure how thick the seat cushion is under the average passenger load (a measurement of padding left for "ride" and seated height), and (c) determine a value to indicate resiliency. In this method these measurements are made by determining the thickness of the seat cushion under fixed loads of 4.5 N, 110 N, and 220 N with a 323 cm^2 circular indentor foot.

1.1 **Rationale**—This document has been reaffirmed to comply with the SAE 5-Year Review policy.

2. ***Reference***

2.1 **Applicable Publication**—The following publication forms a part of the specification to the extent specified herein.

2.1.1 ASTM PUBLICATION—Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM D 3574—Standard Test Methods for Flexible Cellular Materials—Slab, Bonded, and Molded Urethane Foams (Test B_2 Indentation Force Deflection Test—Specified Force

3. ***Test Conditions***—Material must be at least 96 h old before testing. Conditioning and testing shall be conducted at a temperature and relative humidity of 23 °C ± 2 °C and a relative humidity of 50% ± 5%. The conditioning period shall be a minimum of 16 h. The standard in case of disputes is ASTM D 3574.

4. ***Test Specimens***—The finished manufactured product shall be used with top and bottom skins, intact, where possible. In the case of tapered cushions, the location of the test area for load deflection measurement is to be agreed upon by the parties concerned. In cases where a finished part is not feasible for testing, by mutual agreement, a 380 mm x 380 mm x average cushion thickness specimen may be cut from the cushion. In the case of tapered or irregularly surfaced pads, by mutual agreement, 380 mm x 380 mm pieces may be cut to a uniform thickness. Specimens may be plied up to achieve the average cushion thickness (no cement is to be used). Test values are dependent on the specimen dimensions. Specimens with dimensions other than 380 mm x 380 mm will give different results and failure to retain all molded surfaces will also affect test values.

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