

FIRMNESS TEST FOR PADDING MATERIALS

Application

This procedure is used to measure firmness or softness of padding materials used for seating applications.

Apparatus Required

Firmness Tester

The instrument required for this test is a modified thickness tester manufactured by Randen Technologies, Inc., (see Figure 1). The two flat platens of the instrument are modified for the firmness test by attaching plates on which are mounted aluminum probes (fingers) 12 mm dia by 25 mm high. The plates are supplied by the manufacturer of the instrument for measuring firmness of padding materials.

Source: Randen Technologies, Inc.
R. R. #5
Strathroy, Ontario N7G 3H6
Canada

Tel: 519-245-6115
Fax: 519-245-5062

Dial Indicator - Model No. 362

Source: B. C. Ames Co.
Waltham, Massachusetts U.S.A.

Weights

Seven - 500 g weights
One - 250 g weight

Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

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2000 12 01	Revised	Rev Source address & updated L. Graham
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Procedure

1. Center the eight probe (finger) plate on the lower platen (table) of the instrument and tighten the set screws.
2. Center the six probe (finger) plate on the upper platen and tighten set screws.
3. Balance the instrument by turning the counter weight at the rear until the upper probes are 12 mm from the surface of the eight probe lower plate. Care should be taken not to jar the instrument severely after balancing as this will change the counter weight setting.
4. Apply 250 g dead weight pre-load to the upper platen and leave in place throughout entire test.
5. Place a sample of padding, 300 x 300 mm, over the probes (fingers) of the lower platen of the instrument and adjust the dial indicator to zero (see Figure 2). If the material appears to be of different densities, the higher density should be placed on the bottom. If the material has attached sheeting, the sheeting side should be placed on top.
6. Add six 500 g weights, one at a time gently (seven 500 g weights on pads with sheeting). Record the dial indicator reading within 10 seconds of adding the last weight. (The weights should not be dropped on the platen abruptly.) Report the test results as required by the Engineering Materials Specification.

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.