

EXTENSION RATIO OF PILE YARNS IN CARPETS**Application**

This procedure is used to determine the extension ratio of pile yarns in tufted and woven loop pile carpets. The test should be carried out on samples of carpet without a secondary backcoating where such coatings are specified in which case appropriate samples are required from supply sources for initial sampling.

Apparatus Required

Tensile machine suitable for yarn testing.

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.

Procedure

1. Prepare 5 die cut test specimens 10 cm minimum size, across the width of the carpet and within 15 cm from each selvedge.

The specimens must be cut with one side parallel to the rows of tufted yarns.

2. Unravel from each test specimen one pile yarn.
3. Clamp both ends of one pile yarn into the two clamps of the tensile machine respectively.

N.B. The lengths clamped in must be as short as possible (approx. 10 mm each).

4. Pull the unravelled yarn until the machine records a load of 300 grams. This must be done with a speed of jaw separation of 125 mm/minute.

Date	Action	Revisions
2001 09 10	Revised	Editorial – no technical change A. Cockman
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Page 1 of 2

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5. At a point when the 300 grams load is first registered, measure the length of the yarn and correct it by adding the clamped in lengths (all lengths must be expressed in cm).
6. Compute the extension ratio for each of the yarns as follows:

$$E \% = \frac{L_1 - L_0}{L_0} \times 100$$

Legend:

E %	=	Percent Extension Ratio
L ₀	=	Original Length of Carpet Test Specimen
L ₁	=	Unravalled Yarn Length (computed under 300 gram load)

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.