

**DETERMINATION OF TENSILE STRENGTH AND ELONGATION OF
GENUINE LEATHER**

Application

This method is used to determine the tensile strength and elongation at break of genuine leather.

Apparatus Required

Tensile Testing Machine

With a constant rate of jaw separation of 125 mm/minute. The machine must also be equipped with a recording device.

Thickness Measurement Gauge

Incorporating a circular contact plate of 200 mm² in area, which exerts a load of 500 g/cm² on the specimen. Accuracy 0.025 mm.

Specimen Cutting Die

ASTM D 412, Type 'A' dumbbell.

Slide Gauge

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. Cut 4 specimens from the sample in line with positions indicated in the sketch.
2. Measure and record the average thickness of each specimen by taking readings at centre of neck and 25 mm either side of centre position.

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2001 08 22	Revised	Editorial – no technical change A. Cockman
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3. Mark off a gauge length of 50 mm in the centre of the neck of each specimen without damaging them.
4. Insert the specimen into the jaws of the tensile machine and pull at the rate of 125 mm/minute unless otherwise specified by the relevant Engineering Specification.
5. Record the maximum load (kg) necessary to break the specimen.
6. Using the slide gauge, record the elongation at break.

Evaluation

For each specimen, calculate:

1. Elongation at break (%) = $\frac{L_1 - L_0}{L_0} \times 100$

Where: L_0 = Original gauge length in mm

L_1 = Gauge length at break in mm

2. Tensile Strength (N/m²) = $\frac{F \times 100}{W \times T}$

Where: F = Maximum load in kg

T = Thickness of specimen in mm

W = Average width of specimen neck in mm

Report the average values of the 4 specimens.

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.