ISO 7854 Rubber- or Plastics-Coated Fabrics -Determination of Resistance to Damage by Flexing / Testing Equipment

Description

3 Method A — De Mattia method

3.1 Principle

A rectangular strip of coated fabric is folded twice so that its long edges meet forming a strip measuring 12.5 mm x 12.5 mm. This folded strip is mounted between a pair of flat grips, one of which reciprocates, causing the folded test piece to be bent outwards five times per second. This high-speed folding of the test piece is continued for either a pre-set number of cycles or until damage to the test piece is apparent.

3.2 Apparatus

3.2.1 Flex-testing machine, as specified in ISO 132, with pairs of flat grips. One of the grips of each pair is capable of a reciprocating motion in a vertical plane with a stroke length of {57+0.5) mm and a frequency of 5.0 Hz ± 0,2 Hz. Each pair of grips is positioned so that they are 70 mm + 1 mm apart when in the open position and 13 mm + 0.5 mm apart when in the closed position.

3.3 Preparation of test pieces

Select six test pieces each 37.5 mm + 1 mm wide x 125 mm long from the usable width of the roll as de

fined in ISO 2286. Three test pieces shall be selected with their longer dimension in the longitudinal direction of the roll of coated fabric and three test pieces with the longer dimension in the transverse direction of the roll of coated fabric. Test pieces shall be selected from positions evenly spaced across the full width and length of the sample.

NOTES:

1 In the case of woven-fabric substrates, as far as possible no two test pieces should contain the same threads of the fabric in the direction to be tested.

2 Together with suitable increases in the width of grips, the test piece size may be increased so as to permit subsequent hydrostatic-head tests to be conducted.

3.5 Procedure

Fold each test piece twice as illustrated in figure 1, with the coating to be tested outermost, along lines 12,5 mm from each of the longer edges and to a width of 12.5 mm. Mount each folded test piece between a pair of grips whilst they are in the open position so that the test piece is slightly taut and so that the coating on the centre section of the test piece will be subjected to an outward fold. Move the

grips together by hand and guide each test piece into a fold at approximately the midpoint (see figure 1).

Set the apparatus in motion and stop it after the specified number of cycles or, if the point of failure or breakdown of the coated fabric is to be determined, stop the apparatus at predetermined intervals to allow examination of the test piece.

3.6 Examination of test pieces

Examine the test pieces initially whilst retained in the grips of the flexing apparatus or, if required, remove the test pieces from the grips for a more detailed inspection in accordance with clause 6. Test pieces removed from the grips shall not be remounted.

Terminate flexing either at the specified number of cycles or at the first inspection at which test pieces show signs of deterioration or cracking of the type under investigation. Where relevant, record at each examination the total number of flexes to which the test pieces have been subjected and assess the flexing damage in accordance with clause 6.

3.7 Test report

The test report shall include the following particulars:

a) a reference to this method of test, i.e. Method A of ISO 7854:1995;

b) all details necessary for the identification of the coated fabric, including any relevant reference number;

C) the specified number of flexes for which the test was run and at which the examination was made

and/or the number of flexes at final inspection;

d) the severity of damage at each inspection, reported in accordance with clause 6:

e) :details of any deviation from the standard test :procedure.

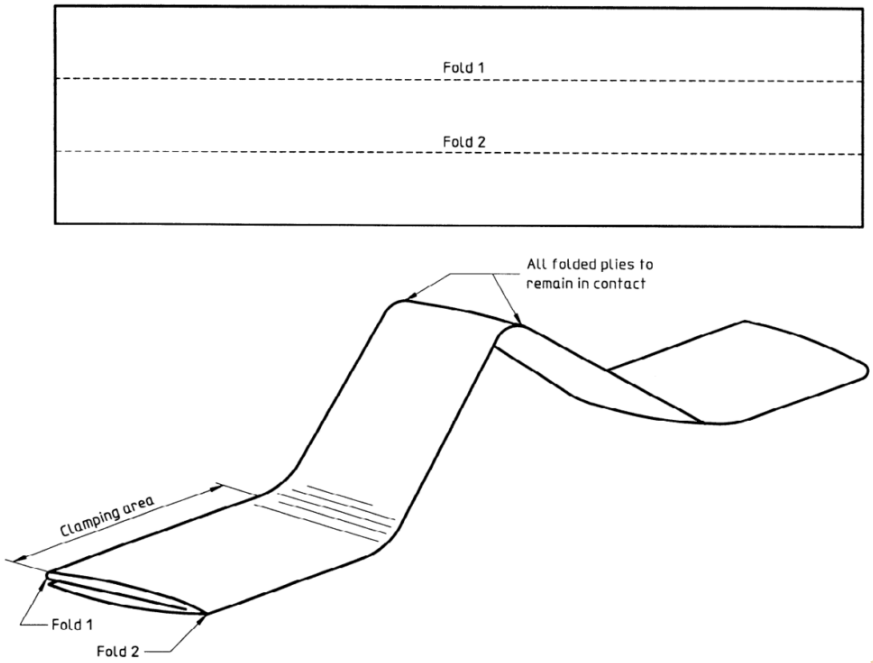
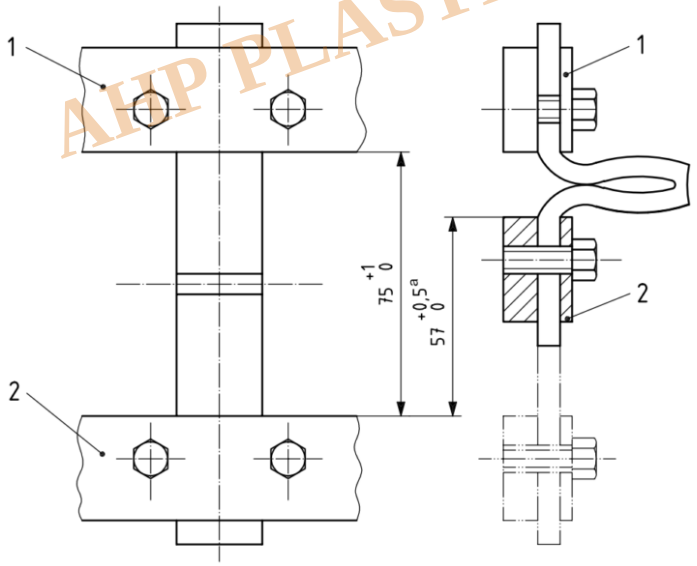


Figure 1 — Illustration of folding and configuration of test piece for De Mattia method

Dimensions in millimetres



Key

1 upper grip
2 lower grip

[a] Travel.

Figure 1 — De Mattia type machine

DeMattia Flexing Tester

DeMattia Flex-cracking Tester, to determine the resistance of rubbers, leather and coated fabrics to the formation and growth of cracks, damages by repeated flexing.

- 6 specimen stations
- Grip distance in open 70mm
- Grip close distance 13mm
- Stroke length 57mm
- Frequency 300 cpm
- Including digital counter

WORDPRESS_PDF[]

Category

1. Equipment for Standards
2. Standards