
**Textiles — Seam tensile properties of
fabrics and made-up textile articles —**

Part 2:

Determination of maximum force to seam
rupture using the grab method

*Textiles — Propriétés de résistance à la traction des coutures d'étoffes et
d'articles textiles confectionnés —*

*Partie 2: Détermination de la force maximale avant rupture des coutures
par la méthode d'arrachement (Grab test)*



Foreword

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Throughout the text of this standard, read “..this European Standard,” to mean “...this International Standard...”.

ISO 13935 consists of the following parts, under the general title *Textiles – Seam tensile properties of fabrics and made-up textile articles*:

- *Part 1: Determination of maximum force to seam rupture using the strip method*
- *Part 2: Determination of maximum force to seam rupture using the grab method*

Annexes A and B of this part of ISO 13935 are for information only.

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Foreword

The text of EN ISO 13935-2:1999 has been prepared by Technical Committee CEN/TC 248 "Textiles and textile products", the secretariat of which is held by BSI, in collaboration with Technical Committee ISO/TC 38 "Textiles".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 1999, and conflicting national standards shall be withdrawn at the latest by August 1999.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This part of EN ISO 13935 has been prepared in the context of several test methods for determination of certain mechanical properties of textiles (using mainly tensile testing machines, e.g. tensile properties, seam tensile properties, tear properties, seam slippage). The procedure for these standards agree where appropriate. The results obtained by one of the methods should not be compared with those obtained by the other methods. See annex B for informative references.

EN ISO 13935 consists of the following parts, under the general title Textiles - Seam tensile properties of fabrics and made-up textile articles:

- Part 1: Determination of maximum force to seam rupture using the strip method
- Part 2: Determination of maximum force to seam rupture using the grab method

Annexes A and B of this part of EN ISO 13935 are for information only.

Where it is intended to compare the seam maximum force values of sewn seams with the fabric maximum force, it is important to use the same type of test, test conditions and test specimens in the tests in this standard and EN ISO 13934-2 (see annex B).

1 Scope

This part of EN ISO 13935 specifies methods for the determination of seam maximum force of sewn seams when the force is applied perpendicularly to the seam. This part of EN ISO 13935 describes the method known as the grab test.

Note : Part 1 of EN ISO 13935 describes the method known as the strip test. For informative references see annex B.

The method is mainly applicable to woven textile fabrics. It may be applicable to fabrics produced by other techniques. It is not normally applicable to woven elastic fabrics, geotextiles, nonwovens, coated fabrics, textile-glass woven fabrics and fabrics made from carbon fibres or polyolefin tape yarns (see annex B).

The sewn fabrics may be obtained from previously sewn articles or may be prepared from fabric samples, as agreed by the parties interested in the results.

This method is applicable to straight seams only and not to curved seams.

The method is restricted to the use of constant rate of extension (CRE) testing machines.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

EN 20139	Textiles - Standard atmospheres for conditioning and testing (ISO 139:1973)
EN 10002-2	Metallic materials - Tensile testing - Part 2: Verification of the force measuring system of the tensile testing machines
EN 30012-1	Quality assurance requirements for measuring equipment - Part 1: Metrological confirmation system for measuring equipment (ISO 10012-1:1992)

3 Definitions

For the purposes of this part of EN ISO 13935 the following definitions apply:

3.1 Constant-rate-of-extension (CRE) testing machine

Tensile-testing machine provided with one clamp which is stationary and another clamp which moves with a constant speed throughout the test, the entire testing system being virtually free from deflection (EN ISO 13934-1).

3.2 Grab test

Tensile test in which only the centre part of the test specimen is gripped in the jaws of the testing machine (EN ISO 13934-2).

3.3 Maximum force at seam rupture

Maximum force recorded when a test specimen with a seam perpendicular to the direction of extension is taken to seam rupture during a tensile test under the specified conditions (EN ISO 13935-1).