International Standard

ISO 13935-2

Third edition
2026-04

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)

Reference number
ISO 13935-2:2026(en)

© ISO 2026



COPYRIGHT PROTECTED DOCUMENT

© ISO 2026

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Principle **2**
5 Sampling **2**
6 Apparatus **3**
6.1 CRE machine 3
6.2 Equipment for sewing defined seams 4
6.3 Equipment for cutting test specimens 4
7 Atmosphere for conditioning and testing **4**
8 Preparation of seams and of test specimens **4**
8.1 Preparation of seams, if required, before testing 4
8.2 Preparation of adjacent test specimens from one laboratory sample 4
8.3 Preparation of test specimens 5
9 Procedure **7**
9.1 Gauge length 7
9.2 Rate of extension 7
9.3 Mounting of test specimens 7
9.4 Operation 7
10 Calculation and expression of results **7**
11 Test report **8**
Annex A (informative) **Arrangements of jaws for the grab test** **9**
Annex B (informative) **Considerations on straight seams and sampling of structural seams on garments** **10**
Bibliography **13**

© ISO 2026 – All rights reserved

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 24, *Conditioning atmospheres and physical tests for textile fabrics*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 248, *Textiles and textile products,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 13935-2:2014), which has been technically revised.

The main changes are as follows:

— in Clause 3, a definition of structural seam (3.5) has been added;

— in Clause 5, details on the seam sampling have been added;

— in 6.1.7, a third option c) for the clamps has been added;

— 8.2, a subclause dedicated to preparation of adjacent test specimens has been revised;

— 8.3, a subclause dedicated to preparation of test specimens from garments has been revised;

— a new Annex B related to straight seams and sampling of structural seams on garments has been added.

A list of all parts in the ISO 13935 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

© ISO 2026 – All rights reserved

Introduction

This document 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 agrees where appropriate. The results obtained by one of the methods should not be compared with those obtained by the other methods. See References [2], [3] and [4].

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 document and ISO 13934-2[2].

© ISO 2026 – All rights reserved

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

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

1 Scope

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

The method defined in this document is applicable to woven textile fabrics, including fabrics which exhibit stretch characteristics imparted by the presence of an elastomeric fibre, mechanical or chemical treatment. It can be applicable to fabrics produced by other techniques. It is normally not applicable to geotextiles, nonwovens, coated fabrics, textile-glass woven fabrics and fabrics made from carbon fibres or polyolefin tape yarns.[2], [3], [4]

This method is applicable to straight seams only (obtained from previously sewn articles or prepared from fabric samples) and not to curved seams (see Annex B for considerations on seams).

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

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 139, *Textiles — Standard atmospheres for conditioning and testing*

ISO 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

ISO 10012, *Measurement management systems — Requirements for measurement processes and measuring equipment*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

© ISO 2026 – All rights reserved