



**SLOVENSKI STANDARD**  
**SIST EN ISO 13936-3:2007**

**01-julij-2007**

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**Tekstilije - Ugotavljanje odpornosti prej proti drsenju ob šivu pri tkaninah - 3. del:  
Metoda z igelno prižemo (ISO 13936-3:2005)**

Textiles - Determination of the slippage resistance of yarns at a seam in woven fabrics -  
Part 3: Needle clamp method (ISO 13936-3:2005)

Textilien - Bestimmung des Schiebewiderstandes von Garnen in einer Gewebenacht - Teil  
3: Verfahren mit Nadelklemme (ISO 13936-3:2005)

Textiles - Détermination de la résistance au glissement des fils de couture dans les  
tissus - Partie 3: Méthode de la griffe (ISO 13936-3:2005)

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**Ta slovenski standard je istoveten z: EN ISO 13936-3:2007**

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**ICS:**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN ISO 13936-3**

February 2007

ICS 59.080.30

English Version

**Textiles - Determination of the slippage resistance of yarns at a seam in woven fabrics - Part 3: Needle clamp method (ISO 13936-3:2005)**

Textiles - Détermination de la résistance au glissement des fils de couture dans les tissus - Partie 3: Méthode de la griffe (ISO 13936-3:2005)

Textilien - Bestimmung des Schiebewiderstandes von Garnen in einer Gewebenäht - Teil 3: Verfahren mit Nadelklemme (ISO 13936-3:2005)

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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

**EN ISO 13936-3:2007 (E)****Foreword**

The text of ISO 13936-3:2005 has been prepared by Technical Committee ISO/TC 38 "Textiles" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 13936-3:2007 by Technical Committee CEN/TC 248 "Textiles and textile products", the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by August 2007, and conflicting national standards shall be withdrawn at the latest by August 2007.

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**Endorsement notice**

The text of ISO 13936-3:2005 has been approved by CEN as EN ISO 13936-3:2007 without any modifications.

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**Textiles — Determination of the slippage  
resistance of yarns at a seam in woven  
fabrics —**

**Part 3:  
Needle clamp method**

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*Textiles — Détermination de la résistance au glissement des fils de  
couture dans les tissus —*

*Partie 3: Méthode de la griffe*

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## ISO 13936-3:2005(E)

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 13936-3 was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 24, *Conditioning atmospheres and physical tests for textile fabrics*.

ISO 13936 consists of the following parts, under the general title *Textiles — Determination of the slippage resistance of yarns at a seam in woven fabrics*:

— *Part 1: Fixed seam opening method*

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— *Part 2: Fixed load method*

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— *Part 3: Needle clamp needle*



# Textiles — Determination of the slippage resistance of yarns at a seam in woven fabrics —

## Part 3: Needle clamp method

### 1 Scope

This part of ISO 13936 describes a method for the determination of the resistance offered by the yarns of a woven fabric to slippage while being held in a needle clamp under conditions of stress.

This method provides a means to negate variations introduced by seam preparation or sewing thread variation that can have a marked influence on test results.

This method is not applicable to stretch fabrics or for industrial fabric, e.g. beltings.

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### 2 Normative references (standards.iteh.ai)

The following referenced documents are indispensable for the application 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 — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

ISO 10012-1, *Quality assurance requirements for measuring equipment — Part 1: Metrological confirmation system for measuring equipment*

### 3 Terms and definitions

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

#### 3.1

##### **constant rate-of-extension testing machine**

tensile testing machine having one clamp fixed whilst the other is moving with a constant speed throughout the test where the entire testing system is virtually free from deflection

#### 3.2

##### **strip test**

tensile test for which the full width of the test specimen is gripped in the jaws

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**3.3 yarn slippage**  
movement in a woven fabric of weft yarns over warp yarn (or warp yarns over weft yarns) as a result of a pulling action

NOTE Seam slippage is a fabric property not to be confused with seam strength.

**3.4 warp slippage**  
slipping of warp yarns over weft yarns, during which the warp yarns are at right angles to the direction of pull

**3.5 weft slippage**  
slipping of weft yarns over warp yarns, during which the weft yarns are at right angles to the direction of pull

**3.6 gauge length**  
distance between the two effective clamping points of the testing device

**4 Principle**

A pinned and an unpinned test specimen are separately extended by using a tensile testing machine fitted with a needle-clamping device for the pinned specimen and conventional jaws for the unpinned specimen, to produce, in the case of the use of a chart recorder, two force/extension curves originating from the same abscissa. The yarn slippage, expressed in millimetres, is determined by comparing the two curves at specified force applications.

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**5 Apparatus and materials**

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**5.1 CRE machine**, having the following general characteristics.

- a) The tensile-testing machine shall be provided with a means for indicating or recording both the maximum force applied to the test specimen in stretching it to rupture and the corresponding extension of the test specimen.
- b) Under conditions of the use, the accuracy of the apparatus shall be at least class 1 in accordance with ISO 7500-1. The error of indicated or recorded maximum force at any point in the range in which the machine is used shall not exceed  $\pm 1\%$ , and the error of the indicated or recorded jaw separation shall not exceed  $\pm 1$  mm.
- c) If recording of force and elongation is obtained by means of data acquisition boards and software, the frequency of data collection shall be at least 8 per second. If the machine is not equipped with data acquisition boards and applicable software, a chart recorder is necessary.
- d) The machine shall be capable of constant rates of extension of 50 mm/min  $\pm$  5 mm/min (and 20 mm/min  $\pm$  2 mm/min).
- e) The machine shall be capable of gauge lengths of (100  $\pm$  1) mm and (20  $\pm$  1) mm.
- f) Metrological confirmation of tensile testing machine shall be in accordance with ISO 10012-1.

**5.2 Needle-clamp clamping device**, with a row of needles on one side and corresponding holes on the other as shown in Figure 1.

The number and characteristics of these needles depend on the application of the fabrics as given in Table 1.

**Table 1 — Number and characteristics of needle-clamp needles for different fabrics**

Criteria	Apparel fabrics	Furnishing and upholstery fabrics
Number of needles per 5 cm width	17	7
Diameter of the needle shank (mm)	0,5 ± 0,03	0,9 ± 0,03
Space between axes of adjacent needles (mm)	2,5 ± 0,1	7,0 ± 0,1
Needle height (mm)	8,0 ± 0,1	8,0 ± 0,1
Type of needle	round point	round point

The stop position (see Figures 1 and 2) for apparel fabrics is different from that for furnishing and upholstery fabrics to ensure the correct positioning of the test specimen.

**5.3 Conventional-jaws clamping device**, having the central point of the two jaws of the machine in the line of pull, the front edges at right angles to the line of pull and their clamping faces in the same plane.

The jaws shall be capable of holding the test specimen without allowing it to slip, and shall be designed so that they do not cut or otherwise weaken the test specimen. The faces of the jaws shall be smooth and flat, except if, even with packing, the test specimen cannot be held satisfactorily with flat-faced jaws or rubber-faced jaws; in these cases, engraved or corrugated jaws shall be used. Suitable packing materials for use with either smooth or corrugated jaws include paper, leather, plastics or rubber sheet.

The jaw faces should preferably have a width of at least 60 mm but shall be not less than the width of the test specimen.

**5.4 Equipment for cutting test specimens and fraying them to obtain the required width.**

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**6 Atmosphere for conditioning and testing**

The standard atmosphere for conditioning and testing textiles shall be as specified in ISO 139.

## 7 Sampling and preparation of test specimens

### 7.1 Sampling

Select samples either in accordance with the procedure laid down in the material specifications for the fabric or as agreed between the interested parties. In case of the absence of specifications, an example sampling procedure is given in Annex A. An example of cutting test specimens from the laboratory sample is given in Annex B. Avoid test areas with folded or creased places, selvages and areas not representative of the fabric.

### 7.2 Preparation of test specimens

**7.2.1** From each laboratory sample, cut two sets of 5 test specimens (300 mm long and 60 mm wide) 150 mm from the selvage, one set in the warp direction and the other in the weft direction.

**7.2.2** Remove approximately the same number of threads from each of the long edges of the cut strip until the width of the test specimen is 50 mm.

**7.2.3** Draw a reference line at half length of the test specimen and identify each end.