



**SLOVENSKI STANDARD**  
**SIST EN 4429:2010**  
**01-marec-2010**

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Aerospace series - Textiles - Testing of narrow woven fabrics - Determination of warp bow

Luft- und Raumfahrt - Textilien - Prüfung von Gewebebändern - Bestimmung der Konizität

**ITeH STANDARD PREVIEW**

Série aérospatiale - Textiles - Essais des tissus étroits - Détermination du cintrage sens chaîne

[SIST EN 4429:2010](https://standards.iteh.ai/catalog/standards/sist/cab29acc-8386-4eb3-97d2-ac63b64cc71/sist-en-4429-2010)

Ta slovenski standard je istoveten z: **EN 4429:2006**

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**ICS:**

49.025.60      Tekstilije      Textiles

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 4429**

August 2006

ICS 49.025.60

English Version

## Aerospace series - Textiles - Testing of narrow woven fabrics - Determination of warp bow

Série aérospatiale - Textiles - Essais des tissus étroits -  
Détermination du cintrage sens chaîne

Luft- und Raumfahrt - Textilien - Prüfung von Schmal  
Gewebe - Bestimmung der Konizität

This European Standard was approved by CEN on 24 June 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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## Foreword

This European Standard (EN 4429:2006) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

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 February 2007, and conflicting national standards shall be withdrawn at the latest by February 2007.

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

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

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## Introduction

This standard is part of the series of EN non-metallic materials for aerospace applications. The general organization of this series is described in EN 4385. This standard is a level 2 document as defined in EN 4385.

## 1 Scope

This standard defines the general requirements for the determination of warp bow of narrow woven fabrics by measurement testing.

## 2 Normative references

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.

EN 4385, *Aerospace series — Non-metallic materials — General organisation of standardisation — Links between types of standards.* <sup>1)</sup>

EN 4415, *Aerospace series — Non-metallic materials — Textiles — Narrow woven fabrics — Technical specification.*

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## 3 Terms and definitions

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

### 3.1

#### warp bow

the deformation (or deflexion "f") which a narrow woven fabric takes in its plane with respect to the rectilinear and parallel edges which it should have

## 4 Health and safety

This standard does not necessarily include all health and safety requirements, associated with its use.

Persons using this standard shall be familiar with normal laboratory/test house practices.

It is the responsibility of the user to establish satisfactory health and safety practices and to ensure conformity with any European, National or local laws / regulations.

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1) Published as AECMA Prestandard at the date of publication of this standard.

## 5 Principle/technique

The test consists in measuring the warp bow of a narrow woven fabric laid on a plane surface after conditioning.

## 6 Resources

### 6.1 Apparatus/facilities

The characteristics of the test methods are listed as follows:

- A test plate of dimensions  $(1\ 200^{+10}_0)$  mm  $\times$   $(200^{+5}_0)$  mm on which its longitudinal axis is traced (see Figure 1).
- A ruler having a minimum length of 1 m and accurate to one millimetre.
- A set square having minimum dimensions of  $(100 \times 150)$  mm with a scale in mm on its longest side and accurate to one millimetre.



#### Key

- 1 Test plate
- 2 Longitudinal axis

Figure 1

### 6.2 Materials/Reagents

No requirements.

### 6.3 Qualification of personnel

No requirements.

## 7 Test samples/Test pieces

Cut three test pieces of a length of  $(1\ 200_{-10}^0)$  mm.

## EN 4429:2006 (E)

## 8 Testing procedure

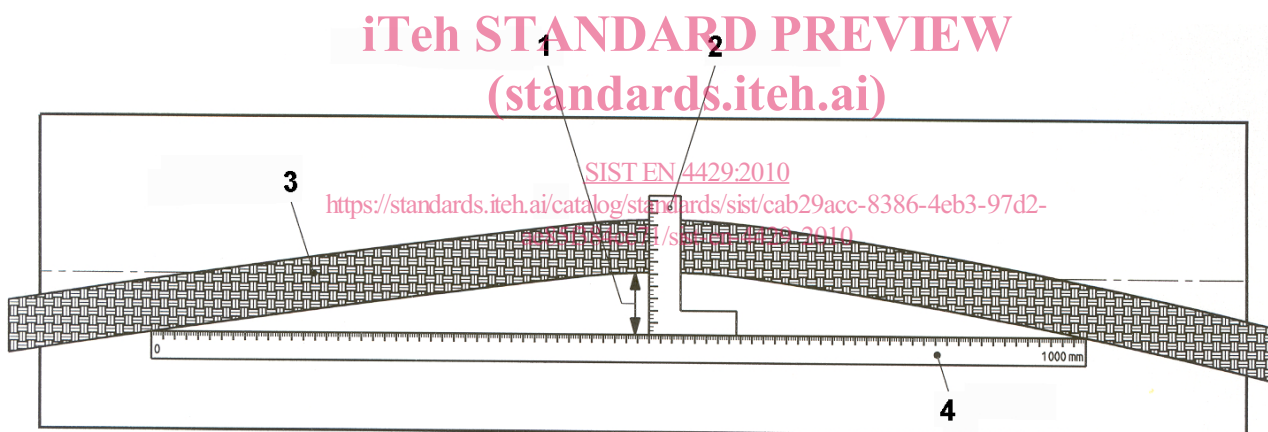
### 8.1 Test piece conditioning

Specimens shall be conditioned faced flat for at least 24 h, without any tension in a standard conditioning atmosphere according to EN 4415 and maintained in this atmosphere until the tests have been carried out.

### 8.2 Testing procedure

The tests shall be performed in a standard atmosphere according to EN 4415.

- Lay the specimen flat without tension, approximately along the longitudinal axis of the test plate by "tapping" it, if necessary, but taking care not to incurvate or redress it.
- Leave it aside for at least 1 min.
- Position the ruler to make the graduations 0 mm and 1 000 mm coincide with the specimen's inside border (see Figure 2).
- Place the set square along the ruler taking care to not move the specimen and measure the maximum distance, in millimetres, between the specimen's inside edge and the ruler.
- Repeat this procedure for the other two specimens.



#### Key

- 1 Warp bow measurement
- 2 Set square
- 3 Specimen
- 4 Ruler

Figure 2

## 9 Expression of results

Calculate the arithmetic mean of the three values and express it in millimetres.