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SIST EN 4505:2014

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EUROPEAN STANDARD

EN 4505

NORME EUROPÉENNE

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English Version

## Aerospace series - Non-metallic materials - Textiles - Test method - Determination of dimensional stability

Série aérospatiale - Matériaux non-métalliques - Textiles -  
Méthode d'essai - Détermination de la stabilité

Luft- und Raumfahrt - Nichtmetallische Werkstoffe -  
Textilien - Prüfverfahren - Bestimmung der Maßänderung

This European Standard was approved by CEN on 8 May 2013.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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## Foreword

This document (EN 4505:2013) 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of an identical text or by endorsement, at the latest by January 2014, and conflicting national standards shall be withdrawn at the latest by January 2014.

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, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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## Introduction

This standard specifies the determination of dimensional stability of narrow fabrics.

### 1 Scope

This European Standard specifies the procedure for the determination of dimensional stability of narrow fabrics.

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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*

### 3 Terms and definitions

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

#### 3.1 dimensional stability

the ability of a fabric to retain its dimensions when immersed in boiling water

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#### 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.

### 5 Principle

The test consists in measuring the changes in length after immersion in boiling water.

### 6 Apparatus

A sufficiently large dish to accommodate the specimen.

A plate glass sheet large enough to cover the specimen.

## 7 Reagents

No requirements

## 8 Preparation of specimens

Cut a specimen not less than 450 mm long from the test sample and make a mark approximately 50 mm from each end.

## 9 Procedure

**9.1** With the specimen laid on a flat surface and covered with a sheet of plate glass, accurately measure the distance between the marks.

**9.2** Lay the specimen flat in boiling water and keep it approximately 25 mm below the water surface using small weights as necessary.

**9.3** After 15 minutes in the boiling water remove the specimen. Allow to dry on a flat surface at room temperature and then condition it according to ISO 139 and maintain this atmosphere until the test has been carried out.

**9.4** Repeat the measurement through the plate glass.

NOTE The usual convention is to denote extension by an A+@ sign and a shrinkage by an A-@ sign.

## 10 Calculation and expression of results

### 10.1 Calculation of dimensional stability

The dimensional stability is calculated in accordance with the following equation:

$$Cl = \frac{d1 - d2}{d2} \times 100$$

where

Cl is the percentage change in length;

d1 is the final length

d2 is the original length.

## 11 Test report

The report shall include the following information:

- Reference to this European Standard, i.e. EN 4505.
- Identification of sample tested (i.e. lot number, batch number).
- Percentage dimensional change in length and/or width.
- State if dimension has decreased (shrinkage) by means of a minus sign (–) or increased (extension) by means of a plus sign (+).
- Details of any deviation from this test method.