

**Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-24: Tests - Screen testing of ceramic alignmentsplit sleeve by stress application**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 61300-2-24:2010 sisaldab Euroopa standardi EN 61300-2-24:2010 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 31.10.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 09.07.2010.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 61300-2-24:2010 consists of the English text of the European standard EN 61300-2-24:2010.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.10.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 09.07.2010.

The standard is available from Estonian standardisation organisation.

ICS 33.180.20

### Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:  
Aru 10 Tallinn 10317 Eesti; [www.evs.ee](http://www.evs.ee); Telefon: 605 5050; E-post: [info@evs.ee](mailto:info@evs.ee)

### Right to reproduce and distribute belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:  
Aru str 10 Tallinn 10317 Estonia; [www.evs.ee](http://www.evs.ee); Phone: 605 5050; E-mail: [info@evs.ee](mailto:info@evs.ee)

English version

**Fibre optic interconnecting devices and passive components -  
Basic test and measurement procedures -  
Part 2-24: Tests -  
Screen testing of ceramic alignment split sleeve by stress application  
(IEC 61300-2-24:2010)**

Dispositifs d'interconnexion et composants  
passifs à fibres optiques -  
Méthodes fondamentales d'essais  
et de mesures -  
Partie 2-24: Essais -  
Essai de sélection du manchon fendu  
d'alignement en céramique  
par l'application de contrainte  
(CEI 61300-2-24:2010)

Lichtwellenleiter -  
Verbindungselemente und passive  
Bauteile -  
Grundlegende Prüf- und Messverfahren -  
Teil 2-24: Prüfungen -  
Sortierprüfung keramischer Zentrierhülsen  
mit Beanspruchung  
(IEC 61300-2-24:2010)

This European Standard was approved by CENELEC on 2010-07-01. CENELEC 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 CENELEC 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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 86B/2967/FDIS, future edition 2 of IEC 61300-2-24, prepared by SC 86B, Fibre optic interconnecting devices and passive components, of IEC TC 86, Fibre optics, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61300-2-24 on 2010-07-01.

This European Standard supersedes EN 61300-2-24:2000.

EN 61300-2-24:2010 constitutes a technical revision. Specific technical changes involve the addition of a dimension example of the reference gauge and the plate for the ceramic sleeve and a commonly used ceramic alignment sleeve for the 1,25 mm ceramic sleeve.

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

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2011-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2011-07-01

## Endorsement notice

The text of the International Standard IEC 61300-2-24:2010 was approved by CENELEC as a European Standard without any modification.

This document is a preview generated by EVS

## CONTENTS

FOREWORD.....	3
1 Scope.....	5
2 General description .....	5
3 Apparatus.....	5
4 Procedure .....	7
5 Details to be specified .....	7
Annex A (informative) Static fatigue for zirconia alignment sleeve.....	8
Bibliography.....	15
Figure 1 – Apparatus used for screen testing of a ceramic alignment sleeve.....	6
Figure A.1 – Model of time-varying proof stress for a zirconia sleeve.....	10
Figure A.2 – Calculated contour lines of gauge retention force and working stress along with inner and outer diameter of a zirconia sleeve.....	11
Figure A.3 – Calculated general relationship between $\sigma_p/\sigma_a$ and $t_e$ , satisfying 0,1 FIT for 20 years use.....	12
Figure A.4 – Calculated failure probability of screened zirconia sleeves along with working time .....	12
Figure A.5 – Measured and calculated strength distribution of 2,5 mm zirconia sleeves (comparison between sleeves, extended proof tested or not).....	13
Figure A.6 – Measured strength distribution of 1,25 mm zirconia sleeves (comparison between sleeves, extended proof tested or not).....	14
Table 1 – Dimension example of the reference gauge and the plate for the ceramic sleeve.....	6
Table 2 – Dimension example of a commonly used ceramic alignment sleeve.....	7
Table A.1 – Measured static fatigue parameters for zirconia sleeves .....	11

This document is a Preview generated by EVS

**FIBRE OPTIC INTERCONNECTING  
DEVICES AND PASSIVE COMPONENTS –  
BASIC TEST AND MEASUREMENT PROCEDURES –**

**Part 2-24: Tests –  
Screen testing of ceramic alignment  
split sleeve by stress application**

**1 Scope**

The purpose of this part of IEC 61300 is to identify weaknesses in a ceramic alignment split sleeve which could lead to early failure of the component.

**2 General description**

Ceramic alignment sleeves are important components often used in the adaptor of plug-adaptor-plug optical connector sets. By using the method described, the component is subjected to a proof stress greater than would be experienced under normal service conditions. This enables weak products to be screened out.

**3 Apparatus**

The apparatus and arrangement necessary to perform this screening procedure are shown in Figure 1. The material needed consists of the following:

- a) a reference gauge made of ceramic with a sleeve-holding section, a tapered section and a stress-applying section. The diameter of each section is dependent on the dimensions of the product being screened. The length of the sleeve-holding section and the stress-applying section should be greater than the component being tested;
- b) plates A and B, each having a clearance hole in the centre to allow the plate to move a sample of a ceramic alignment split sleeve on the reference gauge.