



**NSAI**  
Standards

Irish Standard  
I.S. EN ISO 22088-6:2009

# Plastics - Determination of resistance to environmental stress cracking (ESC) - Part 6: Slow strain rate method (ISO 22088-6:2006)

## I.S. EN ISO 22088-6:2009

*Incorporating amendments/corrigenda issued since publication:*

<i>This document replaces:</i>	<i>This document is based on:</i> EN ISO 22088-6:2009	<i>Published:</i> 24 June, 2009
--------------------------------	--	------------------------------------

This document was published under the authority of the NSAI and comes into effect on: 19 August, 2009	ICS number: 83.080.01
--	--------------------------

<b>NSAI</b> 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W <b>NSAI.ie</b>	<b>Sales:</b> T +353 1 857 6730 F +353 1 857 6729 W standards.ie	<b>Price Code:</b> <b>F</b>
---	---	---	--------------------------------

Údarás um Chaighdeáin Náisiúnta na hÉireann

ICS 83.080.01

English Version

Plastics - Determination of resistance to environmental stress  
cracking (ESC) - Part 6: Slow strain rate method (ISO 22088-  
6:2006)

Plastiques - Détermination de la fissuration sous contrainte  
dans un environnement donné (ESC) - Partie 6: Méthode à  
vitesse de déformation lente (ISO 22088-6:2006)

Kunststoffe - Bestimmung der Beständigkeit gegen  
umgebungsbedingte Spannungsrissbildung (ESC) - Teil 6:  
Verfahren mit langsamer Dehnrage (ISO 22088-6:2006)

This European Standard was approved by CEN on 23 May 2009.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, 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.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

**Contents**

Page

**Foreword.....3**

## **Foreword**

The text of ISO 22088-6:2006 has been prepared by Technical Committee ISO/TC 61 "Plastics" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 22088-6:2009 by Technical Committee CEN/TC 249 "Plastics" the secretariat of which is held by NBN.

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 December 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

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, 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.

### **Endorsement notice**

The text of ISO 22088-6:2006 has been approved by CEN as a EN ISO 22088-6:2009 without any modification.

*This page is intentionally left BLANK.*

I.S. EN ISO 22088-6:2009

# INTERNATIONAL STANDARD

# ISO 22088-6

First edition  
2006-08-01

---

---

## Plastics — Determination of resistance to environmental stress cracking (ESC) —

Part 6:

### Slow strain rate method

*Plastiques — Détermination de la fissuration sous contrainte dans un  
environnement donné (ESC) —*

*Partie 6: Méthode à vitesse de déformation lente*



Reference number  
ISO 22088-6:2006(E)

© ISO 2006

**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2006

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland



# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Principle</b> .....	<b>3</b>
<b>5 Apparatus</b> .....	<b>4</b>
<b>6 Conditioning and test conditions</b> .....	<b>5</b>
<b>6.1 Conditioning</b> .....	<b>5</b>
<b>6.2 Test temperature</b> .....	<b>5</b>
<b>6.3 Test medium</b> .....	<b>5</b>
<b>7 Test specimens</b> .....	<b>5</b>
<b>8 Procedure</b> .....	<b>5</b>
<b>9 Expression of results</b> .....	<b>6</b>
<b>10 Test report</b> .....	<b>7</b>
<b>Annex A (normative) Strain calculation from crosshead displacement</b> .....	<b>8</b>
<b>Bibliography</b> .....	<b>9</b>

## 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 22088-6 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 6, *Ageing, chemical and environmental resistance*.

ISO 22088 consists of the following parts, under the general title *Plastics — Determination of resistance to environmental stress cracking (ESC)*:

- *Part 1: General guidance*
- *Part 2: Constant tensile load method* (replacement of ISO 6252:1992)
- *Part 3: Bent strip method* (replacement of ISO 4599:1986)
- *Part 4: Ball or pin impression method* (replacement of ISO 4600:1992)
- *Part 5: Constant tensile deformation method* (new test method)
- *Part 6: Slow strain rate method* (new test method)

# Plastics — Determination of resistance to environmental stress cracking (ESC) —

## Part 6: Slow strain rate method

### 1 Scope

This part of ISO 22088 describes a procedure for assessing the environmental stress cracking (ESC) susceptibility of polymeric materials in chemical environments by slowly increasing the strain applied to a tensile specimen at a constant rate.

It is applicable to test specimens prepared by moulding and/or machining and can be used to assess the relative ESC susceptibility of a material exposed to different environments or the relative ESC susceptibility of different plastics exposed to a specific environment.

This is essentially a ranking test and is not intended for the provision of design data.

The principle advantage of the test compared with the test methods described in Parts 2 to 5 of ISO 22088 is the rapidity with which the ESC susceptibility of a particular polymer/environment combination can be assessed.

### 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.

ISO 527-2, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics*

ISO 22088-1, *Plastics — Determination of resistance to environmental stress cracking (ESC) — Part 1: General guidance*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 22088-1 and the following apply.

#### 3.1

##### **crosshead displacement**

##### **CHD**

distance the crosshead has moved from the start of the test

#### 3.2

##### **crosshead speed**

##### **CHS**

distance travelled by the crosshead, CHD, divided by the time from the start of the test

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
  - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-