



National Standards Authority of Ireland

IRISH STANDARD

**I.S. EN 14493:2002**

ICS 83.180

**STRUCTURAL ADHESIVES - DETERMINATION  
OF DYNAMIC RESISTANCE TO CLEAVAGE OF  
HIGH STRENGTH ADHESIVE BONDS UNDER  
IMPACT CONDITIONS - WEDGE IMPACT  
METHOD (ISO 11343:1993 MODIFIED)**

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EUROPEAN STANDARD

**EN 14493**

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2002

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ICS 83.180

English version

**Structural adhesives - Determination of dynamic resistance to cleavage of high strength adhesive bonds under impact conditions - Wedge impact method (ISO 11343:1993 modified)**

Adhésifs - Détermination de la résistance dynamique à un clivage de joints collés à haute résistance soumis aux conditions d'impact - Méthode d'impact au coin (ISO 11343:1993 modifiée)

Strukturklebstoffe - Bestimmung des dynamischen Keil-Schlag-Widerstandes von hochfesten Klebungen unter Schlagbelastung - Keil-Schlag-Verfahren (ISO 11343:1993 modifiziert)

This European Standard was approved by CEN on 16 October 2002.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
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## **Foreword**

The text of the International Standard from Technical Committee ISO/TC 61 "Plastics" of the International Organization for Standardization (ISO) has been taken over as a European Standard by Technical Committee CEN/TC 193 "Adhesives", the secretariat of which is held by AENOR.

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 May 2003, and conflicting national standards shall be withdrawn at the latest by May 2003.

### **Endorsement notice**

The text of ISO 11343:1993 has been approved by CEN as a draft European Standard with agreed common modifications as given below:

- the title has been modified ,
- Figure 1 is given as an example,
- the normative references have been updated and,
- a "Safety" clause has been introduced.

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

## EN 14493:2002 (E)

### 1 Scope

This European Standard specifies a dynamic impact wedge method for the determination of the cleavage resistance under impact loading of high-strength adhesive bonds between two metallic adherends, when tested under specified conditions of preparation and testing.

The method allows a choice of sheet metal substrate corresponding to those materials frequently used in industry, e.g. for automotive applications.

### 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 923, *Adhesives – Terms and definitions*.

EN 29142, *Adhesives – Guide to the selection of standard laboratory ageing conditions for testing bonded joints (ISO 9142:1990)*.

prEN 13887, *Structural adhesives – Guidelines for surface preparation of metals and plastics prior to adhesive bonding*.

EN ISO 10365, *Adhesives – Designation of main failure patterns (ISO 10365:1992)*.

### 3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 923 and the following apply.

#### 3.1

##### **dynamic resistance to cleavage**

force per unit width, necessary to bring an adhesive joint to the point of failure by means of a stress applied by a wedge moving between the two substrates of the joint, and thus separating the adherends in a peeling mode

It is expressed in kilonewtons per metre.

### 4 Principle

The method consists of the determination of the average cleavage resistance, expressed as force or energy, of the adhesive bond between two metallic adherends. The cleavage corresponds to the separation of the adherends by a wedge, moving at high speed, whose displacement is initiated by an impact.

### 5 Safety

Persons using this standard shall be familiar with normal laboratory practice.

This standard does not purport to address all the safety problems, if any, associated with its use.

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