SLOVENSKI STANDARD
kSIST FprEN 12962:2010

01-december-2010

Lepila - Določevanje elastičnih lastnosti tekočih lepil ("indeks elastičnosti")

Adhesives - Determination of elastic behaviour of liquid adhesives (elasticity index)

Klebstoffe - Bestimmung des elastischen Verhaltens flüssiger Klebstoffe (Elastizitätsindex)

Adhésifs - Détermination du comportement élastique des adhésifs liquides (indice d'élasticité)

Ta slovenski standard je istoveten z: **FprEN 12962**

ICS:

83.180	Lepila	Adhesives

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FINAL DRAFT
FprEN 12962

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English Version

Adhesives - Determination of elastic behaviour of liquid adhesives (elasticity index)

Adhésifs - Détermination du comportement élastique des adhésifs liquides (indice d'élasticité)

Klebstoffe - Bestimmung des elastischen Verhaltens flüssiger Klebstoffe (Elastizitätsindex)

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (FprEN 12962:2010) has been prepared by Technical Committee CEN/TC 193 “Adhesives”, the secretariat of which is held by AENOR.

This document is currently submitted to the Unique Acceptance Procedure.

This document will supersede EN 12962:2001.

The main modifications regarding the previous version are in Figure 1 and 6.10.

SAFETY STATEMENT — Persons using this document should be familiar with the normal laboratory practice, if applicable. This document does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any regulatory conditions.

ENVIRONMENTAL STATEMENT — It is understood that some of the material permitted in this standard may have negative environmental impact. As technological advantages lead to acceptable alternatives for these materials, they will be eliminated from this standard to the extent possible.

At the end of the test, the user of the standard should take care to carry out an appropriate disposal of the wastes, according to local regulation.

Introduction

Many liquid elastomeric adhesives show, depending on the nature of basic elastomer, under specific conditions an elastic behaviour.

The elastic behaviour of an adhesive apart of its viscosity is of great practical significance. It affects both processability (by brush or roller) of an adhesive and its bonding properties to porous substrates like wood, leather or fabric.

For achieving optimum bond strength on porous substrates it is indispensable to adjust both viscosity and elasticity to the porosity of the substrates to be bonded. At a given viscosity, if the elasticity is too high, the adhesive will only rest on the surface of the substrate without penetration and anchoring in the substrate. If, on the contrary, the elasticity is too low, the adhesive is almost completely absorbed by the porous substrate without being able to form a bond-line. In both cases a lower bond strength results.

A "cone and plate rheometer" as specified in EN 12092 allows to determine viscosity and elasticity of an adhesive by measurement of shear tension and tension vertical to shear tension ("normal tension"). However, a "cone and plate rheometer" is very expensive and its maintenance too, operating requires a skilled staff, and cleaning is time-consuming. It is mainly used for scientific purposes.

1 Scope

This European Standard specifies a test method to determine the elastic behaviour of and elastomeric monocomponent liquid adhesive under specified conditions.

This method is particularly suitable for production control.

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 923:2005+A1:2008, *Adhesives — Terms and definitions*

EN 1067, *Adhesives — Examination and preparation of samples for testing*

EN ISO 15605, *Adhesives — Sampling (ISO 15605:2000)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 923:2005+A1:2008 apply.

4 Principle

A specifically shaped and graduated spindle (see Figure 1) is dipped into the adhesive to be tested. The shaft of the spindle is attached to a motor rotating at a constant specified speed for a certain period of time. During rotation, the adhesive under test rises (in equilibrium to gravitation) up to a reproducible height on reading of the spindle shaft. The height (in millimetres) measured is taken as "elasticity index".

5 Apparatus

5.1 Beakers, of 100 mm diameter, capacity about 1 000 ml (see Figure 1).

5.2 Spindle, with size and dimensions shown in Figure 1, with markings at 10 mm intervals and sub-graduated to millimetres.

5.3 Mechanical or electronic stirrer, with the possibility of fine speed control.

5.4 Analytical balance, with scale divisions of 0,01 g.

5.5 Stopwatch, or other suitable timing-device with accuracy of 0,2 s or higher.

5.6 Temperature-controlled room or enclosure, capable of maintaining the sample and the necessary apparatus at (23,0 ± 0,5) °C.

6 Procedure

6.1 Carry out the determination in duplicate.

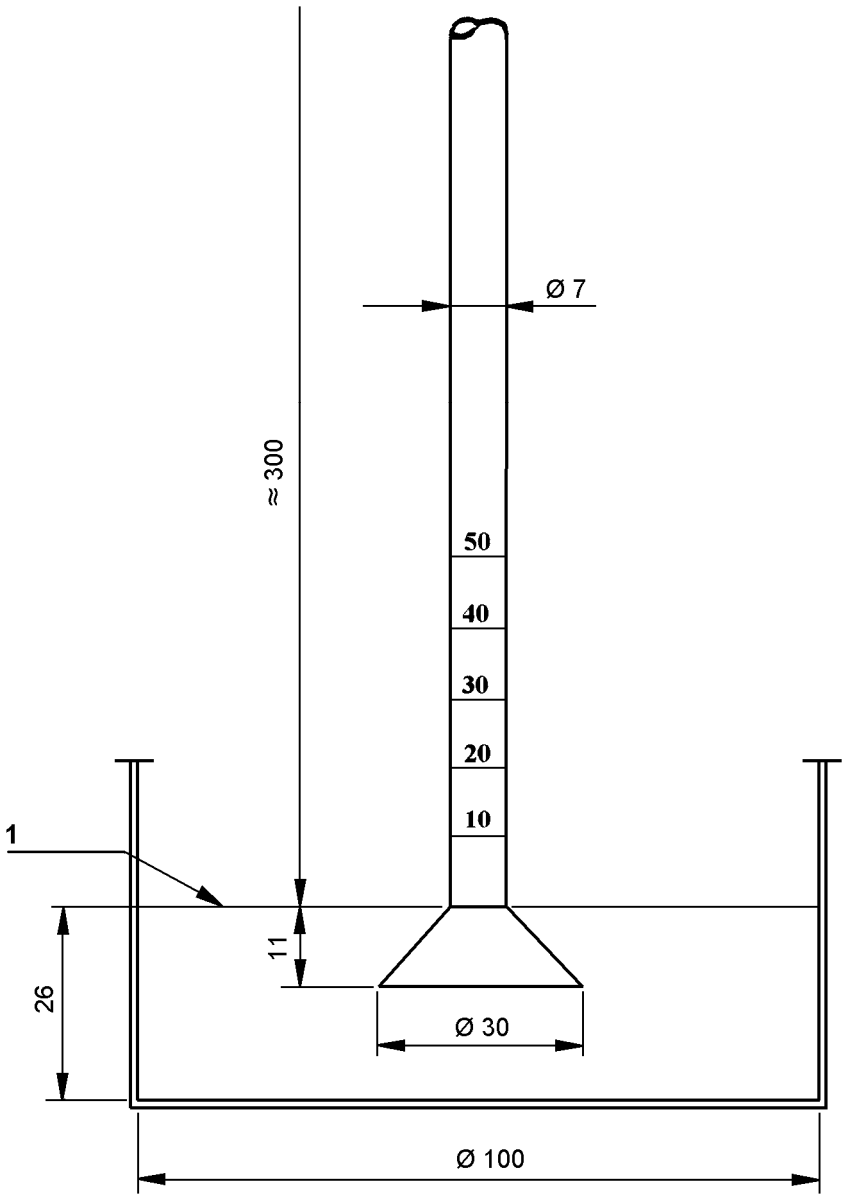
6.2 A significant sample of the adhesive shall be taken in accordance with EN ISO 15605 and prepared for testing as described in EN 1067. Store the sample in a closed container and keep it in the temperature-controlled room (5.6) until the sample reaches (23 ± 2) °C (at least 30 min).

In order to minimize evaporation of solvent, the operations from 6.3 to 6.8 shall be carried out in the shortest possible time.

6.3 Weight (200,0 ± 0,1) g of the adhesive under test into the beaker (5.1).

6.4 Place the beaker containing the adhesive under the stirrer (5.3) taking care to centre the beaker.

Dimensions in millimetres



Key

1 Solution level

Figure 1 — Spindle