SLOVENSKI STANDARD
SIST-TS CEN/TS 14999:2013

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Nadomešča:
SIST-TS CEN/TS 14999:2006

Lepila za plastomerne cevne sisteme - Preskus pospešenega staranja lepil

Adhesives for thermoplastic piping systems - Accelerated ageing test in storage container

Klebstoffe für thermoplastische Rohrleitungssysteme - Prüfung von Klebstoffen bei künstlicher Alterung

Adhésifs pour canalisations thermoplastiques - Test de vieillissement accéléré des adhésifs

Ta slovenski standard je istoveten z: **CEN/TS 14999:2013**

ICS:

23.040.01	Deli cevovodov in cevovodi na splošno	Pipeline components and pipelines in general
83.180	Lepila	Adhesives

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TECHNICAL SPECIFICATION

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Supersedes CEN/TS 14999:2006

English Version

Adhesives for thermoplastic piping systems - Accelerated ageing test in storage container

Adhésifs pour canalisations thermoplastiques - Adhésifs pour canalisations thermoplastiques - Test de vieillissement accéléré des adhésifs

Klebstoffe für thermoplastische Rohrleitungssysteme - Prüfung von Klebstoffen bei künstlicher Alterung im Lagerbehälter

This Technical Specification (CEN/TS) was approved by CEN on 4 March 2013 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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

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Foreword

This document (CEN/TS 14999:2013) has been prepared by Technical Committee CEN/TC 193 “Adhesives”, the secretariat of which is held by AENOR.

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.

This document supersedes CEN/TS 14999:2006.

CEN/TS 14999:2013 includes the following significant technical changes with respect to CEN/TS 14999:2006:

- Inclusion of environmental and safety statements on the foreword;
- Modification of title to be in line with the scope;
- New explanatory note added to the scope;
- Definition of the RH on standard conditions;
- Minor changes on the procedure.

SAFETY PRECAUTIONS — 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 PRECAUTIONS — 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 regulations.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce this Technical Specification: 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.

1 Scope

This Technical Specification describes a method for an accelerated ageing test of an adhesive in its container. The result provides the manufacturer with an indication of the storage stability of the adhesive and container combination and their ability to retain adhesive properties.

The method described is intended for solvent based adhesives for thermoplastic piping systems but may be applied to other adhesive types if appropriate.

The method described in this Technical Specification does not give a correlation between the results obtained after the accelerated ageing test and after the shelf life of the adhesive at the ambient conditions defined by the manufacturer in the data sheet.

NOTE Some of the solvents used in adhesives applied for bonding pipe joints are highly flammable and may even cause explosion when heated (tetrahydrofurane). Therefore, the users of this standard need to take special precautions when testing such adhesives according to the provisions of this standard which require prolonged heating of the container with the adhesive.

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.

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

EN 12092, *Adhesives — Determination of viscosity*

EN 14680, *Adhesives for non-pressure thermoplastic piping systems — Specifications*

EN 14814, *Adhesives for thermoplastic piping systems for fluids under pressure — Specifications*

EN ISO 9311-1, *Adhesives for thermoplastic piping systems — Part 1: Determination of film properties (ISO 9311-1)*

EN ISO 9311-2, *Adhesives for thermoplastic piping systems — Part 2: Determination of shear strength (ISO 9311-2)*

3 Terms and definitions

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

4 Principe

The sample is subjected to a combination of temperature and time under specified conditions, followed by comparison of the viscosity and the shear strength of the adhesive bond made with the aged sample with those of a reference sample that has been maintained under standard reference conditions; i.e. (23 ± 2) °C.

5 Apparatus

5.1 **Oven**, able to maintain a temperature of (50± 2) °C or (40± 2) °C.

5.2 Climatic chamber, able to maintain the conditions to (23± 2) °C.

6 Sampling

Take a minimum of six identical unopened containers of each adhesive, three to be exposed to the ageing conditions and three as reference sample.

Typical examples of containers commonly used for adhesives for thermoplastic piping systems, though not exhaustive, are:

a) tin plated can + tin plated cap;

b) tin plated can + plastic cap;

c) aluminium plated can + plastic cap;

d) brown glass bottle + plastic cap;

e) plastic container + plastic cap.

7 Procedure

Put the three samples of the adhesive in an oven (5.1) for 28 days at (50± 2) °C. Depending on the character of the adhesive, lower temperatures may be used, e.g. (40± 2) °C for three months.

At the end of the test period, condition the aged samples for 24 h at (23± 2) °C in the climatic chamber (5.2).

Put the reference sample in a climatic chamber at (23± 2) °C for 24 h.

Determine the viscosity in accordance with EN 12092, film properties in accordance with EN ISO 9311-1 and the shear strength at 24 h setting time in accordance with EN ISO 9311-2 for all the samples (aged and reference samples).

Calculate the average value of the viscosity, film properties and shear strength of the adhesive bonds made with all the samples.

The average value of the viscosity, film properties and the shear strength of the adhesive bonds made with the aged samples compared to those of the reference samples gives an indication of the storage stability of the adhesive and container combination and their ability to retain adhesive properties.

The average value for viscosity and film properties for the aged samples shall conform to the manufacturers specifications for application properties.

The average value for the shear strength at 24 h for the adhesive bonds made with the aged samples shall meet the requirements in the system standards (EN 14680 or EN 14814, depending on the type of adhesive).

NOTE Following the weight loss and viscosity on the aged samples can help in understanding the behaviour of each adhesive and container couple.

8 Test Report

The test report shall include, at least, the following information:

a) a reference to this Technical Specification (i.e. CEN/TS 14999:2013);

b) type and identification (batch number, date of manufacturing or other code) of the adhesive tested;

c) description of the packaging tested;

d) the average viscosity value of the three aged samples and that of the three reference samples;

e) the average film properties value for the aged samples and the reference samples;

f) the shear strength obtained for the adhesive bonds made with the aged samples and the reference samples;

g) any modification of the procedures described, and any incident which may have affected the results;

h) observations of the visual appearance of the containers and the adhesive after aging;

i) date of the test.