



**SLOVENSKI STANDARD**  
**oSIST prEN 13880-4:2022**

**01-december-2022**

---

**Tesnilne mase za stike, ki se vgrajujejo po vročem postopku - 4. del: Preskusna metoda za karakterizacijo odpornosti proti toploti - Sprememba penetracije**

Hot applied joint sealants - Part 4: Test method for the characterization of heat resistance - Change in penetration value

Heiß verarbeitbare Fugenmassen - Teil 4: Prüfverfahren zur Bestimmung der Wärmebeständigkeit - Änderung der Konus-Penetration

Produits de scellement de joints appliqués à chaud - Partie 4 : Méthode d'essai pour la détermination de la résistance à la chaleur - Variation de la pénétrabilité

**Ta slovenski standard je istoveten z: prEN 13880-4**

---

**ICS:**

91.100.50	Veziva. Tesnilni materiali	Binders. Sealing materials
93.080.20	Materiali za gradnjo cest	Road construction materials

**oSIST prEN 13880-4:2022**

**en,fr,de**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 13880-4**

October 2022

ICS 93.080.20

Will supersede EN 13880-4:2003

English Version

## Hot applied joint sealants - Part 4: Test method for the characterization of heat resistance - Change in penetration value

Produits de scellement de joints appliqués à chaud -  
Partie 4 : Méthode d'essai pour la détermination de la  
résistance à la chaleur - Variation de la pénétrabilité

Heiß verarbeitbare Fugenmassen - Teil 4:  
Prüfverfahren zur Bestimmung der  
Wärmebeständigkeit - Änderung der Konus-  
Penetration

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 227.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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-CENELEC Management Centre has the same status as the official versions.

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

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

**Warning** : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

<b>Contents</b>		Page
European foreword.....		3
1	Scope .....	4
2	Normative references .....	4
3	Terms and definitions .....	4
4	Principle .....	4
5	Apparatus.....	5
6	Procedure.....	5
6.1	General.....	5
6.2	Exposure at elevated temperature .....	5
6.3	Cone penetration.....	5
6.4	Penetration and recovery (resilience).....	5
6.5	Test conditions for storage at elevated temperature .....	5
6.6	Conditioning after storage at elevated temperature .....	5
7	Expression of results.....	5
8	Precision.....	6
9	Test report.....	6
Bibliography.....		7

oSIST prEN 13880-4:2022

<https://standards.iteh.ai/catalog/standards/sist/e40c6949-8c61-4480-8241-2b657bd66d1c/osist-pren-13880-4-2022>

## European foreword

This document (prEN 13880-4:2022) has been prepared by Technical Committee CEN/TC 227 “Road materials”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 13880-4:2003.

This document is one part of the EN 13880 series of standards, *Hot applied joint sealants*, which consists of the following parts:

- *Part 1: Test method for the determination of density at 25 °C*
- *Part 2: Test method for the determination of cone penetration at 25 °C*
- *Part 3: Test method for the determination of penetration and recovery (resilience)*
- *Part 4: Test method for the determination of heat resistance - Change in penetration value*
- *Part 5: Test method for the determination of flow resistance*
- *Part 6: Method for the preparation of samples for testing*
- *Part 7: Function testing of joint sealants*
- *Part 8: Test method for the determination of the change in weight of fuel resistance joint sealants after fuel immersion*
- *Part 9: Test method for the determination of compatibility with asphalt pavements*
- *Part 10: Test method for the determination of adhesion and cohesion following continuous extension and compression*
- *Part 11: Test method for the preparation of asphalt test blocks used in the function test and for the determination of compatibility with asphalt pavements*
- *Part 12: Test method for the manufacture of concrete test blocks for bond testing (recipe methods)*
- *Part 13: Test method for the determination of the discontinuous extension (adherence test)*

## prEN 13880-4:2022 (E)

### 1 Scope

This document describes a method to characterize the resistance against elevated temperature on samples of hot applied joint sealants according to EN 14188-1 by comparing the cone penetration and resilience values before and after exposure.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 13880-2, *Hot applied joint sealants - Part 2: Test method for the determination of cone penetration at 25°C*

EN 13880-3, *Hot applied joint sealants - Part 3: Test method for the determination of penetration and recovery (resilience)*

ISO 188, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat resistance tests*

EN 58, *Bitumen and bituminous binders - Sampling bituminous binders*

EN 14188-1, *Joint fillers and sealants - Part 1: Specifications for hot applied sealants*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

#### 3.1 characterization of heat resistance

sensitivity to elevated temperatures characterized by the penetration value and the ball penetration and recovery (resilience) values on a sealant laboratory sample heated at elevated temperatures before testing

### 4 Principle

A representative portion of the sealant (test sample according to EN 58) shall be poured into metal containers (sample tins = specimen) to provide the test specimens for examination. Two specimens shall be placed in an oven at an elevated temperature for a specified period of time, then conditioned prior to testing in air and in a water bath. Afterwards, the specimens shall be tested to determine the cone penetration and resilience values.

The test results obtained before and after exposure at elevated temperature shall be reported according to EN 13880-2 and EN 13880-3.

## 5 Apparatus

**5.1 Forced-air ventilated laboratory oven** complying with ISO 188 and capable of maintaining the specimens at a temperature of  $(70 \pm 1)$  °C.

**5.2 Technical Equipment** as described in EN 13880-3.

**5.3 Technical Equipment** as described in EN 13880-2.

## 6 Procedure

### 6.1 General

For comparing with normal temperatures, perform tests EN 13880-2 and EN 13880-3 on specimen taken from the same portion of laboratory sample.

### 6.2 Exposure at elevated temperature

Two specimens (sample tins) are placed in an oven according to 5.1 and exposed to an elevated temperature of  $(70 \pm 1)$  °C for a period of  $(168 \pm 2)$  h. After exposure both specimens are conditioned prior to testing according to EN 13880-2 or EN 13880-3, respectively. During conditioning the specimen shall be protected e.g. against dust and rapid cooling by a covering/lid.

### 6.3 Cone penetration

Use one conditioned specimen (sample tin) to determine the cone penetration after exposure at an elevated temperature according to EN 13880-2.

### 6.4 Penetration and recovery (resilience)

Use one conditioned specimen (sample tin) to determine the ball penetration and recovery (resilience) after exposure at an elevated temperature according to EN 13880-3.

### 6.5 Test conditions for storage at elevated temperature

Store the test specimens in the oven according to 5.1 at  $(70 \pm 2)$  h.

### 6.6 Conditioning after storage at elevated temperature

Remove the specimens after the storage and protect them against dust and allow to cool in air at a temperature of  $(23 \pm 2)$  °C for a period of  $(1,75 \pm 0,25)$  h.

## 7 Expression of results

**7.1** Report the test results for the cone penetration after exposure at elevated temperature in 0,1 mm according to EN 13880-2 and calculate the difference of material characteristic before and after exposure.

NOTE Different from EN 13880-2, only 1 specimen (sample tin) is tested and evaluated.

**7.2** Report the test results of the recovery  $R$  after exposure at elevated temperature, according to EN 13880-3, and calculate the difference of material characteristic before and after exposure.

NOTE Different from EN 13880-3, only 1 specimen (sample tin) is tested and evaluated.