



**SLOVENSKI STANDARD**  
**oSIST prEN 12697-14:2019**  
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**Bitumenske zmesi - Preskusne metode - 14. del: Delež vode**

Bituminous mixtures - Test methods - Part 14: Water content

Asphalt - Prüfverfahren - Teil 14: Wassergehalt

Mélanges bitumineux - Méthodes d'essai - Partie 14: Teneur en eau

**Ta slovenski standard je istoveten z: prEN 12697-14**

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**ICS:**

93.080.20      Materiali za gradnjo cest      Road construction materials

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Will supersede EN 12697-14:2000

English Version

## Bituminous mixtures - Test methods - Part 14: Water content

Mélanges bitumineux - Méthodes d'essai - Partie 14:  
Teneur en eau

Asphalt - Prüfverfahren - Teil 14: Wassergehalt

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.

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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.

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

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## iTeh STANDARD PREVIEW (standards.iteh.ai)

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## European foreword

This document (prEN 12697-14:2018) 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 enquiry.

This document will supersede EN 12697-14:2000.

The following is a list of significant technical changes since the previous edition:

- The title no longer makes the method exclusively for hot mix asphalt;
- [ge] Editorial update according to current standard template;
- [Bibliography] Reference to EN 12697-1:2000 deleted. EN 12697-38 added.

A list of all parts in the EN 12697 series can be found on the CEN website

**WARNING** — The method described in this standard may require the use of dichloromethane (methylene chloride), this solvent is hazardous to health and is subject to occupational limits as detailed in relevant legislation and regulations.

Exposure levels are related to both handling procedures and ventilation provision and it is emphasized that adequate training should be given to staff employed in the usage of these substances.

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## prEN 12697-14:2018 (E)

### 1 Scope

This document describes a test method for the determination of the water content of samples of bituminous mixtures. The test method is suitable for checking conformity to a product specification, where required.

### 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 12697-27, *Bituminous mixtures - Test methods - Part 27: Sampling*

### 3 Reagents

Solvents used in this European Standard shall be capable of dissolving bitumen and distilling the solution to recover the water present. The solvents shall not decompose in water and shall have a boiling point of not more than 85 °C to prevent the water from boiling.

NOTE Currently all hydrocarbon solvents are regarded as “hazardous” and “environmentally unfriendly” to varying degrees.

Until such time as there is an agreed CEN policy with regard to their usage, each member state should specify its preferred solvent taking into account the Montreal Protocol and views of its own Regulatory Bodies (see also “Warning” in the foreword).

When trichloroethylene is recovered by distillation for further use, care should be taken to ensure that the solvent still conforms to the appropriate requirements. In particular, acidity may develop and a useful precaution is to store the solvent over calcium oxide in coloured glass or suitable metal containers.

The solvent should be checked regularly to ensure that it is “dry”.

The method consists of preheating a probe attached to a temperature measuring device before measuring the temperature at stated depths in a number of locations while the asphalt is in one of several different places and then calculating the average.

### 4 Apparatus

Apparatus should be calibrated and traceable as recommended in EN 12697-38.

NOTE A suitable assembly is shown in Figure 1.

**4.1** Hot extractor consisting of a cylindrical container made from non-corrodible or brass gauze of about 1 mm to 2 mm aperture size or, alternatively, a spun copper tube with a ledge at the bottom of which a removable brass gauze disc rests. The container is retained, by any suitable means, in position in the top two-thirds of a metal pot. The pot is flanged and fitted with a secure cover and suitable jointing gasket. The cover is held in the position so that the joint between the container and the cover is solvent tight.

NOTE 1 The essential features of the construction are indicated in Figures 2 and 3.

NOTE 2 It is advantageous to have containers and pots of more than one size, the size employed being appropriate to quantity of material taken for analysis.

**4.2** 12,5 ml graduated receiver.

NOTE The receiver may be fitted with ground glass joints; in this case an adapter may be necessary to connect the receiver to the cover of the pot.

**4.3** Water-cooled reflux condenser with a cooled length of at least 200 mm and the lower end ground at an angle of 45°, to the axis of the condenser.

**4.4** Balance, capable of weighing a test portion to an accuracy of 0,05 % of its mass.

**4.5** Heater, such as an electric hotplate.

Gas rings should not be used because of the risk of toxic fumes arising from decomposition of any free solvent vapour and the corrosion of the pot if made of steel.

**4.6** Closed container.

**4.7** Oven, well ventilated.

## **5 Preparation of laboratory samples of bituminous mixtures**

If required, prepare laboratory samples in accordance with EN 12697-27 to obtain suitable test portions.

## **6 Procedure**

**6.1** Take that part of the laboratory sample that was put aside during the sample reduction for the determination of water content and divide it into two portions by quartering and retain one portion in a closed container.

**6.2** Weigh the other portion to the nearest 0,05 % and place it in a well-ventilated oven at  $(110 \pm 10)$  °C for 1 h. Re-weigh this portion and if the loss in mass is less than 0,1 % no further action is required except to record the result as < 0,1 %.

**6.3** If the loss in mass exceeds 0,1 % weigh the portion that was retained and transfer it to a dry hot extractor pot. Alternatively place the portion in the cylindrical container before transferring it to the extractor pot.

NOTE A filter paper may be used to line the gauze container if desired.

**6.4** Add sufficient solvent (see Clause 3) to permit refluxing to take place and then bolt on the cover with the dry gasket in position. Fit the receiver (see 4.2) and condenser (see 4.3) in place. Ensure an adequate flow of cold water through the condenser and heat the pot to give a steady reflux action.

**6.5** Continue heating until the volume of water in the receiver remains constant for at least 5 min.

**6.6** Measure the volume of water and record its mass

NOTE For this method assume that 1 ml of water weighs 1 g.

**prEN 12697-14:2018 (E)****7 Expression of results**

Calculate the water content, in percent by mass, of either

- a) the original sample to the nearest 0,1 % or
- b) the dried portions of the nearest 0,1 %.

Record the water content to the nearest 0,1 % by mass.

**8 Test report**

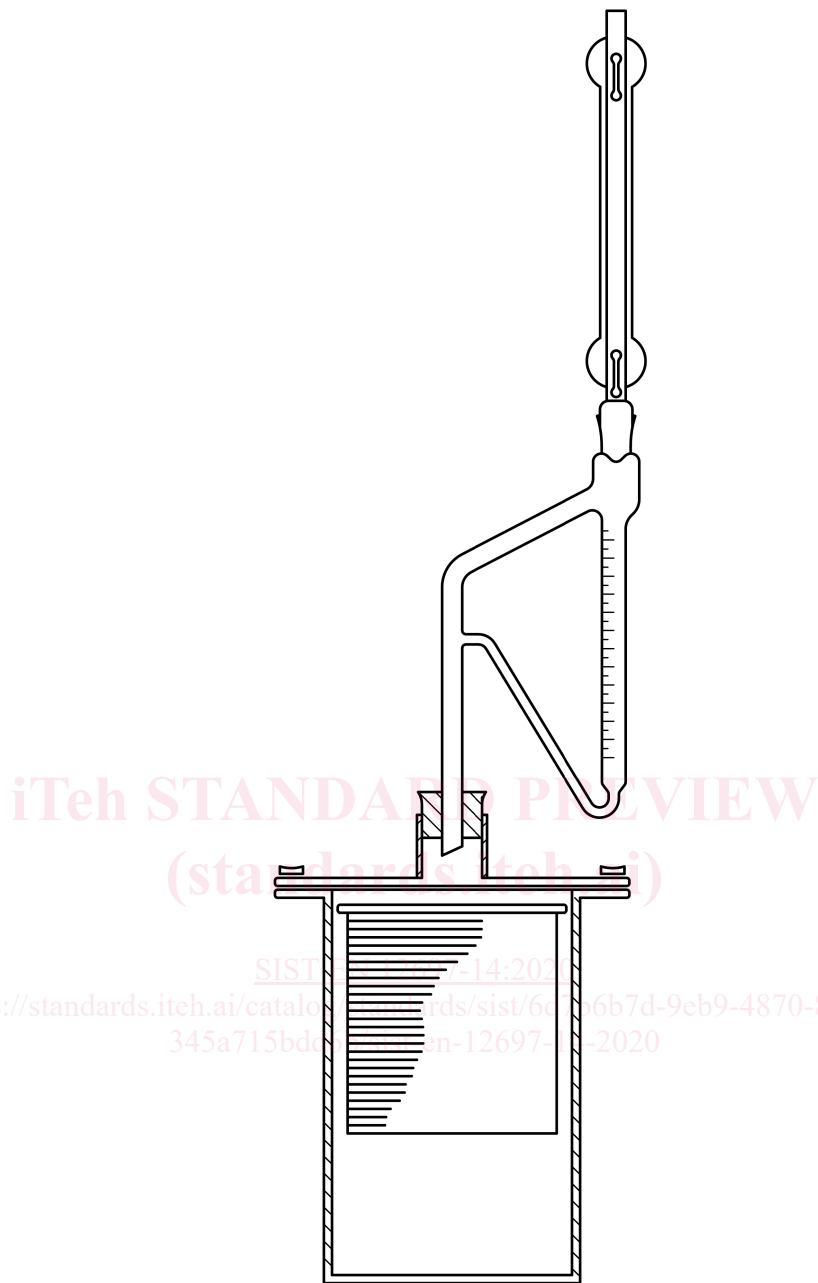
The test report shall contain at least the following information in addition to that required by Clause 7:

- a) name and address of the testing laboratory;
- b) unique serial number for test report;
- c) name of the client;
- d) description and an identification of the sample, and the date of receipt;
- e) identification of the test method by reference to this European Standard;
- f) whether or not the sample was accompanied by a sampling certificate;
- g) signature of officer accepting the technical responsibility for the test report;
- h) date of issue.

**9 Precision** <https://standards.iteh.ai/catalog/standards/sist/6d7b6b7d-9eb9-4870-889d-345a715bdd6b/sist-en-12697-14-2020>

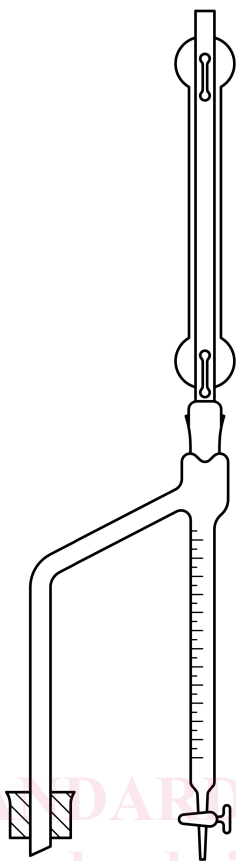
There is no precision statement for these methods of determining the water content of bituminous mixtures.





a) Solvent density > 1

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b) Solvent density  $< 1$

**Figure 1 — Assembled apparatus for the hot extractor method**

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