

DIN EN 12697-24



ICS 93.080.20

Supersedes
DIN EN 12697-24:2012-08

**Bituminous mixtures –
Test methods –
Part 24: Resistance to fatigue;
English version EN 12697-24:2018,
English translation of DIN EN 12697-24:2018-11**

Asphalt –
Prüfverfahren –
Teil 24: Beständigkeit gegen Ermüdung;
Englische Fassung EN 12697-24:2018,
Englische Übersetzung von DIN EN 12697-24:2018-11

Mélanges bitumineux –
Méthodes d'essai pour mélange hydrocarboné à chaud –
Partie 24: Résistance à la fatigue;
Version anglaise EN 12697-24:2018,
Traduction anglaise de DIN EN 12697-24:2018-11

Document comprises 66 pages

Translation by DIN-Sprachendienst.

In case of doubt, the German-language original shall be considered authoritative.

A comma is used as the decimal marker.

National foreword

This document (EN 12697-24:2018) has been prepared by Technical Committee CEN/TC 227 “Road materials” (Secretariat: DIN, Germany).

The responsible German body involved in its preparation was *DIN-Normenausschuss Bauwesen* (DIN Standards Committee Building and Civil Engineering), Working Committee NA 005-10-10 AA “Bituminous mixtures (national mirror committee for CEN/TC 227/WG 1), Joint working group with FGSV”.

The DIN document corresponding to the international document referred to in this document is as follows:

ISO 5725-2 DIN ISO 5725-2

Amendments

This standard differs from DIN EN 12697-24:2012-08 as follows:

- a) the series title no longer specifies that the procedures refer exclusively to hot mix asphalt;
- b) several text sections have been revised in order to more clearly describe the procedures;
- c) the term “load applications” has been changed to “load cycles”;
- d) Figure A.1 has been corrected: position number 3 points to the groove in the metal base;
- e) Figure E.3 has been completed: line 1 to the extensiometer has been added in the front view;
- f) a new annex on cyclic indirect tensile test on cylindrical shaped specimens (CIT-CY) has been added.

Previous editions

DIN EN 12697-24: 2004-09, 2007-10, 2012-08

National Annex NA (informative)

Bibliography

DIN ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

English Version

Bituminous mixtures - Test methods - Part 24: Resistance to fatigue

Mélanges bitumineux - Méthodes d'essai pour mélange hydrocarboné à chaud - Partie 24: Résistance à la fatigue

Asphalt - Prüfverfahren - Teil 24: Beständigkeit gegen Ermüdung

This European Standard was approved by CEN on 26 February 2018.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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Contents

Page

European foreword.....	4
1 Scope	5
2 Normative references	5
3 Terms, definitions, symbols and abbreviations.....	5
3.1 General.....	6
3.2 Two-point bending test on trapezoidal shaped specimens (2PB-TR)	6
3.3 Two-point bending test on prismatic shaped specimens (2PB-PR)	7
3.4 Three-point bending test on prismatic shaped specimens (3PB-PR)	9
3.5 Four-point bending test on prismatic shaped specimens (4PB-PR).....	10
3.6 Symbols for indirect tensile test on cylindrical shaped specimens (IT-CY)	15
3.7 Symbols for Cyclic Indirect tensile Test on cylindrical shaped specimen (CIT-CY)	15
4 Sample preparation.....	16
4.1 Storage of the specimens.....	16
4.2 Drying of the specimens	16
4.3 Dimensions and bulk density of the specimens.....	17
5 Failure	17
6 Selection test conditions.....	17
7 Summary of the procedures	17
7.1 Two-point bending test on trapezoidal shaped specimens (2PB-TR)	17
7.2 Two-point bending test on prismatic shaped specimens (2PB-PR)	17
7.3 Three-point bending test on prismatic shaped specimens (3PB-PR)	17
7.4 Four-point bending test on prismatic shaped specimens (4PB-PR).....	18
7.5 Indirect tensile test on cylindrical shaped specimens (IT-CY)	18
7.6 Cyclic Indirect tensile test on cylindrical shaped specimens (CIT-CY)	18
8 Checking of the testing equipment	18
9 Test report.....	19
Annex A (normative) Two-point bending test on trapezoidal shaped specimens (2PB-TR).....	20
A.1 Principle	20
A.2 Equipment	21
A.3 Specimen preparation	21
A.4 Procedure.....	24
A.5 Calculation and expression of results.....	25
A.6 Test report.....	26
A.7 Precision.....	26
Annex B (normative) Two-point bending test on prismatic shaped specimens (2PB-PR).....	28
B.1 Principle	28
B.2 Equipment	28
B.3 Specimen preparation	29
B.4 Procedure.....	29

B.5	Calculation and expression of results	30
B.6	Test report	32
B.7	Precision	32
Annex C (normative) Three-point bending test on prismatic shaped specimens (3PB-PR)		33
C.1	Principle.....	33
C.2	Equipment.....	33
C.3	Specimen preparation	34
C.4	Procedure	34
C.5	Calculation and expression of results	35
C.6	Test report	38
C.7	Precision	39
Annex D (normative) Four-point bending test on prismatic shaped specimens (4PB-PR)		40
D.1	Principle.....	40
D.2	Equipment.....	42
D.3	Specimen preparation	43
D.4	Procedure	44
D.5	Calculation and expression of results	46
D.6	Test report	46
D.7	Precision	47
Annex E (normative) Indirect tensile test on cylindrical shaped specimens (IT-CY)		48
E.1	Principle.....	48
E.2	Equipment.....	48
E.3	Specimen preparation	51
E.4	Procedure	52
E.5	Calculation and reporting of results	53
E.6	Test report	56
E.7	Precision	56
Annex F (normative) Cyclic indirect tensile test on cylindrical shaped specimens (CIT-CY)		57
F.1	Principle.....	57
F.2	Equipment.....	57
F.3	Specimen preparation	59
F.4	Procedure	60
F.5	Calculation and reporting of results	62
F.6	Test report	63
F.7	Precision	63
Bibliography		64

European foreword

This document (EN 12697-24:2018) has been prepared by Technical Committee CEN/TC 227 “Road materials”, the secretariat of which is held by DIN.

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 December 2018, and conflicting national standards shall be withdrawn at the latest by December 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12697-24:2012.

Compared with EN 12697-24:2012, the following changes have been made:

- the series title no longer makes the method exclusively for hot mix asphalt [Title];
- editing of several text sections in order to clarify the procedures [Ge];
- “load applications” amended to “load cycles” [Ge];
- Figure A.1 corrected: Key 3 pointing at the groove [A.1.2];
- completion of Figure E.3: Line 1 added to extensiometer in front view figure [E.2.5.3];
- introduction of new annex for cyclic indirect tensile test on cylindrical specimens (CIT-CY) [Annex F].

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the methods for characterizing the fatigue of bituminous mixtures using alternative tests, including bending tests and direct and indirect tensile tests. The tests are performed on compacted bituminous material under a sinusoidal loading or other controlled loading, using different types of specimens and supports.

The procedure is used:

- a) to rank bituminous mixtures on the basis of resistance to fatigue;
- b) as a guide to relative performance in the pavement;
- c) to obtain data for estimating the structural behaviour of the road; and
- d) to judge test data according to specifications for bituminous mixtures.

Because this European Standard does not impose a particular type of testing device, the precise choice of the test conditions depends on the possibilities and the working range of the device used. For the choice of specific test conditions, the requirements of the product standards for bituminous mixtures need to be respected. The applicability of this document is described in the product standards for bituminous mixtures.

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 12697-6, *Bituminous mixtures — Test methods for hot mix asphalt — Part 6: Determination of bulk density of bituminous specimens*

EN 12697-7, *Bituminous mixtures — Test methods for hot mix asphalt — Part 7: Determination of bulk density of bituminous specimens by gamma rays*

EN 12697-8, *Bituminous mixtures — Test methods for hot mix asphalt — Part 8: Determination of void characteristics of bituminous specimens*

EN 12697-26, *Bituminous mixtures — Test methods — Part 26: Stiffness*

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

EN 12697-29, *Bituminous mixtures — Test method for hot mix asphalt — Part 29: Determination of the dimensions of a bituminous specimen*

EN 12697-31, *Bituminous mixtures — Test methods for hot mix asphalt — Part 31: Specimen preparation by gyratory compactor*

EN 12697-33, *Bituminous mixtures — Test methods — Part 33: Specimen prepared by roller compactor*

3 Terms, definitions, symbols and abbreviations

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