DIN EN 12697-26:2020-03 (E)

Bituminous mixtures - Test methods - Part 26: Stiffness

Contents

Page

European foreword 5

1 Scope 6

2 Normative references 6

3 Terms, definitions and symbols 6
3.1 Terms and definitions 6
3.2 Symbols 8

4 Principle 9

5 Sample preparation 9
5.1 Age of the specimens 9
5.2 Drying of the specimens 9
5.3 Dimensions and bulk density of the specimens 9
5.4 Number of test specimens 10

6 Checking of the testing equipment 10

7 Test methods 10
7.1 General 10
7.2 Codification of tests 10
7.2.1 Sinusoidal bending tests 10
7.2.2 Indirect tensile test (pulse or cyclic) 11
7.2.3 Cyclic or monotonous uniaxial tests 11
7.2.4 Loading conditions 11
7.2.5 Load amplitudes 11
7.2.6 Loading frequencies 11
7.3 Controlled strain rate loading 12
7.3.1 Test method 12
7.3.2 Loading conditions 12
7.3.3 Strain amplitudes for direct tensile tests 12

8 Temperatures 13

9 Expression of results 13

10 Test report 15
10.1 Introduction 15
10.2 General 15
10.3 Information on specimens 15
10.4 Information on test method 15
10.5 Information on the test and results 16
10.6 Optional information 16

11 Precision 16

Annex A (normative) Two point bending test on trapezoidal specimens (2PB-TR) or on prismatic specimens (2PB-PR) 17

A.1 Principle 17

A.2 Equipment ... 17
A.3 Specimen preparation ... 19

DIN EN 12697-26:2020-03 EN 12697-26:2018 (E) A.4 Procedure ... 20

Annex B (normative) Three point bending test on prismatic specimens (3PB-PR) and four point bending test on prismatic specimens (4PB-PR) ... 21

B.1 Principle ... 21
B.2 Equipment ... 22
B.3 Specimen preparation ... 23
B.3.1 Dimensions ... 23
B.3.2 Sample manufacture ... 23
B.4 Procedure ... 24

Annex C (normative) Test applying indirect tension to cylindrical specimens (IT-CY) ... 25

C.1 Principle ... 25
C.2 Equipment ... 25
C.2.1 General devices ... 25
C.2.2 Test equipment ... 25
C.3 Specimen preparation ... 30
C.4 Mode of operation ... 31
C.4.1 Mounting the specimen ... 31
C.4.2 Stiffness measurement ... 31

Annex D (normative) Direct tension-compression test on cylindrical specimens (DTC-CY) ... 33

D.1 Principle ... 33
D.2 Equipment ... 33
D.3 Specimen preparation ... 33
D.4 Mode of operation ... 35
D.4.1 Stabilizing the specimen ... 35
D.4.2 Procedure ... 35

Annex E (normative) Test applying direct tension to cylindrical specimens (DT-CY) or to prismatic specimens (DT-PR) ... 36

E.1 Principle ... 36
E.2 Equipment ... 36
E.3 Specimen preparation ... 36
E.3.1 Cylindrical specimen ... 36
E.3.2 Prismatic specimen ... 37
E.4 Mode of operation ... 37
E.4.1 Stabilization of the specimen ... 37
E.4.2 Procedure ... 38
E.5 Derivation of the master-curve - Isotherms ... 39

Annex F (normative) Test applying cyclic indirect tension to cylindrical specimens (CIT-CY) ... 40

DIN EN 12697-26:2020-03 EN 12697-26:2018 (E) F.1 Principle ... 40

F.2 Equipment ... 40
F.2.1 Test machine ... 40
F.2.2 Loading ... 40
F.2.3 Displacement ... 40
F.2.4 Thermostatic chamber ... 42
F.2.5 Recording and measuring system ... 42
F.2.6 Loading strips ... 42
F.3 Specimen preparation ... 42
F.3.1 Test specimen ... 42
F.3.2 Specimen dimensions ... 43

F.4 Mode of operation 43
F.4.1 Test temperature 43
F.4.2 Mounting the specimen 43
F.4.3 Procedure 43
F.4.4 Checking of specimen deterioration 44

Annex G (informative) Derivation of the master curve 45

G.1 Principle 45
G.2 Theoretical background 46
G.3 Experimental data 47
G.4 Test report 48