DIN EN 12697-25:2016-12 (E)

Bituminous mixtures - Test methods - Part 25: Cyclic compression test

Contents

Page

European foreword 4

1 Scope 8

2 Normative references 8

3 Terms and definitions 9

4 Principle 10

5 Equipment 10
5.1 Control and loading system 10
5.2 Displacement transducers 10
5.3 Data registration equipment 10
5.4 Thermostatic chamber 10
5.5 Measuring instruments and accessories needed 11

6 Test specimen preparation 11
6.1 Number of test specimen 11
6.2 Test specimen compaction 11
6.3 Preparation of mastic asphalt test specimen 11
6.3.1 Accessories for test specimen preparation 11
6.3.2 Procedure for moulded test specimen 12
6.3.3 Procedure for cored test specimen 12
6.4 Preparation of test specimen surfaces 12
6.5 Determination of bulk density 12
6.6 Drying of the test specimen 12
6.7 Dimensions 12

7 Test method A -- Uniaxial cyclic compression test with confinement 13
7.1 Principle 13
7.2 Test method A1 - block pulse loading 13
7.2.1 Upper loading plate 13
7.2.2 Loading pulse 13
7.3 Test method A2 - Haversine pulse loading 15
7.3.1 Upper loading plate 15
7.3.2 Loading pulse 16
7.4 Test specimen 17
7.5 Conditioning 17
7.5.1 Storing conditions 17
7.5.2 Cleaning and drying of test specimens 18
7.5.3 Reduction of friction to loading platens 18
7.5.4 Temperature conditioning 18
7.6 Test procedure 18
7.6.1 Test temperature 18
7.6.2 Positioning of test specimen in test device 18
7.6.3 Testing of test specimen 18
7.6.4 Measurement of permanent deformation 19
7.6.5 End of loading 19
7.7 Calculation and expression of results 19
7.7.1 Permanent deformation 19
7.7.2 Creep rate and creep modulus 20

7.8 Test report 21
7.8.1 General 21
7.8.2 Information on the test specimens 21
7.8.3 Information on test conditions 21
7.8.4 Test results 21
7.9 Precision 22

8 Test method B -- Triaxial cyclic compression test 22
8.1 Principle 22
8.2 Apparatus and test system 24
8.2.1 General 24
8.2.2 Loading platens 27
8.2.3 Control system 27
8.2.4 Load cell 27
8.2.5 Height measurements 27
8.2.6 Temperature conditioning 27
8.3 Test specimen preparation 28
8.3.1 Dimensions 28
8.3.2 Handling 28
8.4 Conditioning 28
8.4.1 Storing conditions 28
8.4.2 Cleaning and drying 28
8.4.3 Reduction of friction to loading platens 29
8.4.4 Temperature conditioning 29
8.5 Test procedure 29
8.5.1 Number of tests 29
8.5.2 Test temperature 29
8.5.3 Positioning of test specimen in test device 29
8.5.4 Testing of test specimen 29
8.5.5 Loading conditions 30
8.5.6 Measurements of permanent deformation 30
8.6 Calculation and expression of results 31
8.6.1 Cumulative strain 31
8.6.2 Creep curve 31
8.7 Test report 32
8.7.1 General 32
8.7.2 Information on the test specimens 33
8.7.3 Information on the test conditions 33
8.7.4 Test results 33
8.8 Precision 33

Annex A (informative) Procedure for correction of test results obtained from test specimen of varied age 35