

DIN EN 12697-1:2020-05 (E)

Bituminous mixtures - Test methods - Part 1: Soluble binder content

Contents		Page
European foreword		5
Introduction		7
1	Scope	8
2	Normative references	8
3	Terms and definitions	8
4	Preparation of laboratory samples	10
5	Determination of binder content	10
5.1	General principles of test	10
5.2	Binder extraction	10
5.2.1	Solvent	10
5.2.2	Apparatus	11
5.2.3	Procedure	11
5.3	Separation of mineral matter	11
5.3.1	Apparatus	11
5.3.2	Procedure	11
5.4	Binder quantity	12
5.4.1	Apparatus	12
5.4.2	Procedure	12
5.5	Calculation and expression of results	12
5.5.1	General	12
5.5.2	Binder content determined by difference	12
5.5.3	Binder content by total recovery	12
5.5.4	Binder content by recovery from portion (volume calculation)	13
5.5.5	Binder content by recovery from portion (mass calculation)	13
6	Drying to constant mass	14
6.1	General	14
6.2	Apparatus	14
6.3	Procedure	14
7	Reporting of results	14
7.1	Results	14
7.2	Test report	15
8	Precision data	15
8.1	General	15
8.2	Precision -- Experiment 1	15
8.3	Precision -- Experiment 2	16
8.4	Precision -- Experiment 3	17
8.5	Precision -- Experiment 4	17
8.6	Precision -- Experiment 5	17
Annex A (informative) Guidance on the determination of binder content		18
A.1	Evaluation of the results	18
A.2	Effect of water content	19

A.3	Choice of test equipment and the sequence of operations	19
A.4	Determination of total binder content	19
Annex B (normative) Use of equipment for the determination of binder content		21
B.1	Binder extraction	21
B.1.1	Hot extractor (paper filter) method	21
B.1.2	Hot extractor (wire mesh filter) method	26
B.1.3	Soxhlet extractor method	27
B.1.4	Bottle rotation machine method	29
B.1.5	Centrifuge extractor method	32
B.1.6	Cold mix dissolution of bitumen by agitation	34
B.1.7	Automatic extractor method	35
B.2	Separation of mineral matter	36
B.2.1	Continuous flow centrifuge	36
B.2.2	Pressure filter	38
B.2.3	Bucket type centrifuge -- Type 1	39
B.2.4	Bucket type centrifuge -- Type 2	41
B.3	Soluble binder content	41
B.3.1	Method by recovery from a portion using a volume calculation	41
B.3.2	Method by recovery from a portion using a mass calculation	44
Annex C (normative) Determination of residual mineral matter in the binder extract by incineration		45
C.1	General	45
C.2	Method 1	45
C.2.1	Apparatus	45
C.2.2	Reagent	45
C.2.3	Procedure	45
C.3	Method 2	46
C.3.1	Apparatus	46
C.3.2	Procedure	46
Annex D (informative) Guidance on determination of soluble binder content of mixtures with polymer-modified binders		48
D.1	General	48
D.2	Preparatory treatment of laboratory samples of bituminous mixtures	48
D.3	Determination of binder content	48
D.3.1	General principles of test	48
D.3.2	Binder extraction	48
D.3.3	Separation of mineral matter	50
D.3.4	Binder quantity	51
D.3.5	Calculation and expression of results	51
D.4	Drying to constant mass	51
D.5	Reporting of results	51
D.6	Precision data	51
Bibliography		52