

English Version

Bitumen and bituminous binders - Framework for specification of oxidised bitumens

Bitumes et liants bitumineux - Cadre de spécifications des bitumes oxydés

Bitumen und bitumenhaltige Bindemittel - Spezifikationsrahmen für oxidiertes Bitumen

This European Standard was approved by CEN on 10 February 2009.

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Foreword

This document (EN 13304:2009) has been prepared by Technical Committee CEN/TC 336 “Bituminous binders”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by September 2009, and conflicting national standards shall be withdrawn at the latest by September 2009.

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This document supersedes EN 13304:2003.

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1 Scope

This European Standard provides a framework for the specification of oxidised bitumens used mainly in roofing, waterproofing, adhesives and thermal and phonic insulations.

Within Europe several types of oxidised bitumens are used and, dependent on climatic conditions, type of building construction and traditional practices, different grades may be used for the same purpose. The framework given in this European standard provides a basis for quality agreements to be established between supplier and client.

The oxidised bitumen products are graded by a combination of the values of ring and ball softening point, and penetration at 25 °C, expressed as multiples of 5.

2 Normative references

The following referenced documents are indispensable for the application 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 1426, *Bitumen and bituminous binders – Determination of needle penetration*

EN 1427, *Bitumen and bituminous binders – Determination of the softening point – Ring and Ball method*

EN 12592, *Bitumen and bituminous binders – Determination of solubility*

EN 12593, *Bitumen and bituminous binders – Determination of the Fraass breaking point*

EN 13301, *Bitumen and bituminous binders – Determination of staining tendency of bitumen*

EN 13302, *Bitumen and bituminous binders – Determination of viscosity of bitumen using a rotating spindle apparatus*

EN 13303, *Bitumen and bituminous binders – Determination of the loss in mass after heating of industrial bitumen*

EN 15326, *Bitumen and bituminous binders – Measurement of density and specific gravity – Capillary-stoppered pycnometer method*

EN ISO 2592, *Determination of flash and fire points - Cleveland open cup method (ISO 2592:2000)*

3 Properties and test methods

The specification of oxidised bitumens shall be made according to the rules given in Table 1:

Table 1 — Properties and test methods

Property	Test methods	Unit	Limits and tolerance
Ring and ball softening point ^a	EN 1427	°C	± 5 of mid-point value ^e
Penetration at 25 °C	EN 1426	0,1 mm	± 5 of mid-point value ^e
Solubility in toluene ^b	EN 12592	%	≥ 99,0
Loss in mass after heating	EN 13303	%	≤ 0,5
Flash point	EN ISO 2592	°C	> 250
Fraass breaking point	EN 12593	°C	NR ^c
Staining properties	EN 13301	mm	NR ^c
Dynamic viscosity ^d	EN 13302	Pa·s	NR ^c
Density	EN 15326	kg/m ³	NR ^c
<p>^a Ring and ball softening point testing for oxidised bitumens are carried out in glycerol, as the values typically are above 80 °C.</p> <p>^b If other solvents are used, it shall be stated in the test report.</p> <p>^c NR: No requirements. Values can be agreed between the client and the supplier</p> <p>^d The type of instrument used to determine viscosity should be agreed between supplier and client.</p> <p>^e Mid-point value: value which defines the ring and ball softening point class or the penetration class.</p>			

4 Typical grades

Typical grades for oxidised bitumens are:

85/25; 85/40; 95/25; 95/35; 100/40; 105/35; 110/30; 115/15.

EXAMPLE 85/25 means that the ring and ball softening point of the product is between 80 °C and 90 °C and penetration between 20 x 0,1 mm and 30 x 0,1 mm.

NOTE This list does not imply that all grades are available in all countries, neither is it intended to be comprehensive or limiting. Other grades may be supplied in accordance with the local practices and by agreement between client and supplier.