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I.S. EN 14023:2010

# Bitumen and bituminous binders - Specification framework for polymer modified bitumens

## I.S. EN 14023:2010

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English Version

## Bitumen and bituminous binders - Specification framework for polymer modified bitumens

Bitumes et liants bitumineux - Cadre de spécifications des  
bitumes modifiés par des polymères

Bitumen und bitumenhaltige Bindemittel - Rahmenwerk für  
die Spezifikation von polymermodifizierten Bitumen

This European Standard was approved by CEN on 6 March 2010.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

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 Management Centre has the same status as the official versions.

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## Foreword

This document (EN 14023:2010) 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of an identical text or by endorsement, at the latest by October 2010, and conflicting national standards shall be withdrawn at the latest by October 2010.

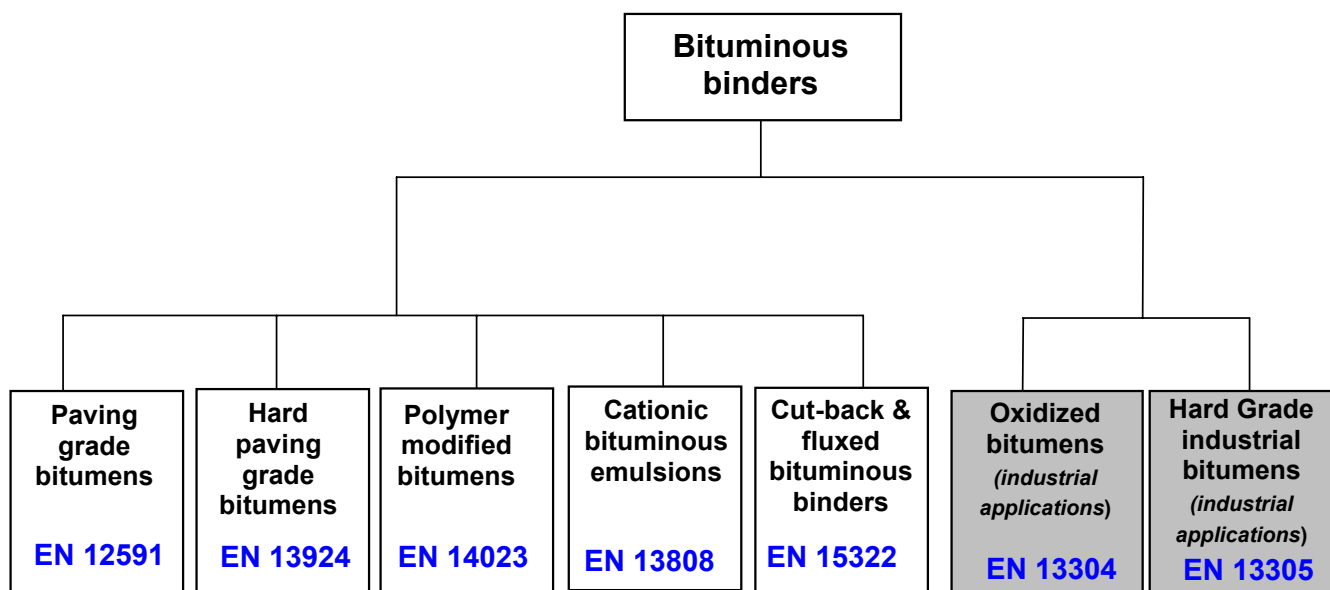
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This document supersedes EN 14023:2005.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This European Standard is part of a family of European Standards for bitumen as follows:



NOTE Industrial applications are not covered by mandate M/124.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

## **Introduction**

This European Standard is closely related to EN 12591, *Bitumen and bituminous binders – Specifications for paving grade bitumens* [1]. This introduction gives information on the basis for selection of the grades defined in this European Standard, the status of certain characteristics and test methods, and proposed development of this European Standard.

The general principle adopted in the development of EN 12591 [1] was to provide a range of grades suitable for the manufacture of the materials for road construction and maintenance used, and the climatic and traffic conditions encountered, in all the Member States. This European Standard extends the range of grades specified in EN 12591 [1], following the wider use of modified binders for road construction and maintenance having improved performances.

As with EN 12591 [1], it is compulsory for the full specification to be published in all EU and EFTA countries. However, it is permitted for each country to define the most suitable grades and classes.

Annex B lists informative characteristics which producers of polymer modified bitumens are invited to supply to the client on a voluntary basis. It is hoped that the data so gathered will be of assistance in developing performance-related specifications in the future.

## 1 Scope

This European Standard provides a framework for specifying the characteristics and relevant test methods for polymer modified bitumens which are suitable for use in the construction and maintenance of roads, airfields and other paved areas.

This framework covers the following characteristics:

- "consistency at intermediate service temperature";
- "consistency at elevated service temperature";
- "cohesion";
- "durability" of consistency;
- "brittleness at low service temperature";
- "strain recovery".

The cohesion property has been included as a means of discriminating between polymer modified bitumens and other bituminous binders. The other essential requirements, "adhesion" and "setting ability" are indicated by tests carried out on the finished asphalt mixtures.

The introduction of classes of convenience in Table 1, Table 2 and Table 3 enables the selection of the most suitable specification for the bitumen taking account of local conditions of climate and use. The nomenclature of polymer modified bitumens comprises the penetration range and the minimum softening point (see example in Annex A).

## 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 58, *Bitumen and bituminous binders — Sampling bituminous binders*

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

EN 12594, *Bitumen and bituminous binders — Preparation of test samples*

EN 12595, *Bitumen and bituminous binders — Determination of kinematic viscosity*

EN 12596, *Bitumen and bituminous binders — Determination of dynamic viscosity by vacuum capillary*

EN 12597:2000, *Bitumen and bituminous binders — Terminology*

EN 12607-1, *Bitumen and bituminous binders — Determination of the resistance to hardening under the influence of heat and air — Part 1: RTFOT method*

EN 13302, *Bitumen and bituminous binders — Determination of dynamic viscosity of bituminous binder using a rotating spindle apparatus*

EN 13398, *Bitumen and bituminous binders — Determination of the elastic recovery of modified bitumen*

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