

Derivatives from coal pyrolysis — Coal tar and pitch based binders and related products: refractory binders — Characteristics and test methods

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British Standard

ICS 75.140

National foreword

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English version

Derivatives from coal pyrolysis - Coal tar and pitch based binders and related products : refractory binders - Characteristics and test methods

Produits dérivés de la pyrolyse du charbon - Liants à base de goudron et de brais issus de la houille et produits connexes: Liants réfractaires - Caractéristiques et méthodes d'essai

Derivate der Kohlenpyrolyse - Bindemittel aus Steinkohlenteer und Steinkohlenteerpech und verwandte Produkte: Feuerfestbindemittel - Anforderungen und Prüfverfahren

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Foreword

This document (EN 14261:2003) has been prepared by Technical Committee CEN /TC 317, "Derivatives from coal pyrolysis", the secretariat of which is held by IBN.

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of an identical text or by endorsement, at the latest by March 2004, and conflicting national standards shall be withdrawn at the latest by March 2004.

In this European Standard the annexes A and B are informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies the methods of test required to determine the characteristics for viscous "refractory binders" used as industrial binders.

Depending on the required application and the desired properties of the end product, different grades on refractory binders are available.

Note that carbon binder pitch as described under prEN 14263 can be used for refractory products as well.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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

EN 13357, *Bitumen and bituminous binders - Determination of the efflux time of petroleum cut-back and fluxed bitumens*

EN 13847:2001, *Coal tar and pitch based binders and related products - Terminology and classification.*

EN ISO 3838, *Crude petroleum and liquid or solid petroleum products - Determination of density or relative density - Capillary-stoppered pycnometer and graduated bicapillary pycnometer methods (ISO 3838:1983).*

ISO 5939, *Carbonaceous materials for the production of aluminium – Pitch for electrodes - Determination of water content - Azeotropic distillation (Dean and Stark) method*

ISO 5940, *Carbonaceous materials for the production of aluminium - Pitch for electrodes - Determination of softening point by the ring-and-ball method*

ISO 6257, *Carbonaceous materials used in the production of aluminium - Pitch for electrodes -Sampling*

ISO 6998, *Carbonaceous materials for the production of aluminium - Pitch for electrodes - Determination of coking value*

BS 76:1974, *Specifications for tars for road purposes*

NF-T 66-029, *Liants hydrocarbonés- Goudrons purs - Détermination de la teneur en naphtalène*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 13847:2001 apply.

4 Classification

For the purposes of this European Standard, the classification according to EN 13847:2001 applies.

5 Characteristics

The following characteristics shall be determined:

- a) Water content;
- b) Density;
- c) Efflux time (BRTA, STV);
- d) Distillation;
- e) Softening point on distillation residue;
- f) Coking value;
- g) Naphthalene determination.

6 Specifications

Specifications requested by the customers shall be applied.

The typical values given in annex A can be used as requirements.

7 Sampling

ISO 6257 specifies methods for sampling and preparing samples for testing of refractory binders.

These methods are applicable to all grades of road tars in liquid or solid form, the latter having softening points higher than 30 °C (determined according to the method EN 1427) in bulk, or in a numbers of containers making up one batch at sites of manufacture, storage of delivery.

8 Test methods

For the determination of the characteristics according to clause 5, the methods listed in Table 1 have to be used.

Table 1 — Test methods

Characteristic	Test methods
Water content	ISO 5939
Density	EN ISO 3838
Efflux time	EN 13357
Distillation	BS 76:1994, appendix D (use of a flask of 500 ml and 200 g of sample)
Softening point	ISO 5940
Coking value	ISO 6998
Naphthalene fraction content	NF T 66-029

Annex A (informative)

Typical values

The typical values in Table A.1 can be used as requirements of the refractory binders.

Table A.1 — Typical values

Water content	< 0,5 %
Density	> 1,1 g/cm ³
Efflux time 10 mm at 40 °C	depends on recipe
Distillation	depends on recipe
Softening point on distillation residue	60 °C to 120 °C
Coking value	> 10 %
Naphthalene content	< 5 %

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