



SLOVENSKI STANDARD SIST-TP CEN/TR 18114:2025

01-januar-2025

Bitumen in bitumenska veziva - Trajnostnost - Pregled ravnanja z okoljskimi informacijami

Bitumens and bituminous binders - Sustainability - Review on how to address environmental information

Bitumen und bitumenhaltige Bindemittel -Nachhaltigkeit - Überprüfung des Umgangs mit Umweltinformationen

Bitumes et liants bitumineux Développement durable Revue de la manière de prendre en compte les informations sur l'environnement

Ta slovenski standard je istoveten z: CEN/TR 18114:2024

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ICS:

13.020.20	Okoljska ekonomija. Trajnostnost	Environmental economics. Sustainability
75.140	Voski, bitumni in drugi naftni proizvodi	Waxes, bituminous materials and other petroleum products
91.100.50	Veziva. Tesnilni materiali	Binders. Sealing materials

SIST-TP CEN/TR 18114:2025

en,fr,de

TECHNICAL REPORT

CEN/TR 18114

RAPPORT TECHNIQUE

TECHNISCHER REPORT

October 2024

ICS 13.020.20; 75.140; 91.100.50

English Version

Bitumens and bituminous binders - Sustainability - Review on how to address environmental information

Bitumes et liants bitumineux - Développement durable
- Revue de la manière de prendre en compte les
informations sur l'environnement

Bitumen und bitumenhaltige Bindemittel -
Nachhaltigkeit - Überprüfung des Umgangs mit
Umweltinformationen

This Technical Report was approved by CEN on 9 September 2024. It has been drawn up by the Technical Committee CEN/TC 336.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (CEN/TR 18114:2024) has been prepared by Technical Committee CEN/TC 336 “Bitumens and bituminous binders”, the secretariat of which is held by AFNOR.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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Introduction

The Construction Products Regulation (CPR), which entered in force in 2011, specifies the need to address the sustainable use of natural resources in harmonised product standards (Basic Works Requirement 7 or BWR 7). The current Mandate M/124 and accepted replies do not address the CPR, therefore it is still not clear how in practice to address BWR 7 in product standards.

Once part of a Standardization Request (SReq), environmental sustainability assessment of bituminous binders needs to be addressed in the revision of the product standards for harmonisation. This raises the question of the need for drafting a CEN/TC 336 specific document giving guidelines on how to address sustainability in the product standards and how, in practical, to realize the corresponding assessments for bitumens and bituminous binders.

Work is ongoing in several CEN/TCs, either on horizontal level or per respective product groups. The information presented in this document was collected by the members of the task group environmental sustainability of the CEN/TC 336 at the time of drafting of this document, December 2023, and should therefore not be considered as exhaustive.

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1 Scope

This document provides an overview of:

- current requirements in the European Union and in individual European states to address sustainability in the field of construction works where bitumens and bituminous binders are used;
- the requirements of the Construction Products Regulation (CPR) on environmental sustainability and analyses the implications for bitumens and bituminous binders;
- existing horizontal standard EN 15804:2012+A2:2019 related to core rules for the product category of construction products and assesses if it can be used without any additional documents for bitumen and bituminous binders;
- status of draft standards developed for specific complementary product category rules by CEN/TC 154, CEN/TC 227, CEN/TC 254 and any other relevant TCs, and assesses if these drafts could require any additional documents specific for bitumens and bituminous binders;
- other relevant documents.

This document is intended to provide support to CEN/TC 336 for assessing the need for any further standardization documents covering specific product category rules for bitumens and bituminous binders or for other standardization documents in the field of environmental sustainability of bituminous binders.

This document covers bitumens and bituminous binders as described in EN 12597, including cut-back and fluxed bituminous binder, and bitumen emulsion, as used in construction works.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 12597, *Bitumen and bituminous binders — Terminology*

EN 15804:2012+A2:2019¹, *Sustainability of construction works — Environmental product declarations — Core rules for the product category of construction products*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12597, EN 15804:2012+A2:2019¹, and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

¹ As impacted by EN 15804:2012+A2:2019/AC:2021.

CEN/TR 18114:2024 (E)**3.1
construction products regulation
CPR**

regulation (EU) N° 305/2011 of the European parliament and of the council of 9 March 2011, laying down harmonised conditions for the marketing of construction products and repealing Council Directive N° 89/106/EEC

Note 1 to entry: Additional terms and definitions applicable to this document can be found in the CPR.

**3.2
product category rules
PCR**

set of specific rules, requirements and guidelines for developing environmental declarations for one or more product categories

**3.3
complementary product category rules
c-PCR**

product group specific or horizontal PCR, which provide additional compliant and non-contradictory requirements to EN 15804

**3.4
life cycle assessment
LCA**

compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle

**3.5
life cycle inventory analysis
LCI**

phase of life cycle assessment involving the compilation and quantification of inputs and outputs for a product throughout its life cycle

**3.6
reference service life
RSL**

service life of a construction product which is known to be expected under a set of reference in-use conditions and which can form the basis for estimating the service life under other in-use conditions

4 Abbreviations

EPD Environmental Product Declaration

PEF Product Environmental Footprint

5 Status of environmental requirements in the European Union and individual European states

Some countries in Europe have already implemented environmental requirements for construction and more specifically for asphalt materials, including certification system. The Scandinavian countries have been pioneers in developing EPD systems in accordance with EN 15804 since 2017. France has developed a system and data base for construction with FDES ("Fiche de Déclaration Environnementale et Sanitaire" — environmental health and safety data sheet) based on EN 15804 since 2014. The

Netherlands also set up a system and database used for civil works since 2017 with first product category rules published in 2019. Other countries have initiated initiatives over the last few years to set up rules and environmental requirements for construction project either at the design stage or for construction works.

Annexes A and B provide an overview of current systems and initiatives at the date of this document.

6 CEN activities and standards

6.1 EN 15804

EN 15804:2012+A2:2019¹ is a European Standard providing the framework to define product category rules (PCR) in order to establish type III Environmental Declarations in accordance with EN ISO 14025:2010 [1] for goods and services in the construction sector. Regulations established by each member state need to be in accordance with that standard.

If developed, Environmental Product Declarations (EPD) have to be established based on relevant PCR for construction works with respect to life cycles stages. In accordance with EN 15804:2012+A2:2019¹, all construction products and materials shall declare modules A1-A3 — product stage, C1-C4 — end of life stage and D – beyond the system boundaries, with some specific exemptions. Other modules A4-A5 — construction process stage and B1-B7 — use stage may be optional depending on the type of EPD.

The points potentially relevant for bitumens and bituminous binders are:

- the material will stay embedded in final product, either asphalt mix or waterproofing, and is not separated at end of the life. Consequently, the exemption to cradle to gate (A1-A3), as stated in EN 15804:2012+A2:2019¹, subclause 5.2 may be applied unless the material contains biogenic carbon. For any product containing biogenic carbon the declaration of modules C1-C4, end of life and module D beyond the life cycle cannot be omitted;
- when EPD is limited to A1-A3 modules, there is no need to define a functional unit, however, a declared unit, typically tons, needs to be defined;

EN 15804:2012+A2:2019¹ states that specific data or average data should be used. An EPD describing an average product shall be calculated using representative average data of the products. An EPD describing a specific product shall be calculated using specific data. EN 15804:2012+A2:2019¹, Table 1, suggests generic or specific data for raw materials. Generic data may be used for processes the producer cannot influence e.g. commodities, raw material extraction, electricity production. The data used must be as recent as possible and must be representative of a reference year, within 10 years for generic data and 5 years for producer specific data.

There are several tables contained in EN 15804:2012+A2:2019¹ that list environmental impact indicators as shown in Table 1.

Table 1 — List of tables in EN 15804:2012+A2:2019 listing environmental impact indicators

Table	Type of indicator	Number of indicators
3	Core environmental indicators	13
4	Additional environmental indicators	7
6	Resource use	10
7	Waste information	3
8	Output flows	4
9	Biogenic carbon content	2
	Total indicators	40

For the construction, use and end of the life stages, other indicators are defined.

The following two categories of additional information not derived from the life cycle assessment (LCA) shall be addressed:

- technical information describing the technical and functional performance over the life cycle stages of the final construction including underlying scenarios;
- additional information on emissions to indoor air, soil and water during the use stage describing the release of dangerous substances not covered by LCA.

The validity of EPD is in accordance with EN ISO 14025:2010 [1], unless there are reasonable changes of $\pm 10\%$, which may require an update of the EPD. A 5-year period is included in EN 15804:2012+A2:2019¹, 7.1 as general information to declare.

6.2 CEN/TC 154 – Aggregates

CEN/TC 154 (aggregates)/WG 13 is drafting c-PCR with two draft Technical Reports at the preliminary stage (PWI adopted on 2021-02-15): PWI 00154207 [2] and PWI 00154209 [3]. At the time of publication of this document, these drafts have not yet been made available and WG 13 is still collecting comments.

The Technical Reports provide core product category rules for type III environmental declaration of natural, manufactured and recycled aggregates for building and civil engineering according to EN 17555-1 [9], EN 13383-1 [8] and EN 13450 [7]. The TRs define the parameters to be reported, what EPD types (and life cycle stages) to be covered, what rules to be followed in order to generate life cycle inventories (LCI) and conduct life cycle impact assessment (LCIA) and the data quality to be used in the development of EPDs.

In addition to the common parts of EN 15804:2012+A2:2019¹, the Technical Reports:

- define the system boundaries;
- define the modelling and assessment of material-specific characteristics;
- define allocation procedures for multi-output processes along the production chain;
- include the rules for calculating the LCI and the LCIA underlying the EPD;
- provide guidance for the determination of the reference service life (RSL);
- give guidance on the establishment of default scenarios.