



**SLOVENSKI STANDARD**  
**oSIST prEN 17392-1:2020**  
**01-maj-2020**

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**Trajnostnost gradbenih objektov - Okoljske deklaracije za proizvode - Skupna pravila za materiale za ceste - 1. del: Bitumenske zmesi**

Sustainability of construction works - Environmental product declarations - Core rules for road materials - Part 1: Bituminous mixtures

Nachhaltigkeit von Bauwerken - Umweltproduktdeklarationen - Festlegungen für Straßenbaustoffe - Teil 1: Asphaltmischgut

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EUROPEAN STANDARD  
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**prEN 17392-1**

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English Version

## Sustainability of construction works - Environmental product declarations - Core rules for road materials – Part 1: Bituminous mixtures

Nachhaltigkeit von Bauwerken -  
Umweltproduktdeklarationen - Festlegungen für  
Straßenbaustoffe - Teil 1: Asphaltmischgut

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 227.

If this draft becomes a European Standard, 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.

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## European foreword

This document (prEN 17392-1:2020) has been prepared by Technical Committee CEN/TC 227 “Road materials”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

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## 1 Scope

This document provides core product category rules for type III environmental declaration of bituminous materials for building and civil engineering according to EN 13108-1, EN 13108-2, EN 13108-3, EN 13108-4, EN 13108-5, EN 13108-6, EN 13108-7, EN 13108-9, and EN 13108-31. The approach taken for these PCR may be considered applicable and adaptable for other bitumen based products.

This document defines 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, this document for bituminous materials:

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

Principles used:

- PCR covering bituminous materials;
- from cradle to beyond the building life cycle based on EN 15804;
- polluter pays: processes of waste processing shall be assigned to the product system that generates the waste until the end-of-waste state is reached;
- EPD will be based on declared units (e.g. tonnes of material) and not functional units (e.g. km of road);
- abiotic depletion potential of aggregate should be declared when relevant;
- all use of inert material in the quarry: reclamation, sound and dust protection shall be included in stages A1 to A3 of the EPD;
- data quality will be described (e.g. Average yearly value, average 10 years value, or maximum value ever encountered).

**NOTE** The Use stage, Informative Module B, depends on the use scenario and this depends on the type of road it is used for, the width of the road, the width of the lane, the total pavement structure and substrate for which pavement layer it is used, the climate conditions, the maximum and minimum pavement temperatures, the traffic intensity and the number of weights of the axle loadings, etc. The use scenario details are determined by the buyer / user of the bituminous mixture. Therefore, only examples on typical maintenance scenarios are given.

This guideline provides PCRs that can be applied for a particular asphalt mixture, from a specific asphalt plant with a specific production temperature. Hence, the design of the asphalt mixture is necessary to produce the specific EPD.

**prEN 17392-1:2020 (E)****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 15804:2012+A2:2019, *Sustainability of construction works — Environmental product declarations — Core rules for the product category of construction products*

EN 15978:2011, *Sustainability of construction works - Assessment of environmental performance of buildings - Calculation method*

ISO 21930, *Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services*

EN 13108-1, *Bituminous mixtures - Material specifications – Part 1: Asphalt Concrete*

EN 13108-2, *Bituminous mixtures - Material specifications – Part 2: Asphalt Concrete for Very Thin Layers (BBTM)*

EN 13108-3, *Bituminous mixtures - Material specifications – Part 3: Soft Asphalt*

EN 13108-4, *Bituminous mixtures - Material specifications – Part 4: Hot Rolled Asphalt*

EN 13108-5, *Bituminous mixtures - Material specifications – Part 5: Stone Mastic Asphalt*

EN 13108-6, *Bituminous mixtures - Material specifications – Part 6: Mastic Asphalt*

EN 13108-7, *Bituminous mixtures - Material specifications – Part 7: Porous Asphalt*

EN 13108-8, *Bituminous mixtures - Material specifications – Part 8: Reclaimed Asphalt*

EN 13108-9, *Bituminous mixtures - Material specifications – Part 9: Asphalt for Ultra-Thin Layer (AUTL)*

EN 13108-31, *Bituminous mixtures — Material specifications — Part 31: Asphalt Concrete with Bituminous Emulsion (ACBE)*

**3 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN 15804 and the following apply.

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

— IEC Electropedia: available at <http://www.electropedia.org/>

— ISO Online browsing platform: available at <https://www.iso.org/obp>

**3.1****aggregate**

granular material used in construction

Note to entry 1: Aggregate maybe natural, manufactured or recycled (see EN 13043).



**3.2****asphalt mixture**

homogenous mixture typically of coarse and fine aggregates, filler aggregate, bituminous binder, and additives which is used in the construction of a pavement

Note to entry 1: They are plant produced materials in accordance with EN 13108 series of European standards.

Note to entry 2: The mixture may contain reclaimed asphalt or chemical additives or organic additives or pigment or fibre or combination of these to replace partially or completely some components.

**3.3****bituminous binder**

liquid residue obtained from the distillation of suitable crude oils or derived from naturally occurring deposits

Note to entry 1: Shall be a paving grade bitumen, a polymer modified bitumen, a hard paving grade bitumen, a multigrade bitumen or a blend of one of them with natural asphalt.

Note to entry 2: Relevant European standards are EN 12591 for paving grade bitumen, EN 14023 for polymer modified bitumen, EN 13924-1 for hard paving grade bitumen, and EN 13924-2 for multigrade bitumen.

**3.4****environmental product declaration****EPD**

environmental declaration providing quantified environmental data using predetermined parameters and, where relevant, additional environmental information

[SOURCE: ISO 21930]

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**3.5****estimated service life****ESL**

service life that a building or an assembled system (part of works) would be expected to have in a set of specific in-use conditions, determined from reference service life data after taking into account any differences from the reference in use conditions

[SOURCE: EN 15978:2011]

**3.6****mixture additives**

used to enhance the laying characteristics, performance or appearance of the mixture

**3.7****reclaimed asphalt****RA**

processed site-won asphalt, suitable and ready to be used as constituent material for asphalt, after being tested, assessed and classified

[SOURCE: EN 13108-8]

**prEN 17392-1:2020 (E)****3.8****site-won asphalt**

material to be recycled, in the form of milled asphalt road layers or as slabs ripped up from asphalt pavements, or being asphalt from reject, surplus or failing production

**4 Abbreviations**

For the purposes of this document, the following abbreviations apply.

AP	Acidification Potential
ADP	Abiotic Depletion Potential
DU	Declared Unit
EP	Eutrophication Potential
EPD	Environmental Product Declaration
ESL	Estimated Service Life
FU	Functional Unit
GWP	Global Warming Potential
LCA	Life Cycle Assessment
LCI	Life Cycle Inventory analysis
LCIA	Life Cycle Impact Assessment
ODP	Ozone Depletion Potential
PCR	Product Category Rules
POCP	Photochemical Ozone Creation Potential
RA	Reclaimed Asphalt
RSL	Reference Service Life
SVHC	Substance of Very High Concern
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals

**5 General aspects****5.1 Objective of the PCR**

In addition to the text in EN 15804:

The objective of this document is to provide rules for bituminous materials for use on roads, airfields and other trafficked areas.

## 5.2 Types of EPD with respect to life cycle stages covered

BUILDING ASSESSMENT INFORMATION																	
BUILDING LIFE CYCLE INFORMATION										SUPPLEMENTARY INFORMATION BEYOND BUILDING LIFE CYCLE							
A1 - A3 PRODUCT STAGE			A4 - A5 CONSTRUCTION PROCESS STAGE		B1 - B7 USE STAGE					C1 - C4 END OF LIFE STAGE				D BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY			
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Raw material supply	Transport	Manufacturing	Transport	Construction - Installation process	Use	Maintenance	Repair	Replacement*	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse, recovery, recycling, potential	
scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	
Cradle to gate + modules C and D			Mand.	Mand.	Mand.							Mand. <sup>b</sup>	Mand. <sup>b</sup>	Mand. <sup>b</sup>	Mand. <sup>b</sup>	Mandatory <sup>b</sup>	
Cradle to gate + modules C and D with options			Mand.	Mand.	Mand.	Opt.	Opt.	Optional	Opt.	Optional		Mand.	Mand.	Mand.	Mand.	Mandatory	
Cradle to gate			Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mandatory

Figure 1 — Types of EPD with respect to life cycle stages covered and life cycle stages and modules for the building assessment

## 5.3 Comparability of EPD of construction products

In addition to the text in EN 15804:

In principle the comparison of products on the basis of their EPD is defined by the contribution they make to the environmental performance of the construction works. Consequently comparison of the environmental performance of construction products using the EPD information shall be based on the product’s use in and its impacts on the construction, and shall consider the complete life cycle (all information modules).

NOTE 1 EPDs in a construction works context are not tools to compare construction products and construction services.

NOTE 2 For the sustainability assessment of construction works comparisons of the environmental aspects and impacts need to be undertaken in conjunction with the social and economic aspects and impacts related to the construction works.

NOTE 3 For the interpretation of a comparison, benchmarks or reference values are needed. This document does not set benchmarks or reference values.

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Comparisons are possible at the sub-element level, e.g. for assembled systems, components, products for one or more life cycle stages. In such cases the principle that the basis for comparison of the assessment is the entire construction works, shall be maintained by ensuring that:

- the same functional requirements as defined by legislation or in the client’s brief are met;
- the environmental performance and technical performance of any assembled systems, components, or products excluded are the same;
- the amounts of any material excluded are the same;
- excluded processes or life cycle stages are the same;
- the influence of the product systems on the operational aspects and impacts of the construction works are taken into account.

The information provided for such comparison shall be transparent to allow the purchaser or user to understand the limitations of comparability. A justification shall be given for any excluded aspects.

NOTE 4 The difference between two products may be insignificant in the construction works context.

Where an EPD does not cover all life cycle stages relevant for the comparison, e.g. B1 to B7, or if the assumptions underlying the scenario of a declared information module are not applicable in the construction works context, then investigations will be required to determine the environmental aspects and impacts of specific scenarios for the calculation of modules beyond the cradle to gate modules. These calculations shall be based on scenarios and conditions that are appropriate for the construction works as the object of assessment.

**5.4 Additional environmental information**

EN 15804:2012+A2:2019 shall apply. <https://standards.iteh.ai/catalog/standards/sist/661b8c60-db96-47fb-9345-da685d0f69e8/osist-pren-17392-1-2020>

**5.5 Ownership, responsibility and liability for the EPD**

EN 15804:2012+A2:2019 shall apply.

**5.6 Communication formats**

EN 15804:2012+A2:2019 shall apply.

**6 Product category rules for LCA****6.1 Product category**

In addition to the text in EN 15804:

The product category referred to in this document includes all bituminous mixtures conforming to EN 13108-1, EN 13108-2, EN 13108-3, EN 13108-4, EN 13108-5, EN 13108-6, EN 13108-7, EN 13108-9 and EN 13108-31.

**6.2 Life cycle stages and their information modules to be included****6.2.1 General**

The environmental information of an EPD covering all life cycle stages (“cradle to grave”) is subdivided into the information module groups A1-A3, A4-A5, B1-B5, B6-B7, C1-C4 and module D.

Only the declaration of the modules, A1-A3, C1-C4 and D is required for compliance with this document, defined as cradle to gate in EN 15804, A2.

The declaration of modules A4-A5, B1-B7 is optional. B1 to B7 would not normally be included for bituminous mixtures.

### 6.2.2 A1-A3 product stage, information modules

In addition to the text of EN 15804:

This document accounts for processes that are within the bounds of phases A1: Raw Material Supply, A2: Transport and A3: Manufacturing of the product stage (see Figure 2). For phase A1 “Raw Material Supply” this includes aggregates, bituminous binder, additives, reclaimed asphalt, recycled secondary materials and water for dust control.

All inputs and outputs to the unit processes identified shall be included in the calculation.

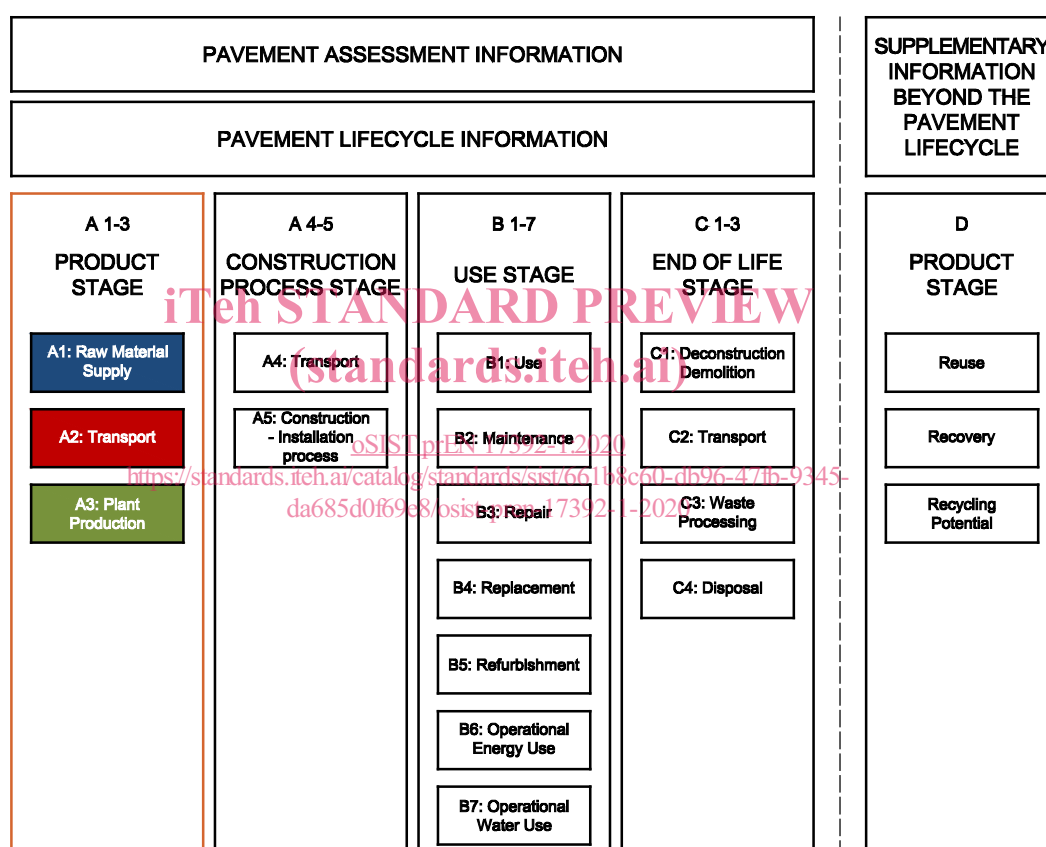


Figure 2 —Diagram of destinations of modular information used for life cycle assessments for pavements

### 6.2.3 A4-A5 construction process stage, information modules

In addition to the text of EN 15804:

The inclusion of A4 and A5 (transport and Installation) is allowed and recommended.

### 6.2.4 B1-B5 use stage

The use stage, related to the asphalt pavement layer includes:

- B1, use of the installed asphalt layer;