



BSI Standards Publication

Plastic piping systems buried outside the building structure — Environmental product declarations — Product category rules complementary to EN 15804

National foreword

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The UK participation in its preparation was entrusted to Technical Committee PRI/88, Plastics piping systems.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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© The British Standards Institution 2025
Published by BSI Standards Limited 2025

ISBN 978 0 539 29922 9

ICS 23.040.20; 23.040.45; 91.010.99

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 October 2025.

Amendments/corrigenda issued since publication

Date	Text affected
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English Version

Plastic piping systems buried outside the building
structure - Environmental product declarations - Product
category rules complementary to EN 15804

Systèmes de canalisations en plastique enterrés à
l'extérieur de la structure du bâtiment - Déclarations
environnementales des produits - Règles régissant les
catégories de produits complémentaires de l'EN 15804

Erdverlegte Kunststoff-Rohrleitungssysteme
außerhalb von Gebäuden -
Umweltproduktdeklarationen -
Produktkategorieregeln entsprechend EN 15804

This European Standard was approved by CEN on 13 July 2025.

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 16903:2025) has been prepared by Technical Committee CEN/TC 155 “Plastics piping systems and ducting systems”, the secretariat of which is held by NEN.

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of an identical text or by endorsement, at the latest by April 2026, and conflicting national standards shall be withdrawn at the latest by April 2026.

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Introduction

The European standard EN 15804+A2 specifies core product category rules for all construction products and services. It specifies a structure to ensure that all Environmental Product Declarations (EPD) of construction products, construction services and construction processes are derived, verified and presented in a harmonized way.

This document, based on EN 15804+A2, specifies the Product Category Rules for Environmental Product Declarations (EPD) plastic piping systems buried outside the building structure and their main structural components.

An EPD communicates verifiable, accurate, non-misleading environmental information for products and their applications, thereby supporting scientifically based, fair choices and stimulating the potential for market-driven continuous environmental improvement.

The standardization process has taken place in accordance with EN ISO 14025. All common issues are covered horizontally for all product types in order to minimize vertical (branch specific) deviations.

EPD information is expressed in information modules, as specified in EN 15804+A2, which allow easy organization and expression of data packages throughout the life cycle of the plastic piping systems buried outside the building structure (construction work). The approach requires that the underlying data should be consistent, reproducible and comparable.

The EPD is expressed in a form that allows aggregation (addition) to provide complete information for construction works. This document does not deal with aggregation at the construction work level nor does this document describes the rules for applying EPD in a construction work assessment.

The document deals with a set of quantifiable predetermined parameters defined in EN 15804+A2. Future revisions may incorporate additional predetermined parameters in line with the changes of EN 15804+A2.

A reading guide of this document is provided in Annex E.

1 Scope

This document specifies product category rules (PCR) for Environmental Product Declarations (EPDs), as described in EN ISO 14025 and EN 15942.

This document is applicable to:

- functional unit as plastic piping systems buried outside building structure;
- declared unit as one or more main structural components, as specified by the list of product standards provided in Annex C.

Main structural components are:

- pipes;
- fittings (e.g. flange couplers, bends and reducers, valves and electrofusion fittings);
- manholes, inspection chambers and infiltration boxes.

This document gives guidelines for both pressure and non-pressure applications.

The intended function of the system considered is to convey fluids according to EN 476 (for sewers, drain and surface water), EN 805 (water supply), or EN 12007 (gas supply).

This document provides in Annex D a non-exhaustive list of application fields. In addition, the following applications and materials are not in scope of this document: GRP pipes and fittings, and district heating pipes.

This document specifies the rules for the product category of construction products as defined in and is intended to be used in conjunction with EN 15804+A2.

In addition to EN 15804+A2, this document specifies:

- the functional unit (consisting of pipes, fittings, manholes and inspection chambers and ancillary components) and declared unit (consisting of pipes and/or fittings and/or manholes and /or inspection chambers);
- the system boundaries and additional mandatory modules to be declared;
- the processes to be included in the installation phase;
- scenarios for module A4, A5;
- use conditions for the use phase (B modules);
- reference service life (RSL);
- end of life scenarios.

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.

CEN/TS 1046, *Thermoplastics piping and ducting systems — Outside the building structures for gravity and pressurised systems — Trench installation*

EN 476, *General requirements for components used in drains and sewers*

EN 805 (series), *Water supply — Requirements for systems and components outside buildings*

EN 12007 (series), *Gas infrastructure — Pipelines for maximum operating pressure up to and including 16 bar — Part 2: Specific functional requirements for polyethylene (MOP up to and including 10 bar)*

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

EN 15941, *Sustainability of construction works — Data quality for environmental assessment of products and construction work — Selection and use of data*

ISO 22057, *Sustainability in buildings and civil engineering works — Data templates for the use of environmental product declarations (EPDs) for construction products in building information modelling (BIM)*

ISO/TR 10501:1993, *Thermoplastics pipes for the transport of liquids under pressure — Calculation of head losses*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15804:2012+A2:2019 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/>

3.1

nominal size

DN

numerical designation of the size of a component, which is a convenient round number approximately equal to the manufacturing dimension

Note 1 to entry: Nominal size is expressed in millimetres (mm).

Note 2 to entry: This designation is not used for threaded components.

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

3.2**design coefficient****C**

coefficient with a value greater than 1, which takes into consideration service conditions as well as properties of the components of a piping system other than those represented in σ_{LPL} (the lower confidence limit)

3.3**melt mass-flow rate****MFR**

value relating to the viscosity of the molten material at a specified temperature and load

Note 1 to entry: It is expressed in grams per 10 minutes (g/10 min).

3.4**nominal pressure****PN**

numerical designation used for reference purposes recited to the mechanical characteristics of the component of a piping system

Note 1 to entry: For plastic piping systems conveying water, it corresponds to the allowable operating pressure (PFA) in bar, which can be sustained with water at 20 °C with a design basis of 50 years, and based on the minimum design coefficient, (C)

3.5**nominal ring stiffness class****SN**

numerical designation of the ring stiffness class of the pipe or fitting which is a convenient round number, relative to the determined stiffness in kilonewtons per square meter (kN/m^2), indicating the minimum required ring stiffness of the pipe or stiffness of the fitting

3.6**building structure**

building including the area within one meter of that building

3.7**biobased plastic**

plastic that contains materials, wholly or partly of biogenic origin

Note 1 to entry: Although not provided as a definition this exact wording is used in the introduction of the standards ISO 16620-1:2015, Plastics — Biobased content — Part 1: General principles (ISO 16620-1:2015, IDT) and EN ISO 22526-1:2021, Plastics — Carbon and environmental footprint of biobased plastics — Part 1: General principles (ISO 22526-1:2020).

Note 2 to entry: This also includes material coming from waste and residues of biological origin from agriculture, forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste (e.g. UCO, tall oil, food waste, etc.).

4 Abbreviations

For the purposes of this document, the abbreviations given in EN 15804:2012+A2:2019 apply.

5 General aspects

5.1 Objective of the PCR for plastic piping systems buried outside the building structure

Shall be according to EN 15804+A2.

5.2 Types of EPD with respect to life cycle stages covered

Shall be according to EN 15804+A2. In addition, the types of the EPDs that can be developed according to this document are listed below (Figure 1):

- cradle to gate with options, modules C1-C4 and module D (A1-A3, C, D and additional modules. The additional module that shall be declared is A4, A5 is optional). This type of EPD shall be based on a declared unit and applies for the main structural components listed in the Scope;
- cradle to gate with options, modules C1-C4 and module D (A1-A3, C, D and additional modules. The additional module that shall be declared is A4, A5 and/or B1–B7 are optional.). This type of EPD shall be based on a functional unit or a declared unit. If B-modules and use scenario are not declared the EPD shall be based on a declared unit; see 6.3.5.4.2 for the definition of B-modules in case of pressure applications;
- cradle to grave and module D (A, B, C and D). This declaration shall be based on a functional or declared unit.

CONSTRUCTION WORK ASSESSMENT INFORMATION											
CONSTRUCTION WORKS LIFE CYCLE INFORMATION											
A1-A3				A4-A5				B1-B7			
PRODUCT STAGE				CONSTRUCTION PROCESS STAGE				USE STAGE			
A1				A4				B1			
A2				A5				B2			
A3				scenario				B3			
Raw material supply				Transport				Maintenance			
Manufacturing				Construction - Installation process				Repair			
Transport				scenario				Replacement ¹			
scenario				scenario				Refurbishment			
Operational energy use				scenario				Operational energy use			
Operational water use				scenario				Operational water use			
scenario				scenario				scenario			
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5.3 Comparability of EPD for construction products

Shall be according to EN 15804+A2.

5.4 Additional information

Shall be according to EN 15804+A2.

5.5 Ownership, responsibility and liability for the EPD

Shall be according to EN 15804+A2.

5.6 Communication formats

Shall be according to EN 15804+A2.

6 Product category rules for LCA

6.1 Product category

Shall be according to EN 15804+A2, and in addition the product category referred to in this document includes all plastic piping systems buried outside building structure and their main structural components conveying fluids according to EN 476 (for sewers, drain and surface water), EN 805 (water supply), or EN 12007 (gas supply).

A more detailed definition of plastic piping system buried outside building structure and their main structural components is provided in the Scope and Annex D, Table D.1.

6.2 Life cycle stages and their information modules to be included

6.2.1 General

Shall be according to EN 15804+A2.

6.2.2 A1-A3, Product stage, information modules

Shall be according to EN 15804+A2.

6.2.3 A4-A5, Construction process stage, information modules

Shall be according to EN 15804+A2.

6.2.4 B1-B5, Use stage, information modules related to the plastic piping systems buried outside the building structure

Shall be according to EN 15804+A2. In addition see 6.3.5.4.2.

6.2.5 B6-B7, use stage, information modules related to the operation of the plastic piping systems buried outside the building structure

Shall be according to EN 15804+A2. In addition, for pressure applications the energy consumption shall be calculated according to formula for head loss provided in ISO/TR 10501:1993 (Clause 4). The energy consumption shall be calculated taking into consideration the head loss, the lifetime and the pump efficiency. Default values to be used in the calculation are reported in 6.3.9.4.

6.2.6 C1-C4 End-of-life stage, information modules

Shall be according to EN 15804+A2.