PVC 3D: Design – Data – Dialogue

DPP Guidance – EU requirements and common industry practices

1. DPP: Existing legal requirements and CEN standards

Ecodesign for Sustainable Products Regulation - ESPR

Regulation (EU) 2024/1781 … establishing a framework for the setting of Ecodesign requirements for sustainable products

The Ecodesign for Sustainable Products Regulation applies generally to all physical goods placed on the market or put into service and introduces a DPP. The regulation sets the central DPP architecture (registries, generic principles, data access rules), while leaving the detailed data fields and timelines to be defined per product group in those delegated acts.

The CPR (see below) is the sector-specific law for construction products, updating CE-marking rules and embedding a construction-specific DPP aligned with ESPR principles.

Construction Products Regulation – CPR 2024

Regulation (EU) 2024/3110 … laying down harmonised rules for the marketing of construction products

The Construction Products Regulation lays down harmonised rules for the marketing of construction products in the EU. The current Construction Products Regulation, Regulation (EU) 305/2011 (CPR 2011), will be phased out in stages by the CPR 2024 and repealed in full by 2040 at the latest.

CPR 2024 provides a common technical language to assess the performance of construction products. It ensures that reliable information is available to professionals, public authorities, and consumers, so they can compare the performance of products from different manufacturers in different countries.

This is achieved by:

- a combined Declaration of Performance and Conformity (DoPC) in conjunction with the CE marking (see Article 13 of CPR);
- requirements for demonstrating the performance of the construction product and the Assessment and Verification Systems (AVS) (see Annex IX of CPR);
- introduction of a Digital Product Passport System for Construction Products (DPP, see chapter X of CPR).

Construction products may only be placed on the market or put into service if a legally compliant DPP is available. This is intended to facilitate standardized data exchange and provide e.g. consumers with information on performance. The data in the DPP must be accurate, complete and up to date. The company that first makes the product available in the EU is responsible for the DPP.

Despite the use of digital solutions, manufacturers are still required to maintain backups to ensure that the information contained in the DPP can be accessed throughout the product's entire life cycle.

The processing and storage of data are subject to applicable European regulations on data protection and IT security, in particular the General Data Protection Regulation (EU) 2016/679 (GDPR), the Cybersecurity Act (EU) 2019/881, and the EU Cloud Security Certification Framework.

Draft European Commission implementing regulation (EU) …/... implementation arrangements for the digital product passport registry set up under ESPR (published 04/2026)

Although the title of this implementing regulation refers to the DPP under the ESPR, the requirements will also apply to the DPP under the CPR.

This draft sets out binding requirements for companies that go far beyond a simple reporting system to securely store unique identifiers and monitor product compliance. This marks a significant shift. DPP are no longer just about storing sustainability data but are becoming regulated digital infrastructure.

CEN standardization regarding DPP

Regarding the framework and structure of the DPP several CEN standards are developed yet respective are under preparation. The project management is handled by joint technical committee CEN/CLC/JTC 24.

EN 18216:2026 Digital Product Passport — Data exchange protocols

The transport layer for moving passport data between systems

Scope: This document defines a standard for secure and efficient data exchange protocols and data formats to be used for the digital product passport. Data exchange protocols establish the rules and procedures that systems follow when communicating and exchanging information. Data formats define the structure and presentation of that information so it can be understood and processed correctly by the systems involved.
Together, protocols and formats ensure that data can be exchanged in a manner that is secure, interoperable, reliable, and compatible across various platforms and sectors. This will guarantee that data are human and machine-readable, structured, searchable, and transferable through an open, interoperable network without vendor lock-in.

EN 18219:2026Digital product passport — Unique identifiers

How products and operators are uniquely and persistently identified

Scope: This document defines the principles and specifies the requirements and guidelines for unique product identifiers, unique economic operator identifiers, and unique facility identifiers used in digital product passports.

EN 18220:2026 Digital Product Passport — Data carriers

How the identifier is physically carried on the product (QR, Data Matrix, RFID)

Scope: This document specifies requirements for data carriers used in a digital product passport system. This covers: symbology characteristics, format, error correction codes, encoding methods, printing and production quality, and durability.
This document also specifies requirements on graphical or other indicators for easy recognition of DPP data carriers and the indication on the data carrier placement, machine readability, quality checking, links between physical product and digital representation.

EN 18221:2026 Digital product passport — Data storage, archiving, and data persistence

Keeping the passport available and versioned for the product's whole life

Scope: This document specifies requirements for data storage, archiving, and data persistence of digital product passports, all based on a decentralized approach. The archiving functionality securely stores historical passport data, preserving a comprehensive record of past information.
Persistence ensures that data included in the digital product passport remains available even when the economic operator creating the digital product passport is no longer active. This document also specifies requirements for the replication between economic operators and back-up operators as well as rules for data lifetime definition.

EN 18222:2026 Digital Product Passport — Application Programming Interfaces (APIs) for the product passport lifecycle management and searchability

The exact API methods to read, create, update and search passports

Scope: This document aims to standardize the specifications for the API of the digital product passport (DPP) as mandated by the ESPR of the European Commission. The purpose of this API is to facilitate the searchability of DPPs, as well as to provide the necessary means for interactions throughout the lifecycle of a product's DPP.

EN 18223:2026 Digital Product Passport — System interoperability

The shared data model and semantics every passport conforms to

Scope: The scope of this document includes:

- the semantic description of a product, including its properties where relevant and the semantic aspects to represent the product lifecycle;
- a common information model allowing for the implementation of data dictionary systems;

- metadata models and formats to be used in exchange and representation, allowing for the integration of dictionaries;
- rules on how to systematically use such metadata models when developing product group specific data models and dictionaries;
- technical and organizational interoperability.

FprEN 18239:05 2026 Digital Product Passport — Access rights management, information system security, and business confidentiality

Who can read or write what, and how trade secrets are protected

Scope: This document specifies the requirements for Digital Product Passport (DPP) access rights management, including IT security, data protection, and responsibility transfer between economic operators. It defines the framework for managing confidential information access, while acknowledging that public DPP data requires no access restrictions. The document applies to all product groups subject to DPP requirements under Regulation (EU) 2024/1781, with specific access rights to be detailed in respective delegated acts.

FprEN 18246:05 2026: Digital product passport — Data authentication, reliability and integrity

Proving a passport is genuine and has not been tampered with

Scope: This document defines the requirements and frameworks for secure information processing and communication to safeguard integrity, authenticity and reliability in the digital product passport (DPP) data exchange, minimizing product fraud and counterfeiting through data verification and integrity enforcement mechanisms.
This document provides a framework for establishing trust, interoperability, and interoperation via secure electronically signed data construct (ESDC) for multi-actor applications, applicable across various sectors and in multilingual environments. Existing hardware and software systems for unique product identification and storage of this identification are to be considered.

DoPC - Declaration of Performance and Conformity as content of DPP

The Declaration of Performance and Conformity (DoPC) is one central component of its DPP respective the digital product data room.

The manufacturer confirms by this document that the product complies with the established performance and conformity requirements. DoPC replaces the Declaration of Performance DoP required by CPR 2011 and, in addition to essential technical performance, also covers safety, environmental, and climate-related characteristics.

The DoPC is needed in conjunction with the CE marking. The CE marking indicates that a construction product is in conformity with its declared performance and that it has been assessed according to a harmonised technical specification or European assessment document. By affixing the CE marking, the manufacturer is assuming full legal responsibility

for the product's compliance. The DoPC serves as a formal confirmation document supporting the CE marking with all the information about the product, with CE marking only providing a summary of it.

The DoPC is drawn up in accordance with the model set out in CPR Annex V and forms the core compliance document within the Digital Product Passport. The detailed content and practical elements of the DoPC are presented in the accompanying **DPP Starter Kit**.

The essential characteristics of windows and doors to be declared in the DoPC will be defined by:

Standardisation Request (Sreq) – Mandat M/XXX : Commission implementing decision on a standardisation request to the European Committee for Standardisation as regards doors, windows and other related products …; (Draft, published 01/2026)

This mandate precisely defines the scope of the performance specifications permitted under the DoPC for windows and doors, i.e. the characteristics and evidence that manufacturers will be required to provide for their products in future. The necessary testing standards will be set out in the revised product standard EN 14351, developed by CEN.

The CPR includes requirements regarding the assessment and verification of performance by a third party. Details regarding the Assessment und Verification Systems AVS are defined by:

Draft Commission Delegated Regulation (EU) …/… establishing the applicable assessment and verification systems for product families and categories (published 12/2025)

These AVS were designed taking into account the intended use of products, the potential harm caused by product deficiencies, the sensitivity of product performance to variations in production conditions, the likelihood of manufacturing errors, and the ease with which such errors can be detected.

In addition to AVCP-system introduced by CPR 2011, the new AVS establishes a system 3+ for essential characteristics related to environmental sustainability. System 3 applies to essential characteristics concerning emissions of dangerous substances into indoor air, while system 2+ applies to essential characteristics related to the release of dangerous substances into soil and groundwater.

Other documents regarding sustainability properties (selection)

Public Procurement Directives

The CPR supports sustainability goals in public procurement. According to Article 83 of the CPR, when procurement procedures are carried out under the Public Procurement Directives and include requirements related to the environmental performance of construction products, contracting authorities must apply the mandatory minimum environmental performance requirements set out in CPR delegated acts, if such requirements exist.

They may also introduce stricter requirements, as long as these remain compatible with the CPR. However, if applying the CPR minimum requirements would lead to disproportionate costs or practical incompatibilities, authorities may be exempted from using them.

EN ISO 14025:2006 Environmental labels and declarations
— Type III environmental declarations — Principles and procedures

Type III environmental declarations as described in ISO 14025 are primarily intended for use in business-to-business communication, but their use in business-to-consumer communication under certain conditions is not precluded. As characteristics related to environmental sustainability are included in DoP this standard becomes relevant.

ISO 14025 establishes the principles and specifies the procedures for developing Type III environmental declaration programmes and Type III environmental declarations. It specifically establishes the use of the ISO 14040 series of standards in the development of Type III environmental declaration programmes and Type III environmental declarations.
Following both standard supplements EN ISO 14025

EN 15804: 2022 Sustainability of construction works
— Environmental product declarations. — Core rules for the product category of construction products

EN 17213: 2020+A1:2025 Windows and doors
— Environmental Product Declarations — Product category rules complementary to EN 15804 for windows and pedestrian door sets

EN 17210:2021 – Accessibility and usability of the built environment - Functional requirements
It sets out requirements for the accessible design of buildings, outdoor facilities and infrastructure. It indirectly influences the content of the DPP by specifying which accessibility features must be documented and verified, particularly in relation to construction products and building-related components.

2 DPP – product identification

The window manufacturer must establish a link between DPP and a data carrier which should be connected attached to the product or its packaging. Thus, the DPP becomes accessible by electronic means for free of charge to anyone easily.
There is no universal solution for product identification. Technologies such as printed barcodes, printed QR codes, integrated RFID tags and digital watermarks each have distinct advantages depending on the intended product use and lifecycle considerations.
Printed QR codes are a mature, well-understood technology and easily integrated into existing production lines. While QR codes have limited data capacity, they are sufficient to encode a unique URL that links to comprehensive digital records through a web browser. This approach allows for a dynamic DPP that can be updated throughout the product lifecycle without requiring modification of the physical product. Furthermore, the ubiquity of

smartphone cameras capable of reading QR codes ensures easy access to the DPP information for all stakeholders.
While “invisible” UV-fluorescent inks result in pristine-looking surfaces, these inks are quickly to degrade upon (sun)light exposure. This thus leaves visible wear-resistant inks.
Laser engraving on the product is another option to add a visible code.
Embossing allows tagging without having to add other material. But it is a less flexible application technique and is more difficult to read out.
Digital watermarking for physical products is an innovative technology that embeds invisible, machine-readable information directly into the physical design of products, packaging, or labels. The manufacturing process involves high temperatures and pressures. Digital watermarks are seamlessly integrated into the product’s aesthetic design, remaining imperceptible to the human eye while providing a secure and reliable method of identification. These hidden marks can be scanned and decoded using devices such as smartphones or industrial readers, to reveal detailed information about the product.