



Whitepaper

Digital product passport (DPP)

for construction products

09/2024



BAUEN DIGITAL SCHWEIZ
BÂTIR DIGITAL SUISSE
COSTRUZIONE DIGITALE SVIZZERA
CONSTRUIR DIGITAL SVIZRA

Home of





Table of contents

Foreword	4
Summary	5
1 Overview of the Digital Product Passport (DPP)	7
1.1 Regulatory basis of the DPP	8
1.2 Comparison with existing regulations and integration with openBIM	9
1.3 CPR has priority over ESPR – lex specialis	9
1.4 Environmental, social and governance (ESG)	9
1.5 DPP and ESG	10
2 Advantages and challenges of the DPP	10
2.1 Advantages of DPP	10
2.2 The challenge of implementing digital product passports	12
3 How is the digital DPP structured?	13
3.1 Unique product identification	13
3.2 DPP structure	13
3.3 DPP data fields	14
3.4 Mandatory and optional features	16
4 Identification	16
4.1 Product identification	16
4.2 Feature identification	17
4.3 Identification requirements using a product example	17
5 DPP access	18
6 How is a DPP published?	19
6.1 DPP creation	19
6.1.1 Variant 1: manufacturer creates and manages the DPP itself	20
6.1.2 Variant 2: DPP creation by external provider	20
6.2 Secure data transfer in openBIM environments	22
6.3 Review	22
6.4 Public access and transparency	23
6.5 Updating and maintenance	23
6.6 Training and further education in the openBIM context	23
6.7 Data integration before and during use – the asset administration shell (AAS)	24
7 Green Public Procurement (GPP)	25
7.1 GPP – tender and selection criteria	25
7.2 Ecodesign efficiency suitability criterion	25
7.3 Award criteria	25
8 Digital product passport – impact on Switzerland	26
8.1 Export	26



8.2	Import	26
8.3	Swiss companies in the domestic market	26
8.4	Integration of the DPP into Swiss legislation and openBIM	26
9	Introduction of the DPP for various product categories	27
9.1	Delegated acts	29
9.1.1	Delegated acts under the newCPR	29
9.1.2	Delegated acts under the ESPR	29
9.1.3	Delegated act on the DPP	29
9.2	Mandate to CEN/CENELEC	29
9.3	Mutual Recognition Agreement (MRA)	30
9.4	Adoption of harmonised EU construction product standards in Switzerland	30
10	Conclusion	31
11	Call for participation	32
12	Attachments	33
12.1	Relevant standards	33
12.2	Glossary	34
13	Legal Notice	35



Foreword

Dear Readers

We are pleased to present the white paper 'Digital product passport (DPP) for building products' as a further publication from Bauen digital Schweiz / buildingSMART Switzerland.

In an increasingly interconnected world in which sustainability and transparency are becoming more and more important, the construction industry is facing major challenges, and at the same time numerous opportunities are opening for it. Our aim with this series of publications is to provide you with guidance and an overview of the latest developments in the field of construction products at the national and international levels.

In the first white paper, 'Linked construction product data for the circular economy', we examined the legal and regulatory framework conditions – such as the European Green Deal – and their impact on the construction and real estate industry. It became clear how important the harmonisation of data and the use of uniform standards are to fully exploit the potential of digitalisation in the construction industry. In this white paper, the focus is on the provision and interoperability of construction product data, which plays an indispensable role in the successful digitalisation of the construction industry.

The integration of digital technologies and networked building product data is the key to creating a circular economy. This white paper outlines the requirements and solutions needed to reduce the environmental impact of the construction industry while increasing efficiency and sustainability. Because only through consistent digitalisation and networking of building product data can we ensure transparency and traceability along the entire life cycle of a building.

The economy is facing the challenge of providing and processing more and more product data. Customers are demanding comprehensive information about their products, supply chains and business practices. Competition in the construction industry is evolving from a price competition to a quality competition in which environmental and social standards are upheld and the value of investments is assessed along the life cycle.

Together with experts from the construction industry and buildingSMART International, the European Union has developed the concept of a DPP, which has been incorporated into the revised Construction Products Regulation (newCPR). The aim of the DPP is to make data available via shared 'data dictionaries' so that it cannot only be read by humans, but also assigned to the building model in the planning stage and processed by algorithms. A strategic approach is important to introduce the DPP in Switzerland efficiently, economically and functionally.

We would like to thank all the experts who contributed to the creation of this white paper. Their commitment and expertise are invaluable. Together, we can master the challenges of the future and pave the way for a sustainable, innovative and resource-efficient construction industry. Your active participation and interest are the driving force behind successfully implementing the digital transformation and leading the construction industry into a greener future.

Let's take this path together and fully exploit the potential of digitalisation. Let's seize the opportunity to make a positive contribution to environmental protection and increased efficiency in the construction industry through innovative technologies and networked data.

Birgitta Schock

Member of the Federal Commission for Construction Products (FCCP)

Chairwoman Bauen digital Schweiz | buildingSMART Switzerland



Summary

The digital product passport (DPP) is a central component of the EU Ecodesign Regulation and the revised Construction Products Regulation for a sustainable and circular construction industry. The concept is based on a data set that manufacturers and distributors use to centrally provide all product data and other information required throughout the product life cycle. It contains comprehensive information on the performance of the various basic requirements of the respective construction product. Thanks to the digitally networked accessibility of this performance data, the DPP enables better coordination of requirements and performance along the entire life cycle of a product with the following benefits:

- The simpler comparison, e.g. by exchanging construction products in the planning stage, means that the optimum/sustainable product can be found for the respective location, which increases the building quality in all aspects.
- The use of materials can be reduced through more precise static dimensioning.
- Traceability facilitates access to information on the maintenance, repair or subsequent replacement of components.
- Data on environmental sustainability is declared by the provider via the DPP and made comparable in the offers.

By collecting data on material composition, environmental impact, recyclability and substances of concern, for example, the DPP enables better traceability, facilitates regulatory compliance and promotes the circular economy.

The DPP is conceptually based on the Ecodesign for Sustainable Products Regulation (ESPR), which came into force on 18 July 2024, and in terms of content on the revised EU Construction Products Regulation (newCPR). The DPP will be gradually introduced in the EU for various product categories. In particular, the revised Construction Products Regulation contains many new information requirements regarding the environmental impact of construction products. As a result, companies can already define corresponding requirement criteria in the invitation to tender. For companies, the DPP is therefore also closely linked to the fulfilment of criteria relating to environmental, social and governance (ESG) issues.

This white paper provides an up-to-date overview of the status of the introduction of the DPP in the EU and the corresponding impact on Switzerland. It uses the white paper published by Bauen digital Schweiz / buildingSMART Switzerland (BdCH/bSCH), 'Linked construction product data for the circular economy'¹ as a basis.

By scanning or reading a unique product identifier, consumers and other actors along the supply chain can access the information stored in the DPP. The most important information in the DPP initially includes the unique product identifier with the product name and details of the responsible manufacturer or distributor, followed by data on technical and environmental properties and links to non-structured information such as descriptions and documentation in the form of assembly instructions and safety information. It can list the appropriate spare parts and go into further detail on the material composition and the origin of the raw materials. In addition, it contains values of indicators of the environmental impact of construction products that originate from environmental product declarations (EPD), such as the global warming potential (GWP) or the energy already consumed in production (primary energy), as well as possible further information on reusability, recycling or disposal. The DPP therefore contains the key information required for the assessment and management of buildings throughout their entire life cycle. The manufacturer or distributor uses the DPP to declare the properties of their product in accordance with the harmonised European construction product standard (hEN) applicable to this product. Planners can rely on this easily accessible data to ensure and prove compliance with the regulatory requirements.

The data contained in the DPP must be structured, unambiguous and machine-readable and should ideally be based on a data dictionary. This white paper refers to the buildingSMART Data Dictionary (bSDD), in which different industries define a common language for describing their products and their properties. Product Data Templates (PDT) and Product Data Sheets (PDS) can be created on this basis.

¹ [Whitepaper - Linked construction product data for the circular economy](#)



The introduction of the DPP in the EU will take place in several stages. Pilot projects will test the functionality of the DPP in practice. This will be followed by standardisation and, building on this, the development of compliant, interoperable systems. Finally, specific requirements will be defined for various product categories to promote sustainability and transparency. During the gradual introduction, the EU plans to prioritise product categories with a high environmental impact first. In so-called delegated acts, regulations will set out in detail how implementation is to take place, for example for each product family. Delegated acts therefore relate to applicable harmonised standards, technical specifications, test methods, labelling and product information, particularly the DPP. A separate legal act is expected to regulate the DPP for all product families. The European Commission has already commissioned the European Committee for Standardization (CEN) to draw up the standards required for the DPP.

In future, Swiss companies that sell construction products in Switzerland and other European countries will generally have to meet the requirements of the DPP. This requires adjustments to processes, but also offers the opportunity to improve competitiveness through a high ecodesign rating. Switzerland is also working on adapting its legislation to ensure compatibility with the EU system and enable Swiss companies to participate in the digital single market. In the medium term, this will result in the adoption of the DPP rules for the Swiss domestic market.

This white paper is aimed at building contractors, manufacturers and distributors of construction products (distributors), architects, engineers, BIM managers, data controllers and regulatory authorities. It is aimed at professionals who are responsible for the implementation and management of BIM processes and the DPP as part of openBIM projects.

1 Overview of the Digital Product Passport (DPP)

The Digital Product Passport (DPP)² is a data set that enables the provision and addition of further product data or the updating of useful information throughout the entire product life cycle. It represents a digitally networked ID card for raw materials, products and components in which relevant information can be stored. This includes technical information in accordance with the respective construction product standard, the guarantee of technical usability with minimal use of materials as well as environmental product declarations (EPD) or origin information that can be used to optimise sustainability in the planning, use, reuse and disposal of construction products. This information will be accessible electronically, making it easier for consumers, manufacturers and authorities to make more informed decisions regarding sustainability, circular economy and regulatory compliance. This will enable customs authorities to automatically verify the presence and authenticity of products imported with the DPP. The information to be included in the DPP will be determined by the European Commission in close consultation with all relevant stakeholders and will depend on the product in question.

Comprehensive information about a product is made accessible via a machine-readable data carrier³ (e.g. DataMatrix, QR code or NFC tag). The data carrier serves as a reference to the data sources or systems to be used (e.g. website or database). Physical data carriers (e.g. USB stick or DVD) are not used for the DPP.

A DPP contains all useful product and material information over the life cycle, such as

- Legally required information in declarations of performance (DoP)
- Building material parameters relevant to building physics
- Material composition and its origin
- Environmental impact for the life cycle phases of production and disposal (EPD)
- Information on maintenance, repair, reusability and recyclability
- Information on external certifications and labels
- Indication of origin of raw materials

The DPP promotes transparency, sustainability and the circular economy by making data openly accessible in a structured and machine-readable form.

The system around the DPP consists of two main elements:

1. A unique product identifier (UPI), encoded in a data carrier, which is used to link the physical product with the associated information. The data carrier can be physically attached to the product (e.g. as a label or printed directly on it), but it can also be contained in the product packaging or accompanying documents. The exact way in which the data carrier is attached may vary depending on the product and industry.



Figure 1: Product labelling, example Creabeton AG

² [commission.europa.eu - Ecodesign for Sustainable Product Regulation - Digital Product Passport](https://commission.europa.eu/ECodesign-for-Sustainable-Product-Regulation-Digital-Product-Passport).

³ ISO/IEC 19762-1 defines a data carrier as '[...] a medium for storing data as a relay mechanism to a [...] system'. A data carrier can be an optical code, such as a QR code, or a radio tag, e.g. an RFID or NFC tag. A data carrier thus serves as an 'intermediary element' between the identification of a product and its data record.



2. The **digital product passport**, or more precisely the digital IT image of a product with all the associated information, including the access and security architecture.

The manufacturer or distributor uses the DPP to make all the necessary information available to supply chain players, regulatory authorities and consumers. This transparency makes it easier for users along the value chain to access the data they require to evaluate it in the building model using appropriate algorithms. This means that the life cycle assessment data can be used during the planning stage to optimise and evaluate the ecological aspect of sustainability over the life cycle.

Possible risks relating to compliance with environmental, ethical and social standards as part of a company's duty of care (ESG risks – environmental, social and governance) can be identified via the information on origin.



Figure 2: DPP Creabeton AG, source: Bauen digital Schweiz / buildingSMART Switzerland

Furthermore, suitable spare parts can be found more easily. At the end of the product life cycle, the DPP facilitates the recycling and reuse of materials. The DPP therefore helps to promote the circular economy and a sustainable construction industry.

1.1 Regulatory basis of the DPP

The DPP is based on the regulatory principles of the EU Ecodesign for Sustainable Products Regulation (ESPR)^{4,5} and the revised Construction Products Regulation (newCPR).^{6, 7, 8}

- The ESPR extends the previous ecodesign requirements to a much broader range of products and sets stricter criteria for sustainability, resource efficiency and recyclability. These in turn require transparency and traceability, which means that detailed information on material composition, environmental and health impacts as well as repair and recycling options must be provided. The DPP serves as a central, digital system for collecting and providing this data.
- The newCPR relates specifically to construction products and requires them to be safe, sustainable and efficient. It builds on the ESPR and also requires comprehensive product information to be recorded in the DPP to demonstrate compliance in an easily recordable way and promote sustainability in the construction industry. These regulations ensure that construction products are transparent and sustainable throughout their life cycle, protecting both the environment and consumers.

The regulations relating to the ESPR, including the newCPR, address the following four key areas:

Extended area of application

- The new ESPR will fundamentally expand the existing focus, which was primarily on energy consumption, and extend to a much broader range of products to improve their sustainability.

⁴ [commission.europa.eu - Ecodesign for Sustainable Products Regulation](https://commission.europa.eu/ecodesign-for-sustainable-products-regulation).

⁵ [EUR-Lex: Regulation - EU - 2024/1781-EN](https://eur-lex.europa.eu/eli/reg/2024/1781/en).

⁶ [single-market-economy.ec.europa.eu - Construction Products Regulation](https://single-market-economy.ec.europa.eu/construction-products-regulation).

⁷ [data.consilium.europa.eu / ST-5762-2024-REV-1_en](https://data.consilium.europa.eu/ST-5762-2024-REV-1_en).

⁸ The name for the revised Construction Products Regulation has not yet been officially defined. It is abbreviated with the acronym newCPR as well as revCPR. The acronym newCPR is used in this white paper.



Circular economy and environmental performance

- The ESPR will define requirements for the circular economy, energy efficiency and other environmental aspects in the subsequent regulations (so-called 'delegated acts') to make products more sustainable.
- This in turn will gradually lead to a restriction on the disposal of unsold products. Many unsold products in the EU are simply destroyed – a practice that wastes valuable resources. This regulation will initially be introduced for textiles, but in the medium term all product groups will be affected as a legal objective.
- Large and medium-sized companies in all product sectors are obliged to publish information on their website every year about the number and weight of the products they dispose of and the reasons for this.

1.2 Comparison with existing regulations and integration with openBIM

- The CE marking is a mark affixed by the manufacturer itself which confirms that a product complies with the applicable EU safety, health and environmental protection requirements and may therefore be freely traded in the European Union.
- The information in the DPP can be integrated directly into openBIM workflows using technologies such as API interfaces (application programming interface) or standards such as Industry Foundation Classes (IFC)⁹ and the buildingSMART Data Dictionary (bSDD)¹⁰ to ensure that data is interoperable and machine-readable. This enables seamless integration of the DPP into BIM projects and improves collaboration and transparency along the entire value chain.
- A digital nameplate (DNP) and a DPP are both concepts that play a central role in the digital transformation of products and their life cycle. A DPP goes beyond the DNP and contains more detailed and comprehensive information about the entire life cycle of a product. A DNP can be part of a DPP by providing the basic identification data of the product. It serves as a digital entry ticket that can be used to access further information in the DPP. For example, a DNP can contain a DataMatrix code, a QR code or another data carrier that directly displays the more detailed DPP data. This enables users to easily access comprehensive information about the product by simply scanning the digital name tag.

1.3 CPR has priority over ESPR – lex specialis

The CPR is regarded as *lex specialis* – the principle whereby a more specific law takes precedence over a more general law if both are applicable to the same situation. For construction products, the CPR therefore takes precedence over the ESPR, unless the ESPR contains more specific requirements for certain aspects of the sustainability of construction products. If there is any uncertainty about the applicability of a particular product, both legal texts should be checked for their respective jurisdiction.

1.4 Environmental, social and governance (ESG)

The environmental, social and governance (ESG) framework is used to assess the sustainability and social impact of a company. The published report makes ESG indicators measurable and comparable. ESG factors are playing an increasingly important role for investors, companies and other stakeholders, as they provide a comprehensive overview of a company's long-term risks and opportunities. The three main components of ESG are listed below:

⁹ technical.buildingsmart.org/standards/ifc.

¹⁰ buildingsmart.org/users/services/buildingsmart-data-dictionary.



Environmental

- Climate change: measures to reduce greenhouse gas emissions and adapt to climate change
- Resource consumption: efficient use of resources such as water, energy and raw materials
- Waste and environmental management: handling waste, recycling and minimising pollution
- Biodiversity: protection and conservation of biological diversity

Social

- Working conditions: ensuring safe and fair working conditions for all employees
- Human rights: respecting and promoting human rights along the entire supply chain
- Community and society: involvement in and support of the communities in which the company operates
- Customer protection: protection of the rights and interests of customers, including data protection and product safety

Governance (corporate management)

- Business ethics: promoting integrity and ethical behaviour throughout the company
- Composition of the management board: diversity and independence on the management board
- Transparency: disclosure of corporate practices and performance, including financial and non-financial information

1.5 DPP and ESG

DPP and ESG criteria are closely linked, as DPPs promote transparency and traceability along the entire supply chain. This helps companies to achieve their ESG goals by ensuring that their products are manufactured under sustainable and ethical conditions. DPPs provide detailed information at product level about the environmental performance or environmental footprint of a product, enabling companies to better manage and document environmental, social and governance risks.

2 Advantages and challenges of the DPP

The introduction of the DPP offers several advantages. Uniform, internationally recognised standardisation will achieve a high level of acceptance and facilitate implementation within the European Union. It will supplement or even replace conventional product labels and provide consumers with reliable and comparable information on products.

2.1 Advantages of DPP

Increased transparency

- The DPP provides comprehensive information on properties and classes in accordance with applicable construction product standards, which in turn are measured using recognised test methods. This allows the performance characteristics of the products to be better aligned with the requirements.

Efficient traceability

- Based on globally standardised and unique product identifiers, the DPP enables the unambiguous identification and traceability of products throughout their entire life cycle, from manufacture and use to reuse or disposal.
- Products that have been withdrawn from the market or are no longer available can be identified more easily. This also includes data on recalls, product bans or other measures affecting the product. This allows consumers and companies to determine at an early stage whether a particular product is safe.



- | | |
|--|--|
| Repairs and maintenance | <ul style="list-style-type: none">• The DPP facilitates repairs and maintenance by providing detailed product information, instructions and spare parts. It promotes sustainability through recycling information, extends the service life of products and helps in the selection of qualified repair services for efficient maintenance. |
| Promoting the circular economy | <ul style="list-style-type: none">• Detailed information on material composition makes it easier to sort and separate products for reuse or recycling, which in turn supports the circular economy. |
| Compliance with environmental regulations | <ul style="list-style-type: none">• The DPP helps construction companies to comply with environmental regulations by providing all the necessary information. |
| Improving product quality | <ul style="list-style-type: none">• Manufacturers can obtain detailed feedback on the performance and durability of their products through the DPP, which will contribute to the continuous improvement of product quality. |
| Recognising ESG risks | <ul style="list-style-type: none">• The DPP provides detailed information on the origin, production and sustainability of products, improves transparency and promotes responsible decisions. |
| Real-time information for consumers | <ul style="list-style-type: none">• The DPP provides consumers with up-to-date information on products, ingredients and origin. |
| Reduction of construction waste | <ul style="list-style-type: none">• The DPP promotes the efficient use of materials and the reuse of components and building materials, which helps to reduce construction waste. |
| Simplified maintenance and repair | <ul style="list-style-type: none">• The information in the DPP on the composition and structure of construction products facilitates their maintenance and repair, which extends the service life of the products. |
| New business models through digital product data | <ul style="list-style-type: none">• The analysis of product passport data provides valuable insights that enable companies to develop innovative business models and services. Thanks to access to comprehensive product information, companies can also develop and implement innovative and sustainable construction practices. |
| Basis for the Building Logbook (building passport) | <ul style="list-style-type: none">• The DPP forms the basis for the Building Logbook by providing the detailed and structured data required for comprehensive documentation and management of buildings. |



2.2 The challenge of implementing digital product passports

The DPP offers numerous advantages and opportunities regarding economic models of the future. However, there are several challenges that need to be taken into account to ensure successful implementation. For example, careful planning, sufficient resources and the cooperation of all parties involved are essential. To overcome these challenges, companies should invest in security measures, standardisation and training early on and develop a pre-defined plan for the integration and use of the DPP.

- | | |
|--------------------------------------|---|
| Data dictionary | <ul style="list-style-type: none">• A prerequisite for every digital product passport is a data dictionary in which all product properties are provided with a unique identifier (URI) required for machine readability in accordance with the applicable construction product standard (hEN) and translated into all required national languages.• To achieve such clarity, it would be desirable for European industry associations to develop a common consensus.• In future, this process can be carried out by the relevant technical commissions (CEN TC) with each publication of a construction product standard. This process is described in the EN ISO 23386 standard. |
| Structured data | <ul style="list-style-type: none">• Existing product data sheets must be transferred into a structured form, which is then provided with the unique identifiers (URI) from the data dictionary. This process is described in ISO standard 23387:2020 |
| Product information management (PIM) | <ul style="list-style-type: none">• All product variants are mapped by the manufacturer in the PIM. If this is not possible due to order-related production, corresponding product configurators are required to record the specific properties. |
| API interface | <ul style="list-style-type: none">• If a manufacturer wants to provide the data itself, it needs its own database with an API interface via which the data can be shared with third parties. |
| Technical implementation | <ul style="list-style-type: none">• The implementation of the DPP requires technical solutions such as web links, QR codes or unique identification of products in accordance with ISO/IEC 15459. Not all companies are currently prepared for this.• Different systems and standards must be compatible to ensure smooth data exchange.• Existing systems may need to be adapted or newly integrated. |
| Data security | <ul style="list-style-type: none">• The DPP contains confidential information about products. When designing the DPP, a clear distinction must be made between legally required public data and other value-added data such as customer documents. |
| Complexity and scalability | <ul style="list-style-type: none">• Managing and maintaining data can be extremely challenging for complex products and long supply chains.• The company's internal DPP architecture must be scalable to cope with growing data volumes and additional products. |

3 How is the digital DPP structured?

3.1 Unique product identification

Unique product identification via UPI is used to link the physical product with its information. The UPI can be carried out using DataMatrix, QR codes, RFID tags or other data carriers. These data carriers enable the link to the actual DPP.

At least the following components are central to this:

- Exact designation of the product and the model
- Details of the manufacturer, such as name, address and contact information
- Globally unique product identifier/identification, depending on requirements at product level, lot with article number (type) or serial number (instance) (e.g. EAN, UPC, GTIN, DNP)
- Globally unique identification of the economic operator (e.g. GLN)
- Globally unique identification of locations or buildings involved in the value chain of a product (e.g. GLN)
- CE marking, which indicates that a product complies with the requirements of the applicable EU legislation
- Information on other certifications, standards and safety guidelines

This list is not exhaustive, as other legal acts, for example in the chemicals sector, will require additional characteristics.

The following figure shows a possible representation and implementation of such a DPP type plate according to the information available at the time the white paper was created.



Figure 3: Possible representation of a label with the required DPP components. Source: Creabeton AG (type plate) and NexSwiss (DPP behind the QR code)

3.2 DPP structure

A DPP contains comprehensive and structured information about a product over its entire life cycle. The DPP aims to improve transparency and traceability – particularly regarding sustainability and the circular economy. The information is structured in such a way that it is easily accessible and understandable. In Annex III of the ESPR, the European Commission sets out the basic content and technical requirements for the DPP. Building on this, the CPR specifies further content and technical requirements for a DPP specifically for construction products. Chapter 6 explains how a DPP is created, maintained, checked and made publicly accessible.

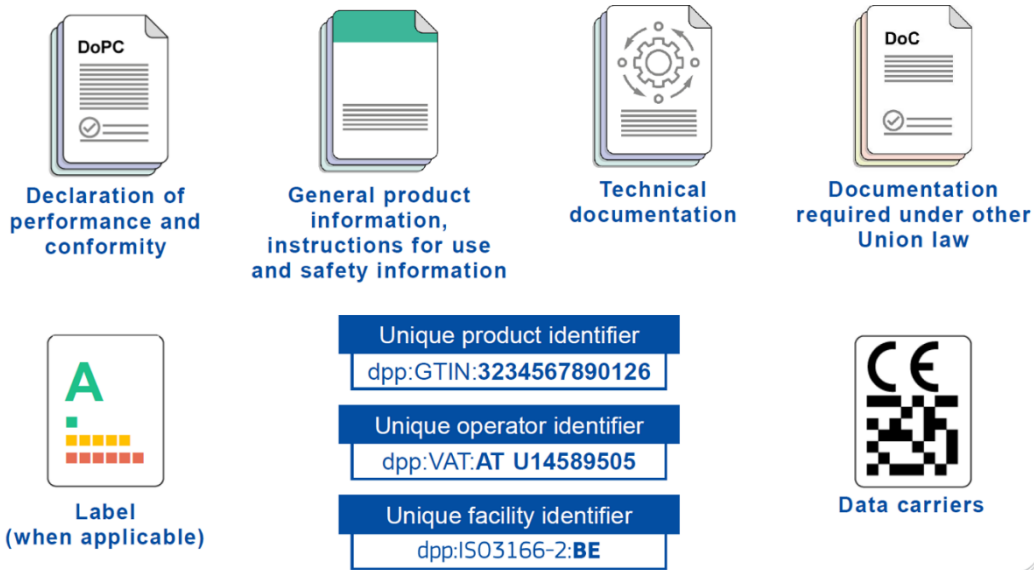


Figure 4: Source: Graphic of the European Commission in a presentation of Construction Products Europe – PPT: 24-143_EC presentation on new CPR_06062024 2

3.3 DPP data fields

Data fields are a central element of a DPP. These are the characteristics and information of a DPP. Each data field contains specific information about the product, such as the product name, the material composition or the CO₂ footprint. These data fields usually have a standardised format to standardise the exchange and processing of information.

Uniform data fields ensure a standardised information basis for construction products. As a result, products can be compared more easily and independently of the manufacturer, which supports a well-founded selection. Machine-interpretable data in the DPP enables efficient, automated processing, accelerates processes and ensures traceability throughout the entire life cycle.

In addition, structured data, preferably based on international classifications, forms the basis for analyses to identify trends, optimise product development and promote sustainability in the construction industry. The methodology for describing, creating and maintaining properties in interlinked data dictionaries is described in EN ISO 23386.



Designation	Possible features
(Product) identification	<ul style="list-style-type: none"> • Product name and model number: unique identifiers of the product • Manufacturer information: name, address and contact information of the manufacturer • Product description: detailed description of the main features and functions
Material and component information	<ul style="list-style-type: none"> • Material composition: detailed information on the materials used and their proportions • Origin of the materials: information on the origin of the raw materials (e.g. region or country)
Sustainability features	<ul style="list-style-type: none"> • CO₂ footprint: information on the total CO₂ emissions generated during the life cycle of the product/system • Energy consumption: information on energy consumption in different phases of use • Deconstructability: important sustainability features in relation to the deconstructability of products • Recycling: information on how well the product can be recycled
Performance features	<ul style="list-style-type: none"> • Information on the technical properties and performance of the product, such as load-bearing capacity, fire behaviour, fire resistance, thermal conductivity, etc.
Life cycle information	<ul style="list-style-type: none"> • Use phase: instructions for optimal use and maintenance of the product to maximise its service life • End-of-life management: information on the disposal or reuse of the product at the end of its service life
Compliance and certification documents	<ul style="list-style-type: none"> • Legal conformity: proof that the product complies with legal requirements and standards • Certifications: information on performance, environmental and quality certifications (e.g. fire protection, ISO certificates, EU Ecolabel)
Safety information	<ul style="list-style-type: none"> • Instructions for use: safety and operating instructions to prevent accidents and damage • Hazard warnings: information on possible hazards associated with the use of the product (e.g. safety data sheet)
Supply chain data	<ul style="list-style-type: none"> • Information on the manufacturer and distributor: names and contact information of the manufacturer and distributor, information on the sub-suppliers (of the supply chain), in particular regarding important spare parts that are essential for the maintenance and service life of the product • Transportation routes: more detailed information on the transportation routes and methods of the materials and products
Maintenance and repair information	<ul style="list-style-type: none"> • Maintenance instructions: step-by-step instructions for maintaining the product • Spare parts information: information on available spare parts and their procurement



3.4 Mandatory and optional features

Mandatory features

Data required by law	This includes all data that must be provided in accordance with EU-wide regulations. This includes, for example, material composition, energy consumption and information on hazardous substances. This data may not be changed retrospectively.
Country or sector-specific information	This data is adapted to the specific requirements of a country or industry. They may include additional environmental requirements, recycling specifications or special labelling regulations that apply in certain markets (e.g. warranty period).

Optional features

Manufacturer-specific information	<p>This information is provided by the manufacturer and may include additional information on product use, repair options, specific environmental initiatives or company guidelines on sustainability (e.g. VeVA code, KBOB criteria, SIA standards for application, eBKP designations). This data may be changed subsequently.</p> <p>These optional elements may not repeat, amend or contradict the legal elements of the newCPR.</p>
-----------------------------------	--

4 Identification

4.1 Product identification

Identifiers play an essential role in the success of a DPP. This is because it uniquely identifies each product on the market and provides the associated information necessary to effectively manage the entire lifecycle and ensure compliance with regulations.

The ESPR stipulates in Article 8 paragraph 3 that a GTIN (Global Trade Identification Number) in accordance with the ISO/IEC 15459 standard or an equivalent identifier for products or parts thereof must be used for product identification. The newCPR also specifies the use of a GTIN or another globally established standard for unique product identification.

In this white paper, reference is made below to the use of the GTIN. This ensures consistency and clear identifiability across different platforms and stakeholders. GTINs are typically used for retail products, outer packaging or entire pallets and are essential as they make each product version clearly identifiable. GTINs can also be supplemented with lot numbers or serial numbers to specify the level of identification and improve traceability.

For 'make to order' or 'engineer to order' products, serialised identifications via non-speaking serial numbers, so-called Global Individual Asset Identifiers (GIAI), are also permitted.



There are four different GTIN formats. The basic format has 14 digits, whereby the last digit is always a check digit. If the basic format is shorter than 14 digits, it is preceded by leading zeros.

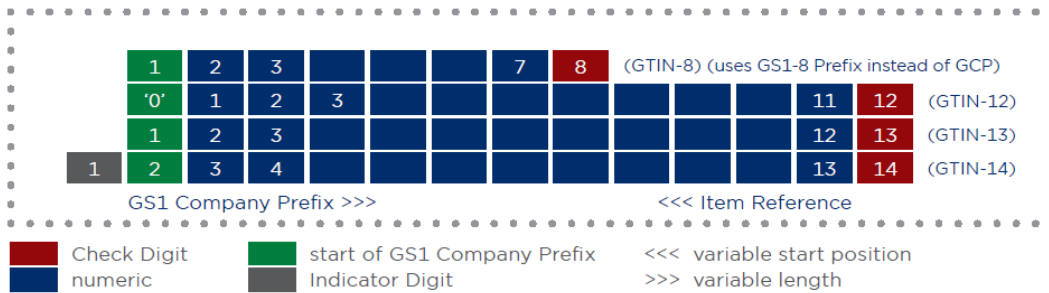


Figure 5: Global Trade Item Number (GTIN), source: GS1

4.2 Feature identification

Machine-readable product information is increasingly managed in the construction industry using standardised identifiers and data models. Although there is currently no explicit specification for the DPP on how data is identified, it is recommended to use universally unique identifiers (UUID) for product information.

The term Globally Unique Identifier (GUID) is used in this white paper. UUID and GUID are identical. Both refer to a 128-bit identifier that is generated according to the RFC 4122 standard.¹¹ GUIDs are structured in such a way that they are unique worldwide – even if they are created by different computers or organisations.

GUIDs are used for features or components of a product that are not sold individually but still require unique identification for tracking and compliance. This allows all information to be consistently and uniquely assigned to a single product. This enables better traceability, management and interoperability of construction products and materials throughout their life cycle.

4.3 Identification requirements using a product example

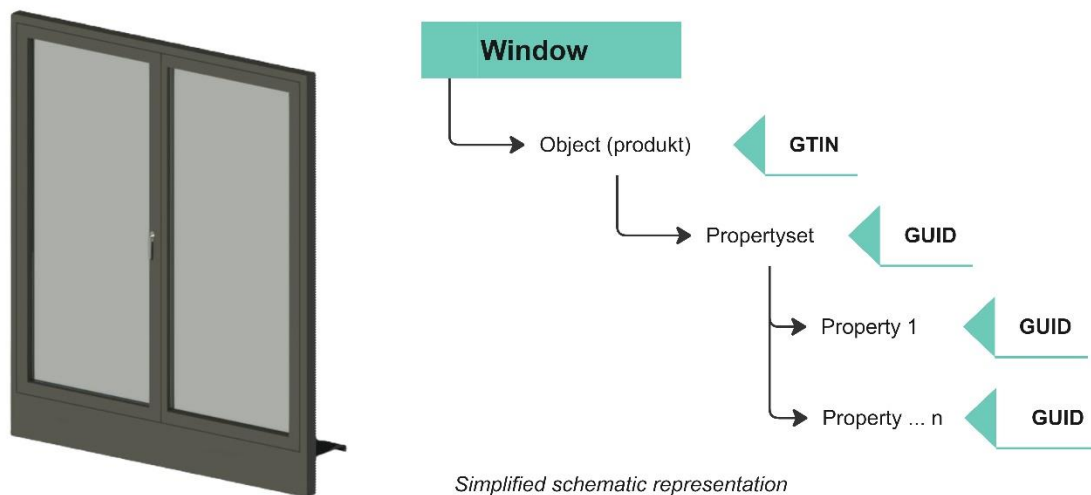


Figure 6: Source: Bauen digital Schweiz / buildingSMART Switzerland

¹¹ The RFC 4122 standard was defined by the Internet Engineering Task Force (IETF).



5 DPP access

The DPP is accessed via an ID on a data record that contains a public permalink¹² on the Internet (example: Creabeton AG – <https://id.gs1.ch/01/07649992269984>). A permalink is a permanent identifier in the form of a URL to a website. The permalink can refer to a resolver, more precisely a redirection service that redirects to the currently valid target page with the DPP or – if this is not available – to the backup copy of the DPP. A simple URL is therefore not sufficient, as it is not permanent or stable.

Currently, only a QR code with a permalink fulfils these requirements. It can be assumed that NFC, DataMatrix and other data carriers will also meet these requirements in the future.

The requirements for this data carrier can vary depending on the product family. For example, the ESPR states that it must be based on open standards and must not lead to vendor lock-in.

The data carrier is not clearly specified in the newCPR. Other regulations, such as the revised labelling regulations in the chemicals sector, are much more explicit in this case and set out clear rules.



Figure 7: Source: Bauen digital Schweiz / buildingSMART Switzerland

Access to the DPP is regulated as follows for chemicals or cleaning agents, for example:

- Without a fee
- Without the need to register, install or download an application or enter a password
- With a maximum of two clicks
- With widely used mobile devices
- Using digital technologies that are widely available and compatible with all major operating systems and browsers

Example:

- After purchasing a mobile phone/tablet, it should be possible to access the DPP with two clicks via the camera after commissioning without installing additional apps.

Service providers already meet these requirements and offer corresponding services.

A password-protected jump to further information that goes beyond the legal minimum can be integrated into the DPP at any time. This simplifies the integration of customers into the supplier's processes and centralises them via a single access point.

¹² According to ISO/IEC DIS 18975.



6 How is a DPP published?

A DPP is usually published and made accessible via digital platforms and systems. This process makes the information easily available and usable for various stakeholders, including manufacturers, construction companies, regulatory authorities and end users.

6.1 DPP creation

To create a DPP, all the required information (see chapter 0) must be provided. The manufacturer can optionally add further information and documentation to the DPP.

Ideally, the manufacturer or industry association should create a product data template (PDT) for each product family or product category or have it created by a service provider. This corresponds to the blank digital form for a product data sheet. ISO standard 23387:2020 defines concepts and principles for data templates for components used in building information modelling (BIM). A template is made up of machine-readable property descriptions in accordance with ISO standard 23386:2020, which originate from digital data dictionaries such as the bSDD, which are based on ISO standard 12006-3:2022.¹³

In the bSDD, further context information such as the respective test standard or the relationship to other properties can be stored once in addition to the property designations, without these having to be integrated in each template.

Which properties are mandatory in a PDT?

Distributors of construction products are obliged by legislation to provide essential characteristics in a PDT as performance information for their products in the form of a declaration of performance (DoP). These essential characteristics are defined in the harmonised technical specifications for each product and include aspects such as mechanical strength, fire performance, energy efficiency, etc. In addition, there is other important information often requested by specifiers, such as material composition, environmental performance and circular economy information. Manufacturers are also required to specify performance characteristics in connection with their innovative solutions. This makes it easier for small companies, for example, to draw attention to their innovations and enter the market more quickly.

A further advantage is that the customer can be provided with the latest state-of-the-art information via the DPP. Data can be continuously added, or information updated in the DPP. Legally binding performance characteristics of the Declaration of Performance (DoP) are excluded. Once the values have been entered into the PDT, a product data sheet (PDS) is created for the actual product, i.e. the physical article. In IT terms, this is an 'instantiated' PDT that contains the specific information of a product. A PDS can be used in digital data exchange between the various stakeholders in a construction project, e.g. for integration into a BIM model.

¹³ ISO 12006-3:2022 – Building construction – Organization of information about construction works – Part 3: Framework for object-oriented information.

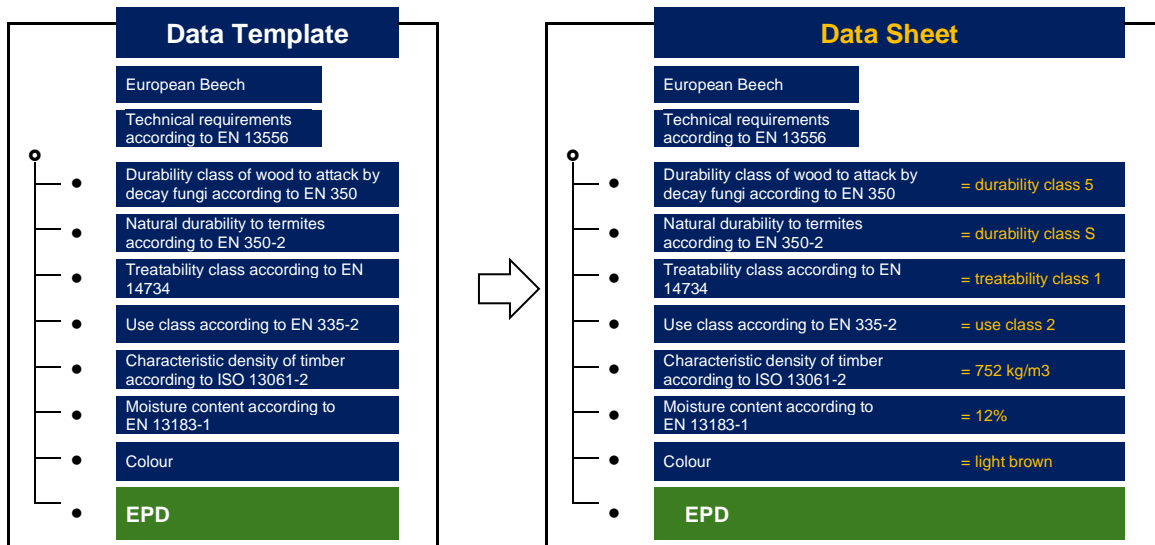


Figure 1. Source: bSI Standards Summit 09/23 - Lifecycle based calculations and optimization - A Nordic tale - Lignum CEI-BOIS

Centralised data management such as a product information management (PIM) or enterprise resource planning (ERP) system including a content management system (CMS) play a crucial role for optimal data integration and interoperability, building on the globally unique product identifier. To ensure that all information is up to date and correct, including new data in the event of changes to product properties or regulatory requirements, the DPP must be updated regularly.

There are many ways to create and publish a DPP. The choice of method depends on the specific situation, the requirements of the product, the size and type of the manufacturing company and the technical and organisational framework conditions. Two main variants are described below. These are summarised in the following diagram.

6.1.1 Variant 1: manufacturer creates and manages the DPP itself

In this variant, the digital product passport (DPP) is made available either on the company's own website or on a separate platform. In this case, the manufacturer creates the DPP internally by first collecting all the product information required for placing the product on the market and organising it by life cycle phase. This gives the manufacturer comprehensive control over their own data and seamless integration into their existing IT systems. The manufacturer therefore always has the option of adapting the DPP to new requirements at any time.

6.1.2 Variant 2: DPP creation by external provider

The DPP is made available by an external provider on its platform. With this variant, the manufacturer remains responsible for ensuring that the data is correct and up to date. Data is updated via interfaces, manually via a CMS or by the provider on behalf of the manufacturer. The manufacturer's infrastructure requirements are minimal as they are provided by the provider.

It can be assumed that a considerable number of DPP providers will be established in the future. This white paper was supported by the DPP providers buildup AG¹⁴ and NexSwiss¹⁵.

¹⁴ <https://ch.buildup.group/de>.

¹⁵ <https://pepadocs.com/en/digital-product-passport>.

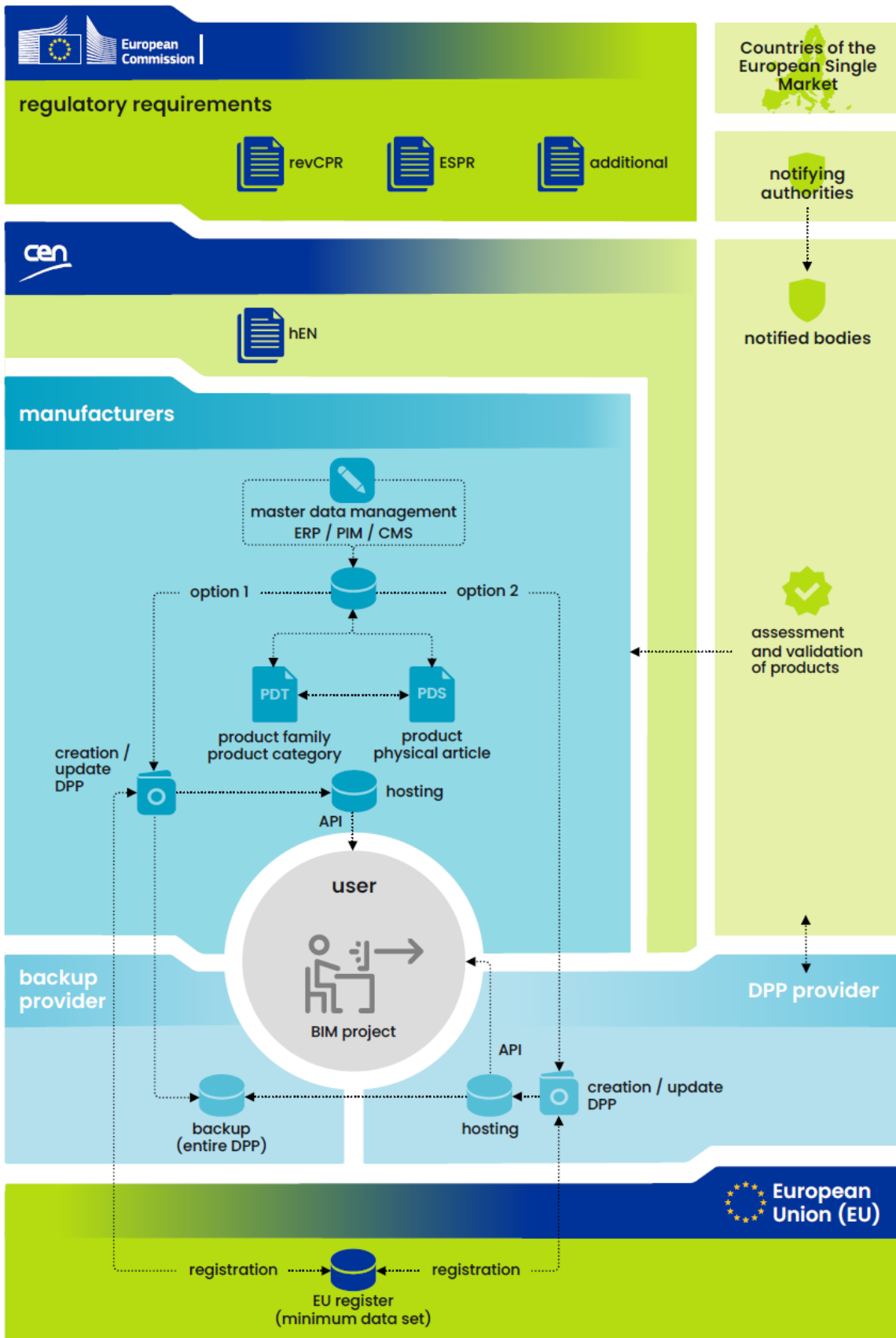


Figure 8: Source: Bauen digital Schweiz / buildingSMART Switzerland



6.2 Secure data transfer in openBIM environments

Within openBIM environments, where different software solutions and platforms are used, it is crucial that data transfers are encrypted and secured. The use of technologies such as blockchain could provide additional anti-counterfeiting protection in this area by ensuring the integrity and traceability of data along the entire supply chain. In addition, all parties accessing the DPP data should be trained in the relevant security protocols to minimise potential security gaps. Furthermore, the open architecture of this model allows it to be flexibly adapted to a wide variety of business cases and to avoid vendor lock-ins when collaborating along the value chain.

6.3 Review

Before publication, the DPP must be checked and validated by the manufacturer to ensure that all information meets the legal requirements, and that the data is consistent and up to date.

The national authorities are responsible for monitoring that products with digital product passports are placed on the market in compliance with the law. They also ensure at the borders that only products with a DPP and the corresponding ecodesign certificates enter the EU internal market.

To facilitate this, it is foreseeable that digital product passports will have to be registered in a central EU register in future. The confirmation number (registration identifier) received after registration will also have to be presented to customs authorities when exporting to the EU. The exact data to be registered will be determined by a regulation.

To ensure that the performance and ecological criteria published in the DPP are complete, correct and up to date, either self-certification or external certification will be required – based on today's CE certification – depending on the product and its risk scheme. Which products will be subject to self-certification, and which must be certified by external bodies will be specified in the respective delegated acts. The following two bodies are involved in third-party certification:

Notifying authorities: these are independent organisations that are appointed by the states in the European single market (EU or EEA member states or states with bilateral agreements) to notify notified bodies.

Notified bodies: these bodies are responsible for testing, verification and certification of products, production and/or calculations in accordance with the applicable assessment system (AVS). These are often private organisations that are notified by national designation authorities to offer their services.

Finally, every company involved in a value chain is obliged to only resell products that are provided with a complete, correct and up-to-date DPP. This means that a retailer must ensure that the products it sells have a complete, correct and up-to-date DPP.

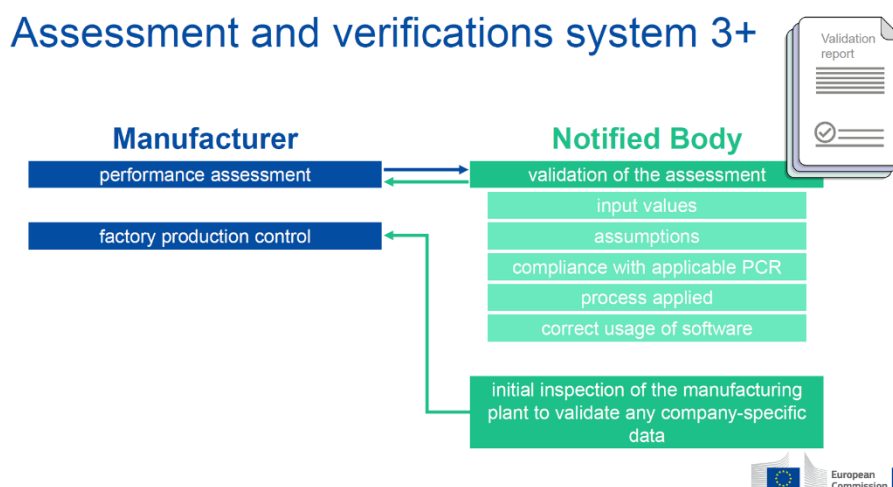


Figure 9: Assessment procedure 3+ for construction products according to the Construction Products Regulation, source: European Commission



6.4 Public access and transparency

The information contained in a DPP must be stored and presented in such a way that it is easily accessible (web URL) and can also be called up via a standardised API. This guarantees a transparent flow of information. Companies, authorities and consumers can thus retrieve comprehensive product information quickly and easily.

6.5 Updating and maintenance

Both the CPR and the ESPR regulate the requirements for updating and maintaining the DPP, whereby the CPR takes precedence over the ESPR as a *lex specialis*, see also chapter 1.3. Among other things, the following requirements are specified:

- The DPP and a back-up copy held by a third party must be accessible for a period of 25 years after the last product corresponding to the product type was placed on the market. The economic operator must make the DPP available for at least 10 years. If a longer period is specified, this must not result in disproportionately high costs and burdens for the economic operators. Particularly in the case of circular value chains, it can therefore be assumed that in the medium term, in conjunction with the obligation to keep a back-up copy, new service providers will come onto the market that will relieve small and medium-sized enterprises in particular of these obligations.
- The DPP shall remain in the Union even after the insolvency, liquidation or cessation of activity of the economic operator that issued the DPP. It fulfils the conditions laid down in the CPR regarding the obligation to set up a back-up system.
- Additional conditions apply to the management of the required back-up copy of the DPP. To ensure the continuity of DPP access even in the event of the closure of a company, the resolver that forwards the permalink from the data carrier (e.g. QR code) to the current valid destination address of the DPP should theoretically not be economically linked to the distributor.

6.6 Training and further education in the openBIM context

To use the DPP effectively, companies and authorities should develop special training programs for the implementation of DPP in openBIM projects. These training courses should cover the technical aspects of openBIM standards such as IFC and bSDD, the new regulatory requirements and the use of DPP data for the optimisation of construction projects. In addition, training on data protection and data security should be offered to ensure the protection of confidential data.



6.7 Data integration before and during use – the asset administration shell (AAS)

The AAS, based on the definition according to IEC 63278,¹⁶ was developed as an interoperable standard for managing and exchanging the digital twin of any asset over its life cycle. The AAS data is stored in information models, known as submodels. These can be defined for your own application; however, standardisation makes sense in terms of interoperable use. This necessary standardisation of information models is currently taking place within the Industrial Digital Twin Association (IDTA).¹⁷ Submodels that have already been standardised include the type plate, technical data and documentation as well as the management of live data. This means that the AAS is also suitable for storing DPP data, which is why DPP4.0, which is being driven forward by ZVEI in Germany, is also based on the AAS.¹⁸

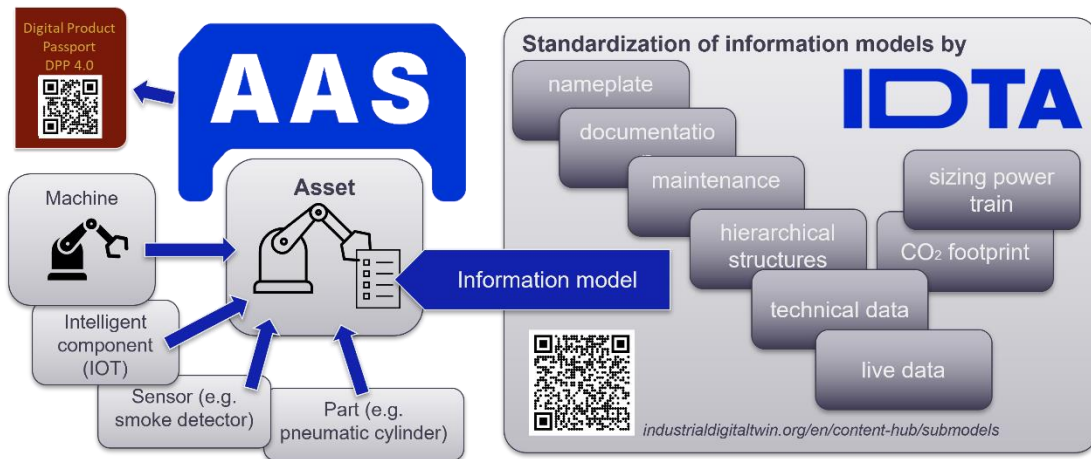


Figure 10: Source: syn2tec.com. Administration shell at a glance

As the AAS for industrial components is already being rolled out,¹⁹ it will provide an ideal basis in future for enriching information in the BIM model and keeping it up to date throughout the life cycle. This applies to product data and changes to specifications as well as to the software used (subject of updates) and access to IOT data. The possibility of collaborative cooperation in the planning phase of buildings, where data from machines to be installed must be compared with the construction, is also interesting. Examples of coordination include floor loads, movement and safety spaces, media supply, noise and waste heat. To create an interoperable standard for the interaction between IFC and AAS, an initiative between buildingSMART International and IDTA is currently active.²⁰

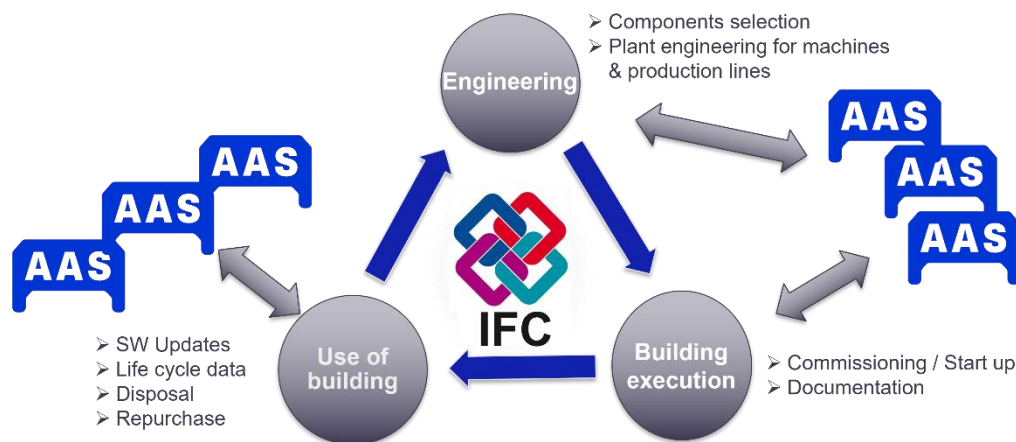


Figure 11: Source: syn2tec.com. Current basis for interoperability between IFC and AAS models

¹⁶ [SN EN IEC 63278-1:2024 Administration shell for industrial applications - Part 1: Administration shell structure.](#)

¹⁷ [industrialdigitaltwin.org.](https://industrialdigitaltwin.org/)

¹⁸ [https://dpp40.eu/.](https://dpp40.eu/)

¹⁹ See AAS initiatives from Siemens, Lenze, Wittenstein, SMC, Bosch.

²⁰ A recommendation for action is currently being developed and will be published in 2024.



7 Green Public Procurement (GPP)

Green Public Procurement (GPP) is part of the European Green Deal and aims to ensure that public purchasers give preference to products and services with a lower environmental impact in their procurement. GPPs are public tenders in which environmental and social criteria are considered when awarding contracts. The DPP is becoming an indispensable tool for GPP implementation as it provides the necessary information to make informed decisions on public procurement and promote sustainable development.

7.1 GPP – tender and selection criteria

The GPP criteria are not directly applicable in Switzerland, as Switzerland is not a member of the EU. However, Switzerland has its own system for sustainable procurement, which is based on the GPP criteria. The Federal Council's 'Guidelines for Sustainable Procurement' were adopted in 2011 and oblige all federal authorities to take environmental and social criteria into account when procuring goods, services and works. The guidelines were revised in 2019 and now also contain specific requirements for the application of GPP criteria. In the last revision of the Swiss Federal Act on Public Procurement (PPA) in 2021, the primacy of the 'most favourable' offer was changed to the 'most advantageous' offer. This explicitly stipulates that significant scope for sustainable procurement be utilised, so that other criteria such as quality, sustainability and social responsibility now also play a significant role, and price is no longer the only decisive factor. The prerequisite for these criteria is uniform specifications for evaluations based on common standards that do not lead to any barriers to trade.

7.2 Ecodesign efficiency suitability criterion

When purchasing products that fall under the EU Ecodesign Regulation and therefore require a DPP, the regulation stipulates that contracting authorities may only procure products whose eco-performance corresponds to at least a threshold value to be defined for each product group. This threshold is based on the two highest product classifications achieved on the market (ESPR, Article 65, point 3). This means that a new suitability criterion will be introduced into public procurement: ecodesign efficiency.

Let us assume that the average product on the market achieves an ecodesign efficiency of C. This means that only products that meet suitability criteria that are at least category C are suitable for procurement in this product area.

7.3 Award criteria

Products that pass the eligibility criteria hurdle are evaluated according to the award criteria. In future, ecodesign criteria must be included in this evaluation key with a weighting of 15% to 30%.

The new CPR slightly softens the weighting of the award criteria for construction products to the extent that from now on no fixed weights are specified for the award criteria and, in addition, the above requirements can be deviated from if there is a price difference of more than 10% to less ecological products.

However, ecological design criteria will become measurable and will be included in the award criteria for public procurement. This will gradually reduce the importance of the price criterion. This will result in new business opportunities for companies that manufacture high-quality and therefore durable products.



8 Digital product passport – impact on Switzerland

The DPP represents a paradigm shift towards structured and machine-readable data based on jointly developed standards and tools such as digital data catalogues (data dictionaries). The DPP is being introduced gradually for the various product categories. Even if the DPP is not currently prescribed by Swiss law, manufacturing companies and distributors should adapt their product data to future data requirements to ensure end-to-end data management and traceability along the entire value chain.

8.1 Export

Thanks to the Mutual Recognition Agreement (MRA) – see chapter 9.3 – Switzerland has easier access to the EU internal market and can place construction products on the market under the same conditions. Economic operators (companies) that place products on the market in the EU must fulfil the new requirements of the ESPR and the newCPR. In addition, the MRA must be adapted to the new EU regulations. This requires a revision of Swiss construction products legislation.

Every DPP must be registered in an EU register when it is newly created (ESPR, Article 12, point 4a). Once this registration has been completed, the company will receive a registration number for each DPP, which must also be visible on each individual customs document. For Swiss export companies with serialised or batch-traced products, the DPP is the key to efficient processes based on digital shipping and customs documents.

8.2 Import

The effects of the ESPR and newCPR for imports into the Swiss market are smaller compared to exports – at least in the short term. In particular, the data carriers required for the import process will change, moving away from 1D codes (barcode) to 2D codes (DataMatrix code, QR code). At the same time, the content will increasingly consist of links to the DPP in the future, in which the actual material numbers will be integrated (e.g. the GTIN / <https://id.gs1.ch/01/07649992269984>).

8.3 Swiss companies in the domestic market

As long as the Federal Act on Construction Products (CPA) has not yet been revised, i.e. the newCPR has not yet been adopted into Swiss legislation, a DPP is not yet required for these products. However, the lack of DPPs can result in competitive disadvantages, as competitor products with DPPs offer greater transparency and traceability.

8.4 Integration of the DPP into Swiss legislation and openBIM

The introduction of the DPP in Switzerland requires adjustments to existing legislation, in particular the CPA. The integration of the DPP into openBIM strategies, which are already being promoted by Bauen digital Schweiz / buildingSMART Switzerland, will play a crucial role in guaranteeing the seamless use of DPP data in national and international construction projects. It is necessary to harmonise Swiss standards and laws to ensure full interoperability with EU standards.



9 Introduction of the DPP for various product categories

The EU plan envisages the introduction of the DPP for various product categories in several phases. This process will extend over several years.

Phase 1 – prioritised product categories

- The focus is on prioritised product categories with high environmental potential and a high degree of maturity of standards and data availability, such as electronics, household appliances, furniture, textiles and construction products. At the same time, guidelines and common data models are being developed for these categories. Pilot projects will be used to test the DPP functionality in practice.
- In the first ESPR Working Plan, iron, steel and aluminium are prioritised in accordance with Regulation (EU) 2024/1781, Article 18, 5a and 5b, target date: April 2025.

Phase 2 – expansion to other product categories

- The DPP requirements will be extended to other product categories based on the experience of the pilot projects and the availability of standards and data. In addition, interoperability between the DPP systems of different sectors will be promoted.

Phase 3 – full implementation

- The DPP is fully implemented for all relevant product categories and the DPP requirements and guidelines are continuously improved based on new findings and technologies.

The existing Joint Research Centre (JRC)²¹ and the newly established Ecodesign Forum (EDF) will support the European Commission in the implementation of the ESPR and newCPR in an advisory capacity.

The JRC provides a wide range of services in the field of construction products. It develops and tests new technologies and materials for the construction industry, works on the standardisation and harmonisation of standards and develops methods for assessing the environmental performance of construction products. It also supports the implementation of the CPR with scientific data and technical expertise.

The EDF will develop into an expert platform within the EU, bringing together various stakeholders to support the development and implementation of ecodesign regulations and standards. The EDF will serve as an advisory and consultation body supporting the European Commission and other EU institutions in the development and adaptation of ecodesign requirements and regulations. Stakeholders outside the European Union, such as associations, can also participate in the EDF.

²¹ [Joint Research Centre \(europa.eu\)](https://ec.europa.eu/jrc/).

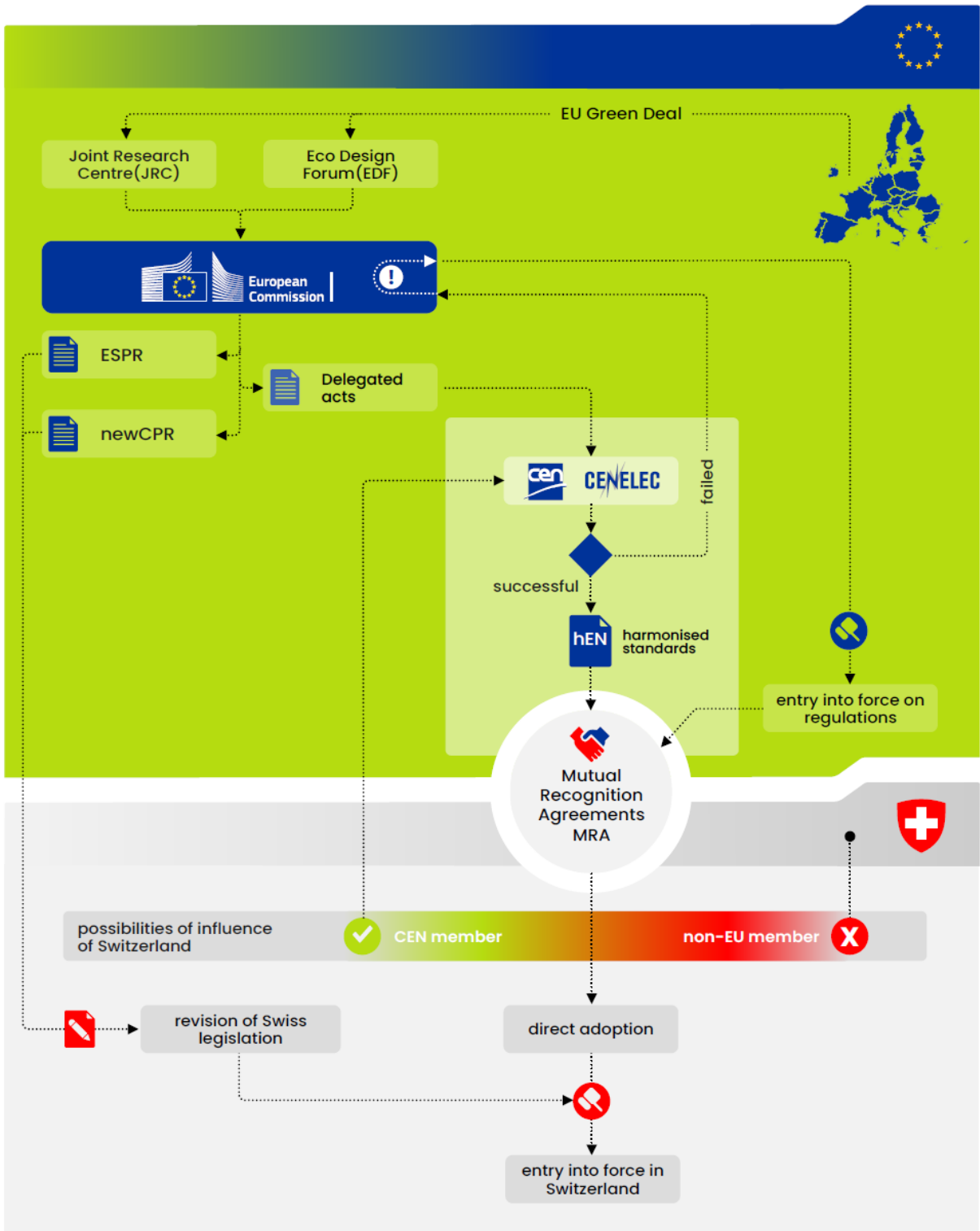


Figure 12: Source: Bauen digital Schweiz / buildingSMART Switzerland



9.1 Delegated acts

Delegated acts are an instrument used by the European Commission to clarify existing EU legislation. They play an important role in the European legislative process, particularly in the adaptation and specification of technical details and requirements that are necessary for the implementation of EU laws.

9.1.1 Delegated acts under the newCPR

Delegated acts under the CPR refer, among other things, to applicable harmonised technical standards or define technical specifications including test methods and performance classes. They also define requirements for the labelling and provision of product information using a DPP.

9.1.2 Delegated acts under the ESPR

Under the ESPR, delegated acts lay down specific ecodesign requirements for different product groups, including energy efficiency, material composition and recyclability. They define methods for carrying out life cycle assessments in order to comprehensively evaluate and significantly reduce the environmental impact of products. In addition, there are requirements for the provision of information on the environmental performance and sustainability of products using the DPP.

During a prioritisation process to finalise a working plan, the list of product groups and horizontal measures for the ESPR actions will be defined.

The JRC's preliminary report 'Eco-design for Sustainable Products Regulation – preliminary study on new product priorities'^{22, 23} already proposes several product groups and horizontal measures that could be prioritised under ESPR.

9.1.3 Delegated act on the DPP

A separate delegated act is expected to be issued for the DPP, which will apply horizontally to all product families.

This essentially involves determining the specific data that needs to be included in the DPP, including information on material composition, environmental impact, recyclability and end-of-life information, as well as verification and assessments in relation to sustainability standards and regulations.

9.2 Mandate to CEN/CENELEC

Through a standardisation mandate, the European Commission has officially commissioned CEN/CENELEC to develop technical standards for the design of the DPP. CEN/CENELEC has set up a standardisation committee, the Joint Technical Committee 24 (JTC24). This is made up of experts from various interest groups who are nominated by the respective national standardisation organisations – such as the Swiss Association for Standardization (SNV) – and is developing a draft standard that is to be adopted by the end of 2025.

Swiss associations and companies could exert a targeted influence on standardisation work. A strong commitment from the Swiss construction industry is therefore of great importance.

²² [ESPR - preliminary study on new product priorities.](#)

²³ [europa.eu/product-bureau/product-groups.](https://europa.eu/product-bureau/product-groups)



CEN also develops harmonised standards (hEN) in the European Economic Area based on the newCPR, which are also submitted to the European Committee for Electrotechnical Standardization (CENELEC) for adoption. CENELEC generally adopts the standards unchanged. hENs are published in the Official Journal of the EU and enter into force after a certain date.

This process ensures the development of transparent, consensus-based and high-quality standards that support EU policy. Compliance with these standards makes it easier for companies to access the EU internal market and at the same time contributes to achieving EU objectives such as safety, environmental protection and consumer health.

If CEN is unable to produce a harmonised standard, the European Commission can take over the standardisation process. It has various options, such as urging CEN to reach an agreement, issuing standards itself or commissioning other standardisation bodies. In some cases, it can even initiate infringement proceedings. Although the CEN is often still involved, this does not result in a harmonised standard in the true sense of the word.

For Switzerland, this means that – in contrast to the regular process within CEN/CENELEC – it is no longer directly involved and therefore no longer has a say.

9.3 Mutual Recognition Agreement (MRA)

The Mutual Recognition Agreement (MRA)²⁴ between the EU and Switzerland around the Ordinance on Construction Products (CPO) facilitate the trade in construction products between the two markets. It allows products that comply with the regulations in one market to be sold in the other market without having to be tested again. Simplified conformity assessment procedures and common procedures make it easier for manufacturers to obtain approval for their products in both markets.

Eliminating duplicate testing saves time and money, while harmonising standards and regulations facilitates trade and raises standards. This leads to faster and simpler market approval of construction products in both markets.

9.4 Adoption of harmonised EU construction product standards in Switzerland

Switzerland currently adopts harmonised construction product standards from the EU by designating the standards in the Federal Gazette.

²⁴ [seco.admin.ch](https://www.seco.admin.ch).



10 Conclusion

The DPP brings a fundamentally new approach to the construction industry. It creates transparency, promotes sustainability and paves the way for a circular construction industry. The key to this is digitalisation and the availability of consistent, structured and machine-interpretable data. Jointly developed standards such as harmonised construction product standards, internationally valid classifications and instruments such as data dictionaries form the basis for this. This approach enables open data exchange along the entire value chain – from raw materials to use in products and reuse.

The application of the BIM method and the use of DPP in combination enable comprehensive digitalisation and optimisation of construction projects and products. While BIM is aimed at the efficient planning, construction and maintenance of buildings, the DPP focuses on the provision of transparent and sustainable product information. The integration of both concepts can bring significant benefits to the construction and manufacturing industry by significantly improving transparency, efficiency, sustainability and circularity.

New business models will emerge based on greater transparency and traceability of product information. Companies can offer innovative services such as detailed product analysis, supply chain optimisation, reuse or recycling support. Platforms that analyse DPP data provide insights into product lifecycles, which in turn leads to more sustainable product design. Insurance companies and regulators benefit from accurate data to better assess risks and monitor regulations.

Overall, the DPP strengthens the position of consumers by providing them with the information they need to make informed decisions. It also promotes fair competition based on quality and sustainability and contributes to improving the entire value chain by ensuring compliance with high standards in terms of product quality and environmental and social responsibility.

Although the DPP is still in the development and standardisation phase, pilot projects are already underway to demonstrate its feasibility and benefits. At the same time, legal frameworks and guidelines are being formulated to support its implementation.

The DPP will be introduced gradually for the various product categories. Even if the DPP is not currently prescribed by law, manufacturing companies and distributors should adapt their product data accordingly to meet future requirements. Efficient data management is essential for companies in the context of the DPP. It ensures compliance with regulations, improves efficiency and quality assurance, supports sustainability initiatives and creates a competitive advantage. A viable data management system is therefore a key component for success in implementing the DPP.

With the DPP, manufacturers and distributors are obliged to process their data digitally in future and make it available in an open network. At the same time, the new CPR creates a secure framework for data sovereignty and guidance for the development of a common data network in the construction industry, thus forming one of the relevant foundations for the continuation of digitalisation in the construction sector.

With the DPP, what belongs together is finally coming together: manufacturers and distributors of construction products are becoming part of the BIM method. In future, they will not only supply physical material for construction, but also provide the data basis for calculating and optimising buildings. The diverse data available from test laboratories will no longer end up in data graveyards but can finally generate added value for the benefit of all parties involved.

In the long term, the DPP will become even more powerful through the integration of technologies such as blockchain. These technologies will further improve the traceability and security of product data in openBIM projects and lead to the development of new applications, e.g. the automated monitoring of the product life cycle in real time. Through the continuous development of openBIM standards such as IFC and bSDD, the DPP will play a central role in the global digitalisation of the construction industry by serving as a reliable data source for sustainability and efficiency assessments.



11 Call for participation

Bauen digital Schweiz / buildingSMART Switzerland imparts best practices neutrally and independently

We invite experts along the entire value chain such as building contractors, manufacturers of construction products, architects, engineers, BIM managers and data managers to join the [expert groups](#) of Bauen digital Schweiz / buildingSMART Switzerland.

Pilot projects that have already been carried out have shown that the DPP can significantly improve efficiency in openBIM projects. The integration of DPP data into BIM models via IFC standards and the use of bSDD for the uniform classification of product properties significantly increased planning reliability and data consistency throughout the entire project duration. These projects demonstrated how the DPP can help to improve collaboration between different disciplines and ensure compliance with environmental and safety standards.

Take the opportunity to share these best practices with the entire community through your contribution to Bauen digital Schweiz / buildingSMART Switzerland.

The Circular Construction Expert Group comprises the following activities:

- Promoting the interdisciplinary exchange of knowledge between experts
- Discussion of pilot projects and best practices directly on the construction site
- Active participation in the creation and publication of white papers
- Development and continuous improvement of product data templates (PDT)
- Contributing practical experience to define and establish best practices
- Optimisation of construction processes through the creation and implementation of relevant use cases; publication on the [Use Case Management Service](#) of buildingSMART International
- Promotion of a common technical language and a uniform understanding through participation in the [National Glossary on Digitalisation in the Construction and Real Estate Industry](#)

Registration for expert groups

build-digital.ch/topics

Contact us if you have any questions or require further information

Bauen digital Schweiz / buildingSMART Switzerland

info@bauen-digital.ch





12 Attachments

12.1 Relevant standards

Standard	Designation
ISO 12006-2:2015	Building construction – Organization of information about construction works - Part 2: Framework for classification Note: will be replaced by ISO/WD 12006-2
ISO 12006-3:2022	Building construction – Organization of information about construction works – Part 3: Framework for object-oriented information
ISO 14021:2016	Environmental labels and declarations – Self-declared environmental claims (Type II environmental labelling)
ISO 14024:2018	Environmental labels and declarations – Type I environmental labelling - Principles and procedure
ISO 14025:2006	Environmental labels and declarations – Type III environmental declarations - Principles and procedures
ISO 14044:2006	Environmental management – Life cycle assessment – Requirements and guidelines
ISO 23386:2020	Building information modelling and other digital processes used in construction – Methodology to describe, author and maintain properties in interconnected data dictionaries
ISO 23387:2020	Building information modelling (BIM) – Data templates for construction objects used in the life cycle of built assets – Concepts and principles
ISO/IEC 15459-6:2014	Information technology – Automatic identification and data capture techniques – Unique identification – Part 6: Groupings
SN EN 15804+A2:2022-11	Sustainability of construction works – Environmental product declarations – Basic rules for the product category construction products
ISO/IEC DIS 18975	Information technology – Automatic identification and data capture techniques – Encoding and resolving identifiers over HTTP
SN EN IEC 63278-1:2024	Administration shell for industrial applications – Part 1: Structure of the administration shell



12.2 Glossary

	EN
AAS	Asset administration shell
BBL	Federal Office for Buildings and Logistics
bSDD	buildingSMART Data Dictionary
bSI	buildingSMART International
CEN	European Committee for Standardization
CENELEC	European Committee for Electrotechnical Standardization
CPA	Federal Act on Construction Products
CPO	Ordinance on Construction Products
CPR	European Construction Products Regulation
DNP	Digital name plate
DoC	Declaration of conformity
DoP	Declaration of performance
DPP	Digital product passport
GDPR	General Data Protection Regulation
EDF	Ecodesign Forum
ESG	Environmental, social, and governance
ERP	Enterprise resource planning
EPDs	Environmental product declarations
EED	Energy Efficiency Directive
EPD	Environmental product declaration
ESPR	Ecodesign for Sustainable Products Regulation
GPP	Green Public Procurement
GTIN	Global Trade Item Number
GUID	Global Unique Identifier
hEN	Harmonised standards
IFC	Industry Foundation Classes
JRC	Joint Research Centre
MRA	Mutual Recognition Agreements
openBIM	Open standards for interoperable BIM data
PIM	Product Information management
PDT	Product data template
PDS	Product data sheet
PPA	Federal Act on Public Procurement
UPI	Unique product identifier
UUID	Universally unique identifier



13 Legal Notice

Management



Thomas Glättli

Project team



Daniel Kuchler



Hansueli Schmid



Dominik Halbeisen
Uwe Rüdel

With the kind support of



Adrian Wildenauer



Elvis Owusu
Louis Werthmüller



Marloes Fischer
Kira Kulik



Patrick Horst



Kai Oberste-Ufer



Yves Bernhard



René Sigg



Manuel Frey



Johannes Pitterle



Joel Iunius



David Gerner
Stefan Reiser



Birgitta Schock



Markus Schoisswohl



Werner Fehlmann
Christian Frey



Romana Rust

Version V1.0

Copyright This document is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International Licence as Attribution-NonCommercial-ShareAlike under the same terms and conditions.

Further information is available at: [Creative Commons](https://creativecommons.org/licenses/by-nc-sa/4.0/)



Restriction and handling

This document does not claim to be exhaustive. It is also not a universally valid recommendation or guideline from a legal perspective but is intended to help all those involved in the construction and real estate industry to understand the interdependence of the individual necessary control instruments and to allocate them correctly.

Publisher

Bauen digital Schweiz / buildingSMART Switzerland
Zurich, September 2024