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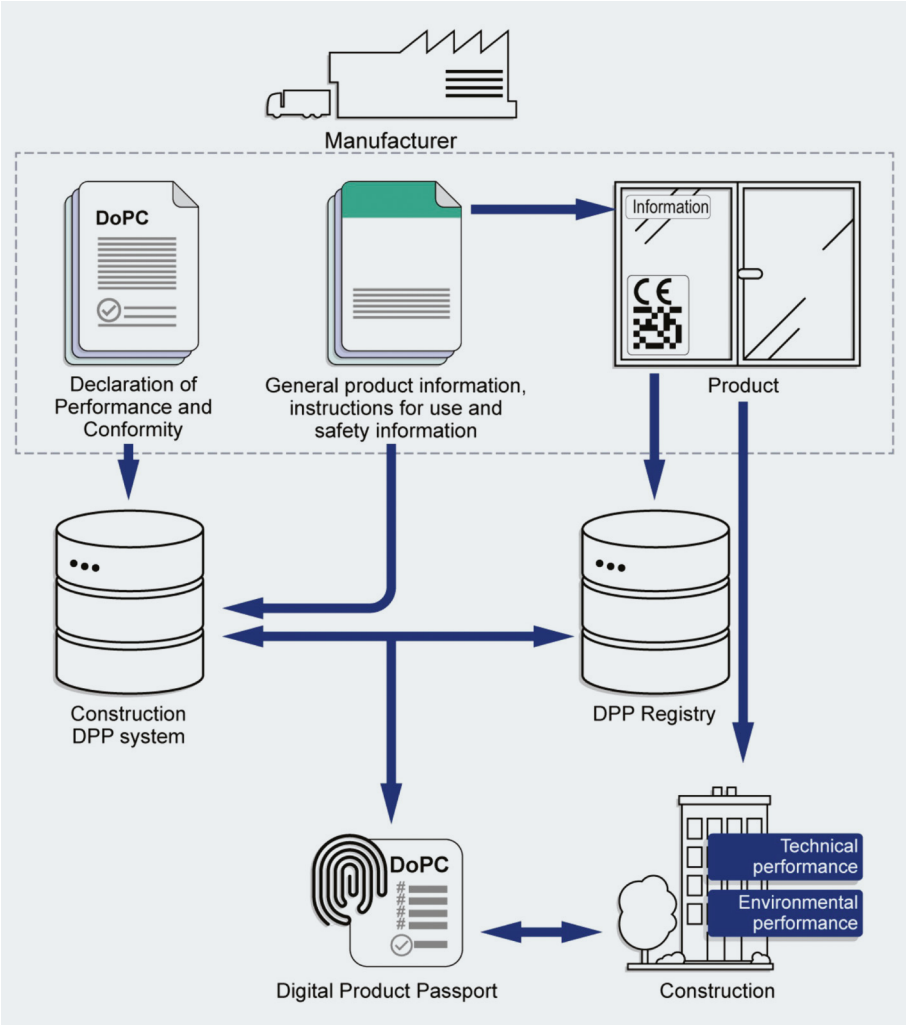
DIGITAL PRODUCT PASSPORTS AND CONCRETE

Su Butcher of the **Plain Language Group** explores Digital Product Passports (DPPs) and how they will affect members of The Concrete Society.



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A Digital Product Passport (DPP) is a structured digital record providing key information about a product. It enables stakeholders across the product's life cycle, including manufacturers, consumers, regulators and recyclers, to access data related to its key attributes, including sustainability, safety and compliance.

The DPP is a core feature of the new European Construction Products Regulation (CPR): (EU) 2024/3110 of December 2024[1]. There is further information about DPPs in the new European Ecodesign for Sustainable Products Regulation (ESPR): (EU) 2024/1781 published in July 2024[2]. This regulation sets out sustainability requirements for a wider range of products in the EU.

Construction products sold into the EU that are currently covered by the old CPR, including concrete, will in time be covered by the new DPP system.

In its recent Construction Products Reform Green Paper[3], the UK Government made repeated reference to DPPs and it would be reasonable to assume that DPPs will also become part of the UK market.

HOW WILL DPPs ASSIST?

The European Union has adopted Digital Product Passports to foster a more open and responsible marketplace for products, by integrating open data principles and enhancing transparency across product value chains.

Information about products is required by many actors in the construction and infrastructure supply chain: not just by your customers but also by their customers, by regulators and enforcement bodies, by the designers, builders and users of the buildings and structures, and by the people who maintain, repair, repurpose and recycle them.

As well as being essential to a circular economy, DPPs will help manufacturers market and sell their products:

- by facilitating compliance with regulations
- by improving product data management throughout a product's life cycle
- by supporting sustainability goals and providing a means to achieve them.

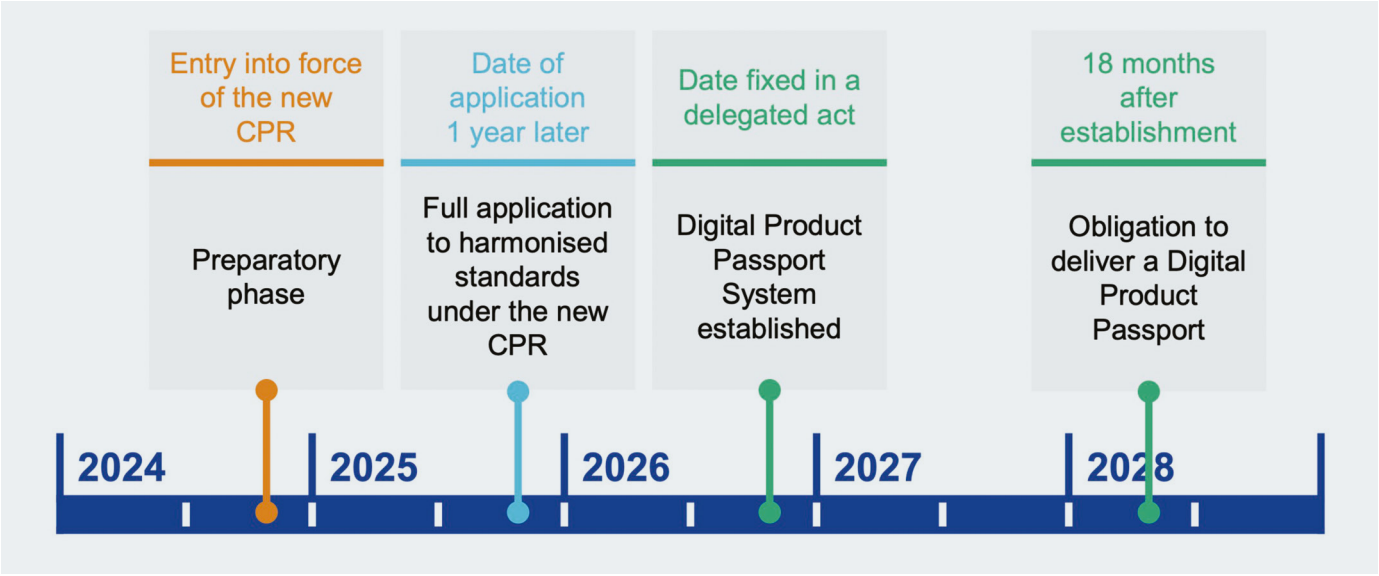
This is because:

- manufacturers' sales and marketing teams will know they provide information that is always accurate and linked back to source
- designers can check that the products they specify comply with the necessary performance requirements
- distributors and contractors can ensure that the correct products have been supplied
- installers can be sure they installed the specified product
- building control officers can sign off works having verified that products and systems meet with regulatory requirements
- owners can know what is in their buildings and structures.

HOW DPPs IMPROVE ON EPDs

Figure 1 shows how DPPs might work. Three key elements are:

- a Declaration of Performance and Conformity (DoPC; a digital equivalent to the Declaration of Performance)
- other information about the product, including instructions for use and safety information



(Image: EU/CC BY 4.0)

OPPOSITE PAGE:
Figure 1 – visualisation of how the Digital Product Passport might work (Oscar Nieto, European Commission. Conference on the new Construction Products Regulation, October 2024).

ABOVE:
Figure 2 – timeline of DPP introduction (Oscar Nieto (as Figure 1)).

- a unique identifier and a data carrier to connect the identification and the information to the product itself.

Alongside other information, a DPP will therefore contain the properties specified within delegated technical Standards committees of being essential characteristics of an Environmental Product Declaration (EPD). The information currently held in an EPD will therefore become part of the DPP for your product.

However, the advantage of DPPs is that the data contained in them can be dynamic, that is, capable of being updated over time. DPPs will therefore be able to connect to continuously updated information about a product's environmental performance, raw material composition, manufacturing processes or changing end-of-life handling, for example.

HOW IDENTIFIERS MIGHT WORK WITH MASS MATERIALS

One might think that applying a unique identifier via a carrier, such as a QR code or RFID, to a mass material, such as in-situ concrete, might be a challenge, but this should not be difficult. The same challenge applies to other materials, such as asphalt, timber or paints.

When you open the fridge and check the packaging before you pour a glass of orange juice, if you scan the QR code with your diet app, keeping a record of your consumption against a record of your runs, steps and swims, the information about the products you consume can persist and provide a rich resource to review your performance. The same will apply to a built asset.

When specifying a material or product under ISO 19650[4], for example, the asset you are specifying for has a container holding the necessary information to meet requirements, for every material or product that is to be used.

The procurer uses this information to procure, check delivery and for installation instructions. The identifier may be carried on the packaging or embedded within the product, but it will also be present on the invoice and in the information model for the asset. The information can therefore be retained and persist, to enable maintenance, repair, replacement and end-of-life processing.

HOW DPPs WILL BE INTRODUCED

The new EU regulations foresee a process of evolution whereby the information about products is gradually digitised and shared digitally. See Figure 2 for the timeline.

The European Commission is addressing key aspects such as delegated acts, while CEN and CENELEC are working on establishing Standards at a European level. In the UK, BSI Committee IST/47/-3 participates in the development of international and European Standards, including those related to DPPs, ensuring UK perspectives are represented in the global standardisation process.

At the end of this process, Digital Product Passports will be based on open Standards, structured and machine-readable with an interoperable format, searchable and transferrable through an open, interoperable data exchange network, without proprietary (ie, vendor) lock-in.

WHAT TO DO NOW

It should be clear that a Digital Product Passport is not something that you can buy off the shelf from a software provider. In any case, the contents of a DPP are yet to be determined. To prepare for DPPs now, you will need to prepare to supply structured product information to the supply chain. The journey to digitisation does not need to be expensive; you already have the information.

References:

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