

**BSEE MAGAZINE**

**ENVIRONMENTAL IMPACTS: BULLETIN 1 OF 6**

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## **WHY EVALUATING THE ENVIRONMENTAL IMPACTS OF PRODUCT CHOICE FOR HOT AND COLD WATER SUPPLY IN BUILDINGS WILL BECOME ESSENTIAL**

As the environmental impacts of our construction and built environments become better known, so we are seeking better and less harmful ways to build and exist on this fragile planet. By increasing our knowledge base, we can help create a more sustainable future. This is the first in a series of bulletins by the British Plastics Federation Pipes Group which together will aid specifiers and engineers in considering the environmental benefits of product materials specified for hot and cold water systems. By developing knowledge of Life Cycle Assessments and Environmental Product Declarations, the most suitable products can be selected to support the circular economy.

The first bulletin, written by Franz Huelle, is a jargon buster, covering what Environmental Product Declarations (EPDs) are, how they have evolved, and why they should be used in the UK. **An EPD can be much more valuable than a tick-box exercise when tendering** and over the coming months you will learn why.

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### **BULLETIN 1: JARGON BUSTER**

The temperature of our planet is rising at unprecedented levels, commonly referred to as global warming, with the majority of governments worldwide believing it is extremely likely to have been caused by humans. These bulletins set out international and national commitments to the reduction of greenhouse gases (GHG); explain the methodologies for determining the environmental impact of a material, product or system through a Life Cycle Assessment (LCA); and show how an LCA is presented in the form of an Environmental Product Declaration (EPD). The independently prepared and verified EPDs for plastic piping systems inside buildings are used in the bulletins to demonstrate key features of an EPD and assist readers in identifying the right questions to ask when evaluating options.

#### **Key drivers for change**

Three initiatives – the 1992 United Nations Framework Convention on Climate Change, the 2005 Kyoto Protocol and the 2008 Climate Change Act – have helped encourage national governments to own reductions of carbon and greenhouse gas emissions in line with increasingly stringent targets. In 2017, emissions from residential and business sectors

combined accounted for 35% of all carbon emissions in the UK (Source: BEIS), mostly created by the continued high use of fossil fuels for space heating and cooking. Building construction is under scrutiny as a contributing factor on carbon emissions. Close to 50 million tonnes of GHGs are produced as a result of manufacturing, transporting, installing and disposing of construction products and materials used in the UK (including imported products) – equivalent to nearly 8% of the UK's GHG emissions. As emissions are reduced from our use of buildings, there will be an increasing focus on measuring and reducing embodied carbon in the future. A well planned and constructed building can significantly reduce its carbon footprint through careful selection of products, increased insulation levels, designing in controlled ventilation, extraction, heat gain and loss, and by introducing 'green' sources of energy, amongst other strategies. Evidence for the sustainable selection of products is collated and presented within the Environmental Product Declarations.



### What is an EPD?

An Environmental Product Declaration (EPD) is simply a fair and consistent means of presenting the Life Cycle Assessment of a product. Full Life Cycle Assessment (LCA), is an internationally standardised method for comparing all the sustainability aspects of different products or services. LCA involves systematically collecting and evaluating quantitative data across a number of factors: manufacturing of materials; transformation into products; product transportation and installation; the product's lifetime of use; and the product's disposal at the end of life. When comparing construction products, it is important to ensure that the EPDs are covering the same life cycle stages. An EPD can be limited to the production stage only of a product or component, or what is known as a 'cradle to gate' EPD. For plastic piping systems installed inside buildings, manufacturers have opted for a more comprehensive EPD covering 'cradle to grave', which additionally includes life cycle stages of transport to site, installation, use and decommissioning of the product including re-cycling.

Why use EPDs? Consistent presentation of properties and environmental impacts for all materials ensures accurate comparison of their sustainability and contribution to the circular economy, increasingly important when specifying and tendering for future projects.

**Next bulletin: The concept of Life Cycle Assessment, the life cycle stages and the types of environmental impacts considered.**

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