

# IRONMONGERY AND THE IMPACT OF THE ENVIRONMENT GAI SPECIFIER'S GUIDE

*The specifier's guide to specifying ironmongery to meet environmental regulations and best practice principles of sustainability.*



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*Based on the RIBA Approved CPD of the same name, the specifier's guide to Ironmongery and the Impact of the Environment covers how to select ironmongery to meet the relevant environmental regulations and key principles of sustainability.*

*To ensure that your project meets the latest standards, regulation, legislation and best practice, it is strongly recommended that the ironmongery should be specified by a GAI Registered Professional such as a Registered Architectural Ironmonger (RegAI). All RegAI's have successfully completed the GAI Diploma in Scheduling qualification, and continue to maintain and update their knowledge through the GAI continuing professional development (CPD) programme. RegAI status is a clear demonstration of professional competence in matters which are critical to building safety, accessibility and security. Visit [www.gai.org.uk/RegAI](http://www.gai.org.uk/RegAI).*

*If you would like to receive a presentation of the CPD, this is available through GAI member companies. Please visit the GAI website ([www.gai.org.uk](http://www.gai.org.uk)) for more details.*

## CONTENTS

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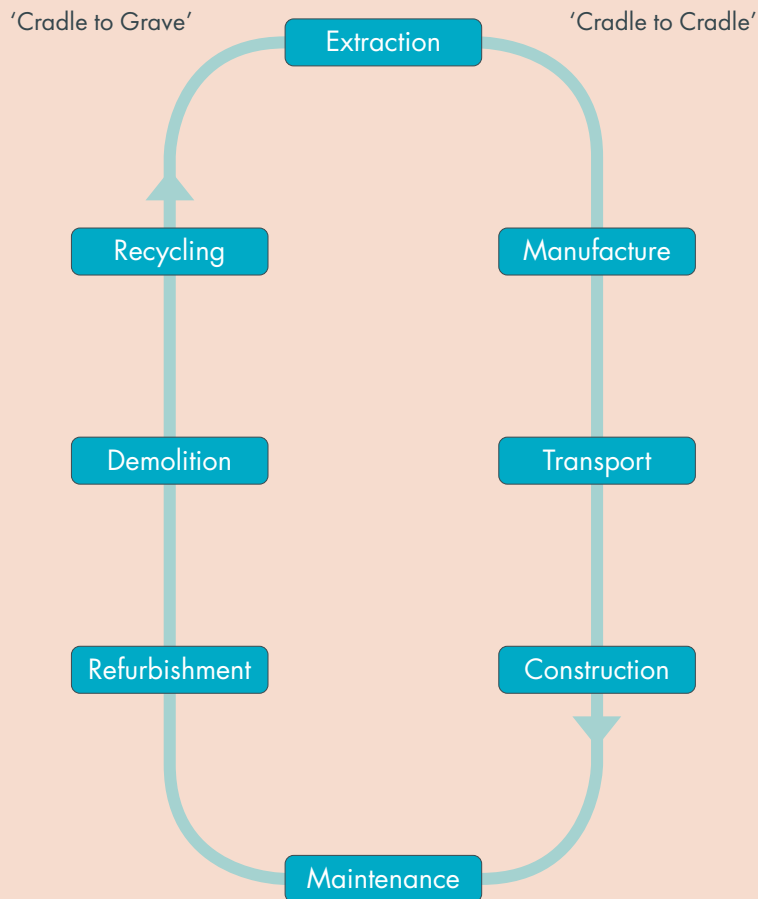
1. THE ENVIRONMENT AND CONSTRUCTION	Page 3
2. INITIATIVES AND PROGRAMMES	Page 4
3. TIMBER CERTIFICATION	Page 5
4. ENVIRONMENTAL PRODUCT DIRECTIVES	Page 6
5. ISO 14001: 2015	Page 7
6. OTHER RELEVANT STANDARDS	Page 8
7. INDUSTRY RESPONSE	Page 9

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CROFT

**LIFE CYCLE OF A  
CONSTRUCTION PRODUCT**



# 1. THE ENVIRONMENT AND CONSTRUCTION

## WASTE STATISTICS

According to the 2021 edition of UK statistics on Waste:

- In 2018, the UK generated a total of 222.2 million tonnes of waste.
- Construction, Demolition and Excavation was responsible for 62% of that number – a staggering 137.8 million tonnes.
- BREEAM states that Construction industry accounts for 55% of material consumption in the UK.
- Built Environment contributes around 40% of UK total carbon footprint.

## THE THREE Rs

With all this in mind we therefore need to look at the basics. Basic recycling starts with the 3Rs – we are all aware of these, even at our own homes. But to improve the statistics above, the construction industry needs to:

- **Reduce** - Eliminate the generation of waste by delivering only what is required to site.
- **Reuse** - Make use of excess or unused materials in their original state on other sites.
- **Recycle** - Modify excess products to create new usable products.

## PRODUCT LIFE CYCLE

All products, not just construction products, have an impact on the environment. This impact can occur at any time during the manufacture, use of the product or at end of life. All these different stages are collectively called a life-cycle. Construction products can have an environmental impact from the extraction of raw materials through processing and manufacture, maintenance and refurbishment through to eventual end of life and disposal.

The quest for a more sustainable and more recently a low carbon built environment, has meant that the demand for information on the environmental impact of construction products has increased dramatically. Much attention is being given to new ways of designing and constructing buildings and whilst the focus has been on energy efficiency and capturing renewable energy, there is a growing awareness that the environmental impacts of construction products will become increasingly important.

From an environmental standpoint, some Companies create a systematic approach to complying with environmental regulations, such as managing waste or air emissions all the way to helping site's reduce the company's carbon footprint.

# 2. INITIATIVES AND PROGRAMMES



### UK GREEN BUILDING COUNCIL (UKGBC)

- The UKGBC was launched in 2007.
- This has a membership of over 400 organisations spanning the entire built environment value chain with a multi-disciplinary network of committed participants spanning the private, public and voluntary sectors.
- Their mission is to radically improve the sustainability of the built environment, by transforming the way it is planned, designed, constructed, maintained and operated.
- UKGBC Collaborates with industry and UK Government to adopt and prioritise progressive environmental strategies.

Their vision is to have a built environment that enables people and the planet to thrive by:

- Mitigating and adapting to climate change.
- Eliminating waste and maximising resource efficiency.
- Embracing and restoring nature and promoting biodiversity
- Optimising the health and well-being of people
- Creating long-term value for society and improving quality of life.

### BREEAM

The BRE Environmental Assessment Method (BREEAM) is a world leading sustainability assessment method for master-planning projects, infrastructure and buildings.

- It addresses various life cycle stages such as New Construction, Refurbishment and In-Use.
- Globally there are more than 539,900 BREEAM certified developments, and almost 2,233,400 buildings registered for assessment since it was first launched in 1990.
- BREEAM inspires developers to improve, innovate and make effective use of resources. The focus on sustainable value and efficiency makes BREEAM certified developments attractive property investments and generates sustainable environments that enhance the well-being of the building users.

One of the key aims of BREEAM is to encourage the use of construction materials with lower embodied impacts. BREEAM uses the Green Guide to Specification as the basis for scoring the embodied impacts of construction materials. This was developed by BRE to provide guidance to specifiers on choosing the most environmentally friendly building construction materials.

The BREEAM Rating benchmark levels (right) enable a client or other stakeholder to compare a building's performance with other BREEAM rated buildings and the typical sustainability performance of new non-domestic buildings in the UK.

### LEED

LEED by the US Green Building Council (USGBC) is one of the most widely used green rated building systems in the world with 1.85 million square feet of construction space being certified each day.

LEED certification means healthier, more productive places, reduced stress on the environment by encouraging energy and resource-efficient buildings, and savings from increased building value, higher lease rates and decreased utility costs

LEED projects are responsible for diverting over 80 million tons of waste from landfills in US compared to the average commercial building, It is used internationally including Ireland with LEED adopted by Irish Green Building Council

BREEAM RATING	% SCORE
Outstanding	≥ 85%
Excellent	≥ 70%
Very good	≥ 55%
Good	≥ 45%
Pass	≥ 30%
Unclassified	< 30%

BREEAM Rating benchmark levels

# 3. TIMBER CERTIFICATION

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## FOREST STEWARDSHIP COUNCIL (FSC)

FSC is an international non-profit, multi-stakeholder organization established in 1993 to promote responsible management of the world's forests. The FSC does this by setting standards on forest products, along with certifying and labelling them as eco-friendly.

FSC runs a global forest certification system with two key components:

- **Forest Management** – thus ensuring that careful and long-term forest management is recognised.
- **Chain of Custody** – showing FSC materials and products have been checked at every stage of processing.

Using the FSC logo signifies that the product comes from responsible sources; environmentally appropriate, socially beneficial and economically viable. GfK data collected in 2014 showed that 50% of people in the UK recognise the FSC logo which really shows the brand awareness of the FSC, even at consumer level.

Many timber door companies have their doors manufactured in accordance with the traceability standards set out by FSC.

## PROGRAMME FOR THE ENDORSEMENT OF FOREST CERTIFICATION (PEFC)

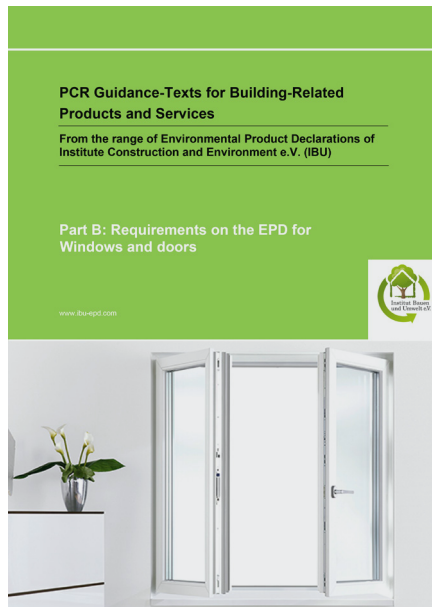
The Programme for the Endorsement of Forest Certification (PEFC) is an international non-profit, non-governmental organisation dedicated to promoting Sustainable Forest Management (SFM) through independent third-party certification.

PEFC has recognised certification systems in 51 countries. Together these account for over 311 million hectares of certified forests, making PEFC the world's largest forest and wood product certification system.

It is broadly similar to FSC but it is not a standards agency – it is a mutual recognition scheme. UK Government states that both FSC and PEFC meet its requirements for responsibly sourced timber.



# 4. ENVIRONMENTAL PRODUCT DECLARATION



Product Category Rules (PCR)

An Environmental Product Declaration (EPD) is a standardised way of communicating the environmental impact of a particular product or system.

Declarations include information on the environmental impact of: raw material acquisition, energy use and efficiency, content of materials and chemical substances, emissions to air, soil and water and waste generation. Product and company information is also included.

EPDs have been used for construction products since the first environmental assessments schemes were developed in the 1990s and an ISO standard for EPDs sets out the standards they should meet.

This shows in simplistic form how an EPD is made up:



For an EPD to be awarded, a Life Cycle Assessment (LCA) needs to be undertaken on the product and it needs to meet the Product Category Rules (PCR). Once this has been completed, an independent program operator can issue an EPD.

## GENERIC EPDs - INDUSTRY WIDE

Declaration of an average product from several manufacturers:

- European Federation of Associations of Locks and Builders Hardware Manufacturers (ARGE) have produced a series of generic EPDs.
- There are 14 EPDs covering the main mechanical building hardware project categories.
- Member associations from a number of European Countries as well as the UK (via Door and Hardware Federation) have all agreed to run ARGE EPDs. These are available to members of the Trade associations.

## PRODUCT SPECIFIC EPDs

Declaration of a specific product or range of products from one manufacturer:

- These are EPDs in which the manufacturer is explicitly recognized as the participant by the program operator.
- Proprietary Life Cycle Assessments are made up of data provided by a company and the LCA is specific to that product or range of products.
- Certain manufacturers have already produced their own specific EPDs.

## ARE EPDs MANDATORY IN UK?

Although applied in several countries, covering all types of goods and services, manufacturers are not required to provide an EPD. Increasingly, they are used in building rating schemes such as BREEAM.

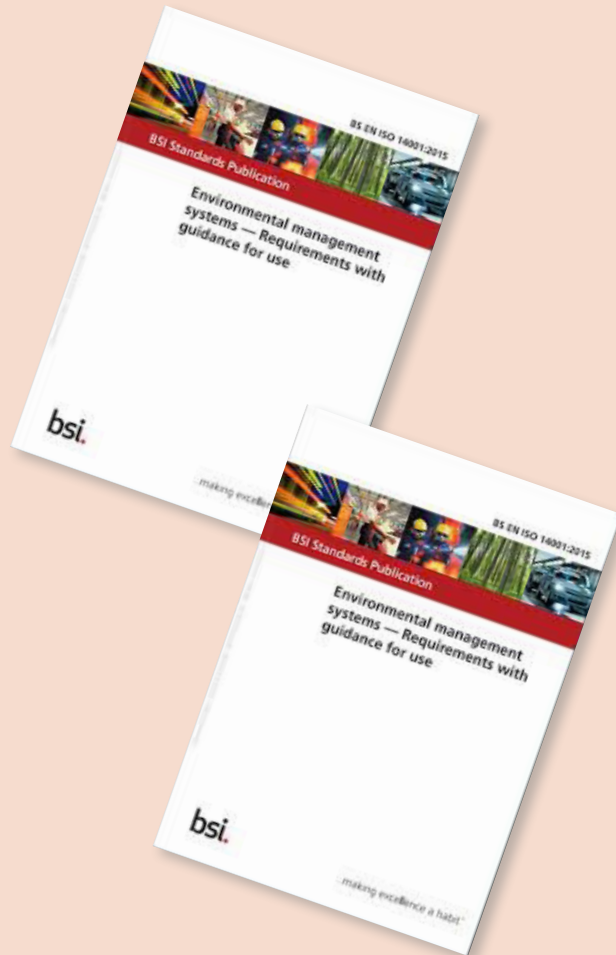
## ARE EPDs MANDATORY IN THE EU?

Sustainability is growing in importance and is on the EU agenda. Some states already require EPD's, e.g. Germany for central government contracts, also Netherlands and France.

CEN Technical Committee CEN/TC350 has developed standards for the assessment of product sustainability performance (EN 15804) EU member states will have to use these standards in any regulation on sustainability.

The new European Construction Products Regulation (CPR) mentions and recommends EPD's to assess product environmental impact.

# 5. ISO 14001 STANDARD



ISO 14001 is the most recognised international standard for environmental management systems, with it being used worldwide. The standard specifies requirements for how to pro-actively achieve the following intended outcomes:

- Identify and understand the environmental aspects of its activities, products and services and associated environmental impacts.
- Understand how significant aspects can be managed, implement necessary controls and set clear objectives to improve environmental performance.
- Establish its environmental policy and objectives.
- Manage its obligation to comply with applicable legal and requirements and other stakeholder obligations, and to regularly check the compliance status.
- Continually improve the management system to enhance its environmental performance.

To accompany BS EN ISO 14001:2015, a sister guidance document has been published, BS EN ISO 14004:2016 - Environmental management systems - General guidelines on implementation. This document provides practical guidelines on the successful implementation and operation of an Environmental Management System.

## ADVANTAGES

- ISO 14001 is designed to be compatible and harmonised with other recognised management system standards, including ISO 9001. It is therefore ideal for integration into existing management systems and processes.
- It helps build and operate an environmental management system within a well-defined and clear framework.
- Provides a tool for environmental performance improvement and the means to effectively monitor and measure environmental performance.
- Facilitates reductions in pollution, waste generation and unintended discharges to the environment.
- Improves resource management, including use of energy, which also may imply a reduction in the cost of running your business.
- Aids improvement in meeting environmental legal compliance and corporate requirements.

# 6.

## OTHER RELEVANT STANDARDS

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There are a number of other standards available, some of these are sister standards to ISO 14001 which also look at Environmental Management Systems. There are also other standards which pick up specifically on construction products and their EPDs:

- **ISO 14005:2019** - Environmental management systems - Guidelines for a flexible approach to phased implementation.
- **ISO 14006:2011** - Environmental management systems - Guidelines for incorporating eco design.
- **ISO 14025:2006** - Environmental labels and declarations - Type III environmental declarations - Principles and procedures.
- **ISO 21930:2007** - Sustainability in building construction - Environmental declaration of building products.
- **BS EN 15804:2012** - Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products.
- **BS EN 17610:2022** - Building hardware. Environmental product declarations. Product category rules complementary to EN 15804 for building hardware.

### 2010 ENERGY PERFORMANCE OF BUILDINGS DIRECTIVE (REVISED 2018)

The Energy Performance of Buildings Directive is not a standard but rather a piece of European Legislation. It states that:

- All new buildings must be nearly zero energy by 31 December 2020.
- The revised EPBD covers a broad range of policies and supportive measures that will help national governments in the EU boost energy performance of buildings and improve the existing building stock in both a short and long-term perspective.
- EU countries must set minimum energy performance requirements.
- To help EU countries properly implement the amendments to the EPBD and to achieve energy efficiency targets, the European Commission has established practical support initiatives called the energy performance of buildings standards (EPB standards), to be managed by the European Committee for Standardisation (CEN).



# 7. INDUSTRY RESPONSE

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Here are some quotations from GAI members in relation to environmental issues

*"When selecting product we as an AI business will look at the environmental policies of our supply chain to see how robust they are. This does make a difference in the product ranges we specify."*

*"Certain contractors have expectations relating to environmental issues and product selection which they will provide us with when tendering"*

*"Areas such as sound reduction and exclusion of draughts through seals are practical examples of how products we specify can make a positive environmental impact on a building"*

*"Specifying products such as door automation allow us to assist with accessibility for all in addition to doing our bit for the environment such as mitigating heat loss."*

*"On the occasions we are asked about environmental issues when specifying we have a robust environmental policy statement we can refer to."*

*"As a manufacturer we can refer our specifiers to our conformity with ISO 14001 which demonstrates our commitment to the environment through our environmental management system."*

## RESPONSES FROM THE INDUSTRY

- Providing visible and detailed Environmental policies at both manufacturing and distribution levels. Using these policies as reasons to select manufacturers as part of a supply chain.
- Many ironmongery manufacturers have invested heavily in providing EPDs as an independently verified means of Life Cycle Assessment.
- Manufacturers adhering to ISO 14001 standard.
- Door manufacturers signing up to FSC and PEFC Certification.
- Increasing awareness of the topic in industry through Continuing Professional Development presentation.



## Guild of Architectural Ironmongers

The Guild of Architectural Ironmongers (GAI) is the only trade body in the UK that represents the interests of the whole architectural ironmongery industry - architectural ironmongers, wholesalers and manufacturers.

Formed in 1961, the GAI is internationally recognised and respected as the authority on architectural hardware, building its reputation on three key pillars; education, technical support and community.

Its technical information service is the only specialist service of its kind, providing comprehensive advice on issues relating to the legislation, regulations and standards governing the use of architectural ironmongery and related hardware.