

5.6 Environmental performance of manufacturers and products

5.6.1 Introduction

The environmental performance of products and the manufacturers supplying these items are becoming of significance to specifiers and end-users when making choices about the combinations of products and designs for buildings. There are now well developed tools and methodologies for providing information on environmental issues to provide the information on the companies and products required. In this section we provide an overview of some of the most recognized ways in the UK to provide this information, namely, carbon footprinting and information based on Life Cycle Assessment (BRE Green Guide to Specification).

5.6.2 Carbon footprint calculation

According to the Carbon Trust the definition of a carbon footprint is 'The total set of greenhouse gas emissions caused directly and indirectly by an [individual, event, organization, product] expressed as CO₂e'.

The carbon footprint can be used by manufacturers for benchmarking themselves against other organisations in terms of their greenhouse gas emissions but only when the same calculation methodology has been used. It is also a useful tool for managing emissions and monitoring their reduction over time as part of an environmental management system. However it is not just manufacturers who have a carbon footprint, it is virtually all of us in our day-to-day lives through the products we consume or use.

In order for an accurate carbon footprint to be calculated, all possible sources of carbon need to be taken into account. There are three main sources that can be controlled to different degrees:-

Direct emissions from an activity that is controlled by the organisation/person
Emissions from electricity
Indirect emissions from products and services

In order to produce a carbon footprint the Carbon Trust recommend five different steps in to achieve a transparent carbon footprint, these are:-

- Define the methodology so that a consistent approach can be achieved.
- Specify the boundary and scope of coverage
- Collect the data and calculate the carbon footprint
- Verify the results (optional)
- Disclose the results (optional)

To help complete the above steps there are a number of useful information sources, these are:-

- Green House Gas (GHG) protocol
- ISO 14064 'Greenhouse gases'
- DEFRA
- Carbon Trust

5.6.3 Environmental profiles of particleboard, medium density fibreboard (MDF) and oriented strand board (OSB)

5.6.3.1 Introduction

BRE Global and the UK and Ireland wood-based panels sector have worked together to produce up-to-date generic environmental profiles data for particleboard, MDF and OSB produced in the UK and Ireland. These environmental profiles, produced according to BRE Global's updated Environmental Profiles Methodology, have been incorporated into BRE Global's materials environmental profiles database. The data has been used within BRE Global's updated Green Guide to Specification¹.

5.6.3.2 The Green Guide to Specification

The Green Guide online (also available in book form) has been produced by BRE Global to assess building materials and components in terms of their environmental impact within a building construction across their entire life cycle which is termed as 'cradle to grave'.

The Green Guide is a tool used within BREEAM (BRE Environmental Assessment Method) an accredited environmental rating scheme for buildings, and the Code for Sustainable Homes. The Green Guide contains more than 1200 specifications used in various types of building. Since the previous edition, information on the relative environmental performance of some materials and components has altered reflecting both changes in manufacturing practices, the way materials are used in buildings, and our evolving environmental knowledge.

There are currently six different generic types of building reviewed in the Guide.

- Commercial buildings, such as offices
- Educational
- Healthcare
- Retail
- Residential
- Industrial

The environmental rankings are based on [Life Cycle Assessments \(LCA\)](#), using BRE's updated [Environmental Profiles Methodology](#).

Materials and components are arranged on an elemental basis so that designers and specifiers can compare and select from comparable systems or materials as they compile their specification. The elements covered are:

- External walls
- Internal walls and partitions
- Roofs
- Ground floors
- Upper floors
- Windows
- Insulation
- Landscaping
- Floor finishes

This data is set out using an **A+** to **E** ranking system, where **A+** represents the best environmental performance/least environmental impact, and **E** the worst environmental performance/most environmental impact. BRE has provided a summary environmental rating - The Green Guide rating, which is a measure of overall environmental impacts covering the following issues:

- Climate change
- Water extraction
- Mineral resource extraction
- Stratospheric ozone depletion
- Human toxicity
- Ecotoxicity to Freshwater
- Nuclear waste (higher level)
- Ecotoxicity to land
- Nuclear waste (higher level)
- Ecotoxicity to land
- Water disposal
- Fossil fuel depletion
- Eutrophication
- Photochemical ozone creation
- Acidification
- Waste disposal
- Fossil fuel depletion
- Eutrophication
- Photochemical ozone creation
- Acidification

For more information go to www.thegreenguide.org.uk.

¹ The Green Guide Online www.thegreenguide.org.uk;
Anderson, J; Shiers, D, and Steele, K. (2009) The Green Guide to Specification: 4th Edition.
IHS BRE Press and Wiley-Blackwell.