

## Environmental Update 2017 (Published May 2018)

### Environmental Management Systems (EMS)

Forticrete is a highly customer focused manufacturer of Roofing, Cast Stone, Walling, and Architectural Masonry building products, supplying markets throughout the UK. We recognise the importance of working closely with all stakeholders to ensure that the objective of providing high quality products to exceed our customer expectations is met.

As a responsible company, Forticrete recognises all aspects of its operations on the environment and therefore tries to minimise its impacts and ensures all efforts are directed towards a cleaner, safer and healthier environment for all its stakeholders.

Forticrete meets the requirements of our trade association, the British Precast Concrete Federation (BPCF) Precast Sector Sustainability Charter.

We recognise the importance of the efficient use of resources. This means much more than the recycling of office paper, cardboard and plastic packaging. We continually look for new materials and processes, opportunities to install energy efficient heating & lighting and modern welfare facilities that will minimise the use of mains water.

By regular assessments of our suppliers through questionnaires and site visits we are able to ensure that we source our raw materials from responsible suppliers who can demonstrate a commitment to sustainability in the supply chain.

The Forticrete Management team work with the other companies within Ibstock PLC, the British Precast Concrete Federation, industry working groups and clients with the aim to develop Key Performance Indicators (KPI's). These monitor progress in meeting targets and objectives e.g. Concrete 2020 Targets. We have published KPI data for 2016 and 2017. The current 2017 KPI data for the BPCF is also included\*. Forticrete data is submitted to Ibstock PLC & BPCF and is subject to audit by a third party assessor.

Employee engagement and communication is facilitated by the Health, Safety & Environmental Team through internal briefings, training and presentations.

*\*This is a provisional figure and will be consolidated later in the year*

## Environmental Performance 2016 & 2017

METRIC	UNIT	Forticrete 2016	Forticrete 2017	*BPCF 2017	Concrete 2020 target
Energy used in production as a proportion of production output	Kwh / tonne	40.21	34.6	44.74	Reduce by 10%
CO2 emissions – Production (Rolling mix)	Kg CO2 / tonne	12.83	10.45	9.79	Reduce by 20%
Mains water consumption as a proportion of production output	Litres / tonne	146.7	118.4	68.8	Reduce by 20%
Waste to Landfill as a proportion of production output	Kg/tonne	0.7	0.6	0.3	0.05
The amount of alternative cement material as a proportion of total cementitious materials	Percentage	4.4%	4.6%	21.6%	25%
The use of recycled / secondary aggregates as a proportion of total aggregates used in product	Percentage	4.7%	3.6%	12.5%	25%

\*Interim data

**Environmental Incidents & Complaints:** There was one environmental complaint made against a Forticrete site in 2017. A complaint was received from neighbours and subsequently from the Local Authority regarding dust levels from the waste storage area. This had been caused by a contractor briefly running a screening plant to assist in the removal of waste. This was immediately stopped and the screening plant removed.

There were no incidents that required reporting to the Environment Agency or any other regulating authority.

**Emissions to air:** Within Forticrete our significant impacts regarding emissions to air arise from the use and storage of constituent materials and from some of the secondary manufacturing processes. The control measures ensuring compliance with local and legal requirements and responsibilities are documented within relevant permits. As part of the continual improvement process, we have installed automatic ground level protection systems to prevent over filling / pressurisation of our cementitious silos. It also reduces the need for employees to work at height on the silos.

All sites are regulated by the respective local authority regarding emissions to air and subject to audit and inspection by those local authorities.

**Communities:** Forticrete sites are rooted in local communities and are committed to being good neighbours. We positively contribute to the economies and societies in areas which our factories operate, both through our business activities and working with local communities and charities.

A key feature of local engagement is the holding of advance discussions with neighbours on any development plans. Maintaining the existing good reputation of the company ensures Forticrete continue to meet stakeholder expectations.

There is a community engagement plan for each Forticrete site which is annually reviewed to assess our local impacts.

Each year local associations, charities and sports teams received support from us. In addition, many of our employees are involved in raising money for good causes which we fully support.

**Energy Efficiency & Climate Change:** Forticrete has made some significant improvements with regard to energy management and the efficient use of energy resources.

<b>METRIC</b>	<b>UNIT</b>	<b>Forticrete 2017</b>	<b>BPCF 2017</b>	<b>Concrete 2020 target</b>
Energy used in production as a proportion of production output	Kwh / tonne	34.6	44.74	Reduce by 10%
CO2 emissions – Production (Rolling mix)	Kg CO2 / tonne	10.45	9.79	Reduce by 20%

The procurement of plant and equipment considers energy efficiency as of prime importance. Measures to improve energy management include upgrading compressors, LED lighting equipment and energy efficient boilers. Energy Kwh /tonne fell by 14% in 2017.

We continue monitor that electricity and mains gas is being used effectively. To this end we have improved the reliability of our gas metering on all sites. These are energy efficient units

and have benefits on improving product performance, minimising waste levels and minimising cement content.

British Precast Concrete Federation members are fully committed to reducing the embodied carbon within concrete, and reports on carbon intensity - kg of CO<sub>2</sub> per tonne of concrete produced and energy intensity in kWh/tonne. This data includes the emissions and energy use from the supply of constituent materials.

The indicator for production CO<sub>2</sub> is carbon intensity or CO<sub>2</sub>/tonne of concrete produced. Data from the energy use of concrete production and a proportional contribution from constituent materials are converted to carbon emissions using factors published by DEFRA\*\* with an adjustment for the process carbon emissions from cement. Energy CO<sub>2</sub> emissions fell by 19% in 2017.

The resulting value of our indicator is influenced by both CO<sub>2</sub> emissions from production and changes in the average proportions of concrete represented by the data collected. These proportions, termed the 'Rolling mix' are directly affected by the relative market demand for different types of concrete.

Operational carbon from buildings is significantly greater than the embodied carbon in their construction materials.

Forticrete products can make a significant contribution to reducing operational carbon through its unique combination of properties, in particular thermal mass. The Concrete Centre continues to provide best practice advice on low carbon design supported by regular events to share knowledge from exemplar projects.

**Water Management:** All Forticrete sites have previously undergone a third party audit of water discharges assessing any potential breaches of Environmental legislation relating to pollution. The findings of the audit did not find any breaches.

We undertake a water discharge testing programme on all our sites for both foul and surface water discharges. No non compliances were found in 2017.

Water is an essential ingredient for the hydration of cement and is an important resource for concrete and its materials supply chain. The industry indicator reports mains water in litres per tonne of concrete used directly in concrete production added to a proportioned contribution from raw materials production.

<b>METRIC</b>	<b>UNIT</b>	<b>Forticrete 2017</b>	<b>BPCF 2017</b>	<b>Concrete 2020 target</b>
Mains water consumption as a proportion of production output	Litres / tonne	118.4	68.8	Reduce by 20%

We are undertaking a replacement of water metering provision to reduce leaks, improve accessibility and accuracy. Procedures are in place to detect leaks in our sites earlier and thereby minimise water losses. Water consumption litres /tonne fell by 19% in 2017.

**Waste Management:** Working with our colleagues within the Ibstock PLC we have implemented a waste management policy that ensures the collection, segregation and disposal of waste from our sites; ensures compliance with legislation and minimises the volume of waste that goes to landfill. It is our long term objective to obtain third party certification for zero waste to landfill.

METRIC	UNIT	Forticrete 2017	BPCF 2017	Concrete 2020 target
Waste to Landfill as a proportion of production output	Kg/tonne	0.6	0.3	0.05

Our manufacturing sites are continually looking at ways to minimise process waste and to recycle back into the process for either new or existing products wherever possible without jeopardising quality. Waste to landfill fell by 14% in 2017.

All inert process material leaving our sites is used for secondary processes e.g. road hardcore. No inert process waste leaving our sites goes to landfill.

**Materials Recycling:** Where practicable and technically feasible, Forticrete recycles both externally and internally sourced inert materials in its production processes. This has both environmental and financial benefits. Examples of these materials include Ground Granulated Blast-furnace Slag (GGBS) in powder and pellet form and re-ground process waste used in our Masonry factory.

GGBS powder is used as a cement alternative where it is technically possible and economically viable to do so.

METRIC	UNIT	Forticrete 2017	BPCF 2017	Concrete 2020 target
The amount of cement substitute material as a proportion of total cementitious materials	Percentage	4.6%	21.6%	25%
The use of recycled / secondary aggregates as a proportion of total aggregates used in product	Percentage	3.6%	12.5%	25%