



# Sustainability Matters 2019

The Precast Sector's Sustainability Performance Report (2018 Data)

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## Coverage

The precast concrete sector continues to make significant progress across most Key Performance Indicator targets and has now started work on the targets/objectives post-2020.

The 2019 sustainability matters tracks the precast sector's 2018 sustainability KPI's, set against our targets for 2020 and the KPI baseline of 2012. Last year, we made further progress toward these 2020 targets. Our manufacturing carbon emissions dropped by 30% since 2012 (43% since 2008). The manufacturing process for precast concrete products is becoming more efficient with a 40% reduction in water use, a 26% drop in usage of fossil fuels, and a 95% reduction in waste to landfill since 2008. We also offered environmental audits for the fifth year running, covering a total of 45 member companies in 2018.

We have now started plans for post-2020 targets and objectives. The Sustainability Agenda has changed significantly in the last 10 years with a further rise in the 'Capital Carbon' agenda and additional emphasis on sustainable procurement, ethical labour and material sourcing standards. We are responding by building more informed targets and guidance to help the sector address these issues. HM Government's Industrial Strategy, 25 Year Environment Plan, and England's new Resources and Waste Strategy also offer a wide range of sustainability objectives that we (as a sector) need to support and help implement. We believe that our precast sector is one of the most prepared to fulfil this role.

- Today, most of our members' production is covered by certified and independently verified Environmental Product Declarations (EPDs).
- Well over a third of British Precast members have embraced digital transformation and offer BIM-enabled objects or BIM data-templates for their product range.
- Over 76% of precast concrete manufactured by our members is responsibly sourced, and 90% is manufactured under UKAS-accredited quality and environmental management systems.

British Precast will aim to assist the sector in achieving Net Zero Carbon by 2050. We will also continue to engage with other government-sponsored initiatives on the definition of 'Zero avoidable waste'. British Precast also remains committed to the Infrastructures Carbon Review (ICR) pledge, the Sustainable Concrete Forum 2020 targets, and MPA's 'Safer by Competence'.

**Nick Gorst**  
Director, British Precast

*Note: Members of British Precast can use this data capture exercise and the targets set by the industry to help demonstrate conformance to the Responsible Sourcing of Materials standard (BES 6001) with regards to stakeholder engagement, etc. Third party certification auditors are welcome to contact British Precast to gain confirmation that annual KPI data has been supplied.*

KPI data collected for 2018 covered 112 production sites and over 14 million tonnes of precast. This is 8.1% lower than in 2017 but 33% higher than in 2012. We estimate that this covers around 65% of the UK's production last year. This is compared to 51.2% only in the baseline year (2012). Companies reporting data employed 7,428 full time equivalent staff in 2018. This is lower than data for 2017 (8,958) but higher than 2012 (7,015).

The following statistics, reported under the four main objectives of the Concrete Sustainability Strategy have been calculated from the data supplied to date:

### **SUSTAINABLE CONSUMPTION & PRODUCTION**

90% of precast concrete was manufactured under combined quality and environmental management systems.

#### **Quality & Environmental Management systems**

Most of the precast concrete produced in 2018 was covered by UKAS-accredited management systems. Around 93% of reported production (95.9% of sites) was covered by an ISO 9001 quality management system. 90% of production (89.6% of sites) was covered by ISO 14001 (or equivalent) environmental management systems. Over three quarters of that production is also sourced responsibly and certified under BES 6001.

Quality and Environmental management systems do not only indicate commitment to address environmental aspects and impacts but also a positive association with development of complementary resources and have skills related to companies' competitive advantage and ability to adopt new technologies and innovation. 90% of precast concrete in 2018 was produced under both management systems. This is reflected in the number of environmental incidents (convictions) recorded or reported to external regulatory authorities. For the 10th year in a row no such convictions were recorded against any British Precast members.

#### **Relevant product data and digitalisation**

The precast sector has also witnessed an increase in Environmental Product Declarations (EPDs), BIM objects and product templates (PDTs) in the last few years. By the end of 2018, 69% of our members were covered by valid third party certified EPDs. 37% of members have BIM objects or PDTs for their manufactured units.

*Note: Some data items can only be estimated due to technical and legal restrictions.*

## NATURAL RESOURCES & ENVIRONMENTAL PROTECTION

### Water use

Mains water use in precast factories has dropped by 12.9% since 2012 to around 71.7 litres of water used per tonne of production. Groundwater use was around 37.6 litres/t compared to 46.8 litres/t in 2012.

### Waste generation and management

31.98 kg of waste was generated per tonne of concrete in 2018, of which only 0.79% was disposed to landfill, 50.02% recycled on production sites and 49.02% recycled off site. Overall, waste generated was 19.6% lower than in 2012. One 2020 target which seems to have been achieved is waste to landfill, which has now dropped down to 0.25 kg/t: Our 2020 target is 0.5 kg/t.

A significant amount of concrete waste recycled by precast manufacturers is reused into precast products as explained below. To help with further waste reduction efficiencies, and use of recycled concrete aggregates (RCA), British Precast has published two guide documents this year which introduce protocols and advice on the management of factory waste and RCA.

### Secondary and recycled aggregates use

Secondary and recycled aggregates usually make up around a fifth of aggregates used in the production of precast concrete products. In 2017, around 21.3% of aggregates used were of a recycled or secondary origin. This year, data on this item is not published as further data collection, assessment and feedback is needed. Recycled concrete aggregates historically made up most of that category.

### Use of low cementitious materials

An average of 144 kg of cementitious materials was used per tonne of precast in 2018. This included 5.5% fly ash, 3.9% ground granulated blastfurnace slag and 2.5% limestone fines. Overall replacement of Portland cement was around 21% in 2018 (or 19.1% if quicklime is excluded). This is against a target of 25% replacement by 2020.

## SUSTAINABLE COMMUNITIES

### Health & Safety

63.4% of reported production was covered by a UKAS-certified health & safety management system in 2018, which was roughly similar to coverage rates during the baseline year (64.9%). The precast sector's LTIFR rate in 2018 was 5.73 per million hours compared to 9.8 in 2012.

### Ethical business standards

Around 30 companies reported that they operate a formal Code of Business Ethics. 91% of member companies have anti-bribery and corruption measures (including confidential reporting) in place. 85% had written Equal Opportunity policies in place.

### Respect for people & local environment

Around 22.9% of sites operated formal local liaison schemes in 2018. Charitable donations worth £485,000 were made last year by 23 companies.

### Competence and skills

99.2% of reported employees were covered by formal training and development policies in 2018. An average of 22.8 hours of training per employee was provided.



Aggregates Industries 'Bugs Hotel' – winner of the British Precast 2018 Sustainability Awards.

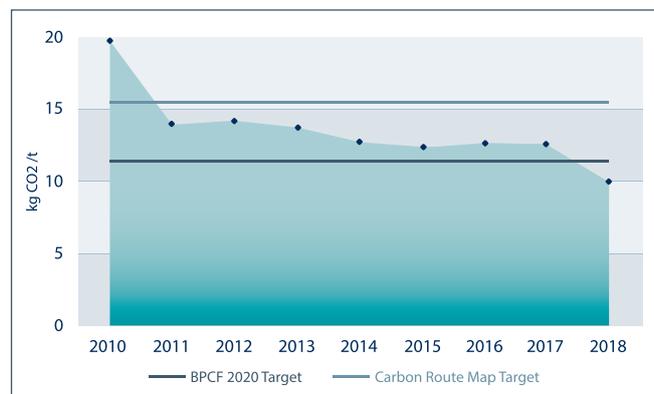
## CLIMATE CHANGE & ENERGY

### Energy consumption and carbon emissions

Energy consumption, and climate change related emissions, are two of the strategy aspects which have seen rapid reductions in the last 10 years. Factory energy consumption in 2018 was around 46.22 kWh per tonne. This is 8.6% lower than in 2012. However, 3.74% of energy consumed in precast factories was from renewable resources not subject to Feed-in-Tariffs. This means that fossil fuel energy reduction was well over 12% in six year (44.49 kWh/t). Factory CO<sub>2</sub> emissions continued to drop, reaching 10 kg CO<sub>2</sub>/t in 2018, compared to 19.9 and 14.31 kg CO<sub>2</sub>/t in 2010 and 2014 respectively.

*Note: British Precast assesses that carbon emissions could have risen to 10.7 kg CO<sub>2</sub>/t if more member companies had taken part this year. The 2020 target would have still been achieved.*

The drop in carbon emissions was also evident in the recently produced EPDs. The cradle-to-gate carbon footprint of concrete drainage products, for example, has dropped by over 9% since 2009. Around a third of precast production was covered by UKAS-accredited energy management systems (ISO 50001). One member has even become the first material supplier certified to PAS 2080 – the infrastructure carbon management standard.



Precast factory CO<sub>2</sub> emissions (2010-2018) against British Precast 2020 and Green Construction Board (GCB) Carbon Routemap targets.

### Transport (deliveries)

British Precast does not collect direct emissions data for transport of precast products to site. We only collect data on the number of deliveries and average distances to construction sites. Data from 2018 indicates that an average lorry carried 18.32 tonnes of precast product per delivery to site. The average delivery distance in 2018 was 102.2 km.

# Key Performance Indicators (KPIs)

This table summarises member companies' performance and progress in 2018 against the Precast Sustainability Charter Scheme 2020 Targets.

Strategy objective	Key Performance Indicator (KPI) Target (2012 baseline)	2008	2012	2018	Target 2020	Status/ notes
Sustainable Consumption & Production	Production tonnage (sites) covered by UKAS accredited Environmental Management Systems	84.5%	88.9%	90% (89.6%)	95%	On track
	Production tonnage (sites) covered by UKAS accredited Quality Management Systems	84.5%	91.1%	93% (95.9%)	95%	On track
	Production tonnage (sites) covered by responsible sourcing certification	n/a <sup>1</sup>	71.1%	76% (66.1%)	95%	On track
	Environmental convictions for air and water emissions against precast manufacturing sites	1	0	0	0	Achieved
	Companies covered by EPD declarations	n/a <sup>1</sup>	n/a <sup>1</sup>	69%		No target
	Companies covered by BIM objects/ PDTs	n/a <sup>1</sup>	n/a <sup>1</sup>	38%		No target
Climate Change & Energy	Reducing overall fossil fuel energy (kWh/ tonne) use in production by 10%	62.7	50.6	44.49	45.33	Achieved
	Reducing CO <sub>2</sub> emissions for production (kg CO <sub>2</sub> / tonne) by 20%	17.37	14.3	10.00	11.45	Achieved
	Production tonnage (sites) covered by ISO 50001 (energy management systems)	n/a <sup>1</sup>	n/a <sup>1</sup>	31.5% (20.7%)		No target
Natural Resources & Environmental Protection	Reduction of factory waste by 10% (kg/tonne)	42.0	39.8	31.98	35.8	Achieved
	Reduction of factory waste to landfill (kg/tonne)	6.3	1.67	0.25	0.5	Achieved
	Increasing the proportion of alternative cement additions (as a total of cement content) to 25%	n/a <sup>1</sup>	23.4%	21%	25%	Not on track
	Increasing the proportion of recycled/ secondary aggregates to 25%	22.6%	20.3%	n/a <sup>1</sup>	25%	Not on track
	Reducing mains water consumption by 20%	110.4	82.3	71.7	65.8	On track
Sustainable Communities	Increasing the proportion of employees covered by certified management systems (e.g. ISO 9001, etc)	89.4%	95.6%	99.2%	100%	On track
	Increasing tonnage (sites) covered by H&S management systems (OHSAS 18001, ISO 45001, etc)	29.2%	64.9%	63.4% (57%)	>64.9%	Not on track
	Reduction of industry Lost Time Injury frequency rate (LTIFR)	n/a <sup>1</sup>	9.80	5.73	<9.80	Achieved
	Maintain percentage of relevant sites with formal local liaison schemes	2.5%	28.1%	22.9%		No target

<sup>1</sup> Data not reported due to data insufficiency or due to introduction of KPI after baseline or Target-setting years.

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British Precast is the trade association for precast concrete manufacturers and members of the supply chain.

British Precast is affiliated to the Mineral Products Association, the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and silica sand industries.

[www.britishprecast.org](http://www.britishprecast.org)

## British Precast

The Old Rectory, Main Street, Glenfield,  
Leicestershire LE3 8DG

Tel: 0116 232 5170

Email: [info@britishprecast.org](mailto:info@britishprecast.org)

Web: [www.britishprecast.org](http://www.britishprecast.org)

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