

The CO₂ challenge and how we tackle it



Our cement, concrete, asphalt and aggregates are essential to the UK's infrastructure needs. With demand set to increase by 2050, it is vital we reduce the CO₂ emissions of our operations and pave the way for a net zero carbon future.

Did you know?

- After water, concrete is the most widely consumed material in the world.

On a whole-life cycle performance basis, concrete is a low carbon product compared to most other construction materials including timber. This is thanks to its:

- Durability: it resists weather, chemicals, abrasion, fire and other types of degradation.
- Thermal mass: the ability to absorb, store and release heat: modern concrete buildings can use 75% less energy.
- Recyclability: it is 100% recyclable.
- Absorption of carbon: through a process called 're-carbonation', it naturally absorbs CO₂ from the atmosphere, in particular during demolition, as fresh concrete surfaces are revealed.

As well as developing our own strategy to achieve net zero by 2050, as a member of the Mineral Products Association we have also contributed to the creation of an industry-wide roadmap that goes further, to beyond net zero by 2050.

Our current CO₂ goals are:

- Net zero carbon cement produced from our Padeswood works by the end of 2027.
- Net zero carbon concrete by 2050.
- 100% of our car fleet and 50% of our van fleet will be fully electric or hybrid by 2025.
- A 15% reduction by 2030 (baseline: 2016) of direct emissions from all our activities, called scope 1 emissions.
- A 65% reduction by 2030 (baseline: 2016) of indirect emissions from the electricity, heat, cooling we buy, known as scope 2 emissions.
- A 15% reduction by 2030 (baseline: 2019) of our other indirect emissions – for example, from delivering to customers – called scope 3 emissions.

Our levers to achieve these goals are:

- Investment and implementation of carbon capture, utilisation and storage (CCUS) technologies. A project at Padeswood, planned to be operational by the end of 2027, aims to capture up to 800,000 tonnes of CO₂ per year.
- The development of low carbon cement alternatives, for example using high limestone cement and Regen GGBS in concrete.
- The adoption of alternative fuels:
 - We aim to increase their use to 80% of the fuel mix at all our cement kilns by 2025.
 - A successful trial of the world's first net zero fuel mix on the kiln at Ribblesdale cement plant could, in the future, lead to the elimination of nearly 180,000 tonnes of CO₂ a year at Ribblesdale alone.
 - We are collaborating with Swansea University to generate hydrogen from electrolysis at our Port Talbot Regen plant.
 - We are trialling alternative fuel mixes within our aggregates and asphalt operations.
- Investing in re-carbonation processes to use captured carbon as part of the circular economy. For example, using CO₂ instead of water to cure concrete.
- Energy efficiency improvements and digitalisation, the process of using smart solutions to enhance our operations.
- Procurement and utilisation of zero carbon electricity.