



# Recycled Products in Precast

*- can they be used?*



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## Recycled Aggregates

Approximately 275 million tonnes of aggregates are used each year in the UK as raw construction materials with around 70 million tonnes derived from recycled aggregates.

The UK has a dwindling natural reserve of sand and aggregates for use in construction and the recycling of construction, demolition and excavation waste was identified to offer a solution to the shortage in supply of virgin construction materials. In the UK alone 25% of all aggregate demand is now fulfilled with recycled aggregates.



There is scope for these environmentally friendly options to be expanded even further. Potential for obtaining additional supplies already exists in construction, demolition and excavation wastes that are not currently being recycled and are being sent to landfill.

## Sustainability in Precast

### **Reduces the amount of materials used and the toxicity of waste materials.**

Precast concrete can be designed to optimize or lessen the amount of concrete used. Industrial wastes such as slag cement and silica fume can be incorporated into the mix, reducing the amount of cement, which in turn reduces the CO<sup>2</sup> emissions. As a manufactured product created under controlled conditions in the plant, precast concrete generates low amounts of waste and the waste generated has low toxicity.

### **Reuse and repair products**

Precast concrete panels can be reused when buildings are expanded. Concrete pieces from demolished structures also can be reused in other applications.

## Recycle and use products with recycled content

The British Standards which govern the manufacture of precast products set performance criteria for products irrespective of individual components. Many precast products (for example, block pavers, and aggregate concrete blocks) can therefore incorporate a high recycled content within both the aggregate and the cement binder without affecting the end product performance. Approximately 25% of aggregates used in the precast sector are recycled or from secondary sources. The sector has set a target to increase the use of additional cementitious materials. Precast products can often be re-used in their entirety.



## Precast Concrete Production

The production of precast concrete has many environmental benefits, including:

- Less material is required because precise mixture proportions and tighter tolerances are achieved.
- Waste materials are more likely to be recycled.
- Hardened concrete is recycled.
- Sand used for finishing surfaces can be reused.
- Moulds can be reused.
- Precast recycling systems capture virtually all processed water, slurry, aggregates or cement and these can be re-used in the production process.

