



REAPs

Resource Efficiency Action Plans 2013

Heavyweight Material Actions

The Clay Bricks and Clay Blocks, Precast Concrete and Ready-Mixed Concrete sectors are delighted to present our Resource Efficiency Action Plans (REAPs). The Action Plans include practical recommendations, actions and targets that will directly benefit industry by increasing the opportunity for recycling and reusing recovered materials.

Developing the industry led REAPs has involved the extensive collaboration of a diverse group of companies and bodies, including those involved in the production of products and their distribution, installation, recycling, reprocessing and disposal. The Action Plans have also benefited from support from WRAP, a not for profit, government funded company recognised in the UK and internationally as experts in resource efficiency and product sustainability.

The comprehensive involvement of organisations from across the construction sector is the key to the strength of the Action Plans. The stakeholders have worked together to improve the sustainability of these products and our built environment.

The framework used to establish the actions applied the impacts areas championed by the Green Construction Board "Greening the Industry" campaign to the lifecycle of a construction product as defined in EN 15804.

The Clay Bricks and Clay Blocks REAP covers all products manufactured in fired clay which are used in walling, landscaping and civil engineering applications. These products are manufactured by members of the Brick Development Association. We also have 60 sites and a capacity of around 2 billion bricks per year. A full copy of the Clay Bricks and Clay Blocks REAP can be found on the following link www.brick.org.uk

The UK Precast Concrete sector (represented by British Precast members) employs over 12,000 people at over 500 production sites and produces over 20 million tonnes of precast concrete products including concrete blocks, pipes, cladding, pavers, structural elements and more. The REAP is an extension of the precast sector sustainability strategy and is an important milestone in working with the downstream supply chain.

The UK Ready-Mixed Concrete Sector (represented by BRMCA members), comprises 800 plants producing around 14.2 million cubic metres of concrete per annum. Ready-Mixed Concrete is a factory-produced material, locally manufactured and transported in a flowable state ready for placing and compacting into any desired shape and size on site. A full copy of the REAP can be found at www.brmca.org.uk

Manufacturing Actions

At the manufacturing stage, it is essential that materials are used efficiently and any waste generation is minimised. The first step in using raw materials efficiently is to see if it can be replaced by: any recovered or recycled material, by-products from other sectors, or any combinations of these.

The extraction sectors associated with concrete and masonry products should maximise the efficiency of their processes and insure any material displaced is put to a beneficial use, or used within the restoration plan.

Brick

- Maximise the use of minerals extracted from a defined site.
- Evaluate the opportunities for long term stockpiling of significantly important raw materials – e.g. fireclay.
- Maximise the use of alternative and recycled materials.
- Develop a sector water strategy for manufacturing and associated guidance notes on best practice.
- Promote targets to minimise both production process waste and total manufacturing site waste sent to landfill.
- Develop case studies related to water recycling and rainwater harvesting including an assessment tool to evaluate the cost effectiveness of rainwater harvesting at site level.

Precast Concrete

- Development of case studies and best practice guides to help manufacturers to reduce overall energy consumption.
- Development of measures to target zero waste to landfill.
- Promotion of capture and storage of rain water on all production sites. Evaluate the potential for harvesting from roofs over a certain size.
- Determine at current costs the benefits of balancing lower cement contents against additional heated curing and develop a tool to calculate the breakpoint between the different approaches.
- Review all questionnaires and guidance in respect of the data capture in association with KPI data annual surveys. Focus on Energy, Waste, Water, Recycled Aggregates and Binders.

Ready-Mixed Concrete

- Gather data on volumes of concrete returned to manufacturing plant or redirected, and the causes of this (e.g. site readiness, over-ordering, incorrect concrete specification, quality).
- Report on water usage, set targets and assess potential for reduction.
- Reduce embodied carbon by optimising required performance with cement content, cement type and the use of low carbon cementitious materials.
- Match aggregate quality to required concrete quality where possible.

Logistics and Packaging Actions

The predominantly local supply network for heavyweight construction products means that delivery distances are short and therefore the energy used during haulage is relatively small. The main challenge is to balance load size whilst optimising fuel efficiency with the secondary aim of reducing empty miles.

Brick

- Investigate the opportunities for developing a standard 500 brick pack format for all new packaging installations.

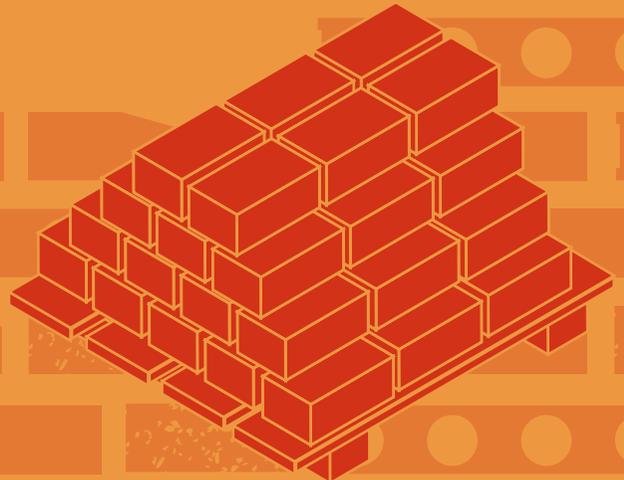
Brick and Precast Concrete

- Evaluate the benefits of extending the hours of delivery.
- Evaluate the resource efficiency impacts of "Brand Miles".
- Continue to promote driver awareness and training in relation to fuel efficient driving techniques.
- Consider the re-establishment of an industry pallets group and review the merits of developing a small range of standardised pallets.

Ready-Mixed Concrete

- Identify potential for improvements in ordering and delivery systems and measure influence on resource efficiency e.g. wastage rates.
- Gather data on truck fleet utilisation and opportunities for the producer to spread demand for concrete throughout the day and week.

balance load size
whilst optimising
fuel efficiency...



Design for Use and Reuse Actions

When designing a building it is important that the most appropriate materials are used depending on the function they perform and the location of the building or infrastructure project. An example of this may be specifying a product with a high recycled content in an area where there is a shortage of suitable materials, or by using low embodied impact materials that when part of a building lead to a higher operational impact.

Brick

- Develop CPD and general guidance on designing buildings based on standard brick dimensions.

Brick and Precast Concrete

- Develop standardised formats for Resource Efficiency BIM data.
- Improve the management of customer expectations by development of good workmanship CPD and the revision to PAS 70.

Brick, Precast Concrete and Ready-Mixed Concrete

- Promotion of Responsible Sourcing and guidance of how to maximise the benefits of having responsibly sourced products to the supply chain and links with UK Contractors Group and their register of responsibly sourced products.

Ready-Mixed Concrete

- Provide training and guidance on methods for efficient structural design to avoid over-specification (and hence material wastage).
- Develop guidance to encourage wider appropriate adoption of concrete “specified by performance”.

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Construction Process Actions

At the construction stage site waste management plans demonstrated a significant move forward in terms of diverting waste from landfill but progress is needed in eliminating wastage through a better understanding of the value of products.

Engaging with suppliers early and ensuring that materials are responsibly sourced is the first step within the construction stage to maximising efficiency of the project. This is then closely followed by good site management of materials reducing waste generation.

Brick

- Identify the training and guidance needed for different target audiences in relation to waste minimisation through on site actions.
- Evaluate the practicalities of providing pre blended packs of bricks to remove the need for mixing on site.

Brick and Precast Concrete

- Investigate the potential benefits of using site based pallets to minimise losses through storage and handling.
- Investigate actual wastage rates on construction sites in order to be able to set appropriate targets for waste reduction.

Ready-Mixed Concrete

- Development of better awareness of the actual value of the materials and how site management and best practice can be used to minimise wastage of materials on site.
- Deliver training on the importance of using the correct concrete, suitably placed, compacted and cured to ensure durability.



engaging with suppliers early and ensuring that materials are responsibly sourced...

Demolition Actions

The final (or in some cases the first) stage in the products life is demolition and at this point there are opportunities to recover and reuse materials as well as identifying the most appropriate routes for recycling the materials and feeding them back into the manufacturing stage as raw materials.

Brick and Precast Concrete

- Develop mortar specification to better allow the recovery of bricks and blocks at the end of a building's life and develop improved understanding of the practicality of recovering bricks and blocks for reuse from demolition sites.
- Identify best practice across Europe in the reuse and recycling of clay bricks, concrete blocks and precast concrete products.

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Brick, Precast Concrete and Ready-Mixed Concrete

- Provide practical support and technical information with respect to the "Demolition and Refurbishment Datasheets" (DRIDs) being developed by National Federation of Demolition Contractors.

Ready-Mixed Concrete

- Promote benefits and provide information on resource efficiency benefits and circumstances where foundations or structural concrete frames of buildings can be refurbished or reused.
- Promote and identify best practice in recycling concrete aggregate. There is limited scope for recovery of ready mixed concrete components for reuse, with most being crushed for recycled aggregate use.



Developed under the leadership of the Construction Products Association, Resource Efficiency Action Plans focus on the key construction product categories. In addition to Clay Bricks and Clay Blocks, Precast Concrete and Ready-Mixed Concrete, Action Plans are in place for Plasterboard, Windows, Joinery, Flooring, Rigid insulation, Ceiling tiles, and Composites sectors.

Creating an Action Plan brings together stakeholders from across the construction supply chain to identify and prioritise actions to work towards reducing the overall environmental impact of construction materials.

This collaborative approach, underpinned by evidence based research, identifies practical recommendations, actions and targets that deliver upon industry commitments and Government targets. Key bodies that have facilitated this REAP initiative are Amec, BRE, Ceram and WRAP.

REAPs

Resource Efficiency Action Plans 2013



www.brick.org.uk
@BricksUK



www.brmca.org.uk
@Mineral_Product



www.britishprecast.org
@British_Precast



www.wrap.org.uk
@WRAP_UK

The complete REAPs can be found in the websites above.