The ConGlassCrete Projects: High Value Use of Waste Glass in Construction

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## ConGlassCrete Partners

### INDUSTRIAL AND IN-KIND FUNDING ORGANISATIONS

<table>
<thead>
<tr>
<th>FUNDING BODIES</th>
<th>Academic</th>
<th>Glass Industry</th>
<th>Trade Association</th>
<th>Environmental Body</th>
<th>Cement &amp; Concrete</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRAP, University of Sheffield</td>
<td>CCC, BRE, Chris Coggins, Columbia University</td>
<td>GTS, Northern Cullet, Valpak Ltd, Mac-Glass</td>
<td>BCA, UKQAA, British Glass</td>
<td>Wales Environmental Trust, Business Environmental Partnership</td>
<td>Aggregate Industries, Appleby Group, BRE Certification, Conways Concrete, CRH Group, Forticrete, H&amp;H, Marshalls Mono, Stowell Concrete, Tarmac Group, Trent Concrete</td>
</tr>
</tbody>
</table>
ConGlassCrete I and II

Overall Objectives

- **ConGlassCrete I**: To conduct applied and fundamental research in partnerships that enable the use of waste glass in precast concrete products

- **ConGlassCrete II**: to conduct applied and fundamental research leading in partnerships that lead to pre-certification certificates for glass powder and selected conglasscrete products
CGC Projects Overview

CONGLASSCRETE PROJECTS

Assessment of Waste Glass Streams

Post-consumer, plate, automotive, lighting, fibres

Measurement of Contamination (selectively)

Pozzolanic Reactivity

Effect of: Source, Colour, Contamination

Certification of glass as pozzolan for concrete to BS EN450

20 Full-scale industrial projects

Effect of: Source, Colour, Contamination

Paving slabs, cast stone, blocks, pavers, flags, Krebs, roof tiles

Certification of concrete products containing glass

Alkali-Silica Reaction (Industrial and laboratory study)

Clean sources

Contaminated sources

Effect of: Colour, Grading, Suppressants

Test methods: ASTM C1260 & C227, BS 812-123

Bottle bank, pub and club collection

CGC I

CGC II

Overlap of CGC I & II

ConGlassCrete – High Value Use of Waste Glass in Concrete Products
CGC I: Main Areas of Work

- 20 collaborative industrial sub-projects;
- Laboratory studies on glass ASR reactivity;
- Architectural glass aggregate concrete finishes;
- SEM analysis of glass in concrete;
- Newsletters;
- Industrial Subscribers;
- Online glass literature database
- Journal/Conferences papers and Reports
CGC II: Main Areas of Work

- Evaluation of waste glass as a concrete Pozzolan;
- Development of a usable specifications for ground glass as a partial cement replacement;
- Pre-certification of ground glass as a concrete Pozzolan;
- Pre-certification of concrete products containing glass Pozzolan and aggregate;
- Journal/Conference papers and Interim Reports
Dissemination

- 5 Steering Group Meetings (18-30 attending)
- 6 Newsletters
- 3 Conference papers
- 3 Journal papers
- Regular updates to the web-site (www.wrap.org.uk/conglasscrete)
ConGlassCrete – High Value Use of Waste Glass in Concrete Products
ConGlassCrete – High Value Use of Waste Glass in Concrete Products

Web Site

ConGlassCrete Projects

What’s New

ConGlassCrete Dissemination Seminars will be held in February and March 2004. Please click here to register.

A paper Waste Glass as Concrete Aggregate and Pozzolan was published in CONCRETE January 2004.

Overview

Two WRAP-funded waste glass research projects worth some £1.2m are being undertaken by the Centre for Cement and Concrete (CCC) at the University of Sheffield. These projects, known as the ConGlassCrete I & II Projects, are examining the use of waste container, plate, windscreen, lightbulb and fibre glass streams as alternative coarse and fine aggregates and cement replacements in concrete.

The projects have 26 participating partners across the UK in the waste glass collection and processing, environmental protection and concrete products sector.

Projects

As well as an extensive laboratory research programme, the CCC are conducting some 29 technical projects in collaboration with their 8 large precast concrete partners across the country from the Scottish Midlands to the south of England.

Interaction

A main aim of the ConGlassCrete Projects is information dissemination and providing assistance to commercial bodies interested in our work. To this end, we are providing a free, no obligation subscription to our information and support services.
# Project Subscribers

<table>
<thead>
<tr>
<th>CORE BUSINESS</th>
<th>No. OF COMPANIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass Collection</td>
<td>43</td>
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<tr>
<td>Glass Processing</td>
<td>33</td>
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<tr>
<td>Portland Cement</td>
<td>21</td>
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<tr>
<td>Cementitious Materials</td>
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<tr>
<td>Concrete Aggregates</td>
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<tr>
<td>Ready Mixed Concrete</td>
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<tr>
<td>Precast Concrete</td>
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<td>Local Authority</td>
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<td>Education</td>
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<td>Research and Development</td>
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<tr>
<td>Consultant Engineer</td>
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<tr>
<td>Waste Legislation</td>
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<tr>
<td>Environmental</td>
<td>16</td>
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<tr>
<td>Others</td>
<td>31</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>494</strong></td>
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</tbody>
</table>
National Influence

Subscribers

Partners
ConGlassCrete – High Value Use of Waste Glass in Concrete Products