

## Diamondcrete™



Designed by Aggregate Industries the products in the concrete range are tough, rugged and will provide enhanced performance in environments where aggressive chemical and abrasive elements are present.

Where later access for maintenance is restricted or impossible the same properties enable an exceptionally long service life.

Where your key project requirements are superior durability, high strength and a quick turnaround time, Diamondcrete will provide you with a high performance product that will achieve the required compressive strength in as little as 24 hours. Where compaction by conventional methods is not practical Diamondcrete may, by arrangement, be supplied as a self compacting concrete to consistence class SF1.

Diamondcrete provides contractors and specifiers with a high performance, secure fast track solution to many of the more challenging aspects of construction such as:

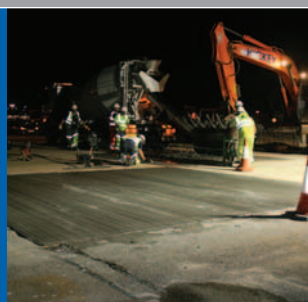
<b>Rapid access</b>	Diamondcrete RA
<b>Durable paving</b>	Diamondcrete DP
<b>Chemical resistance</b>	Diamondcrete AE
<b>Rapid drying</b>	Diamondcrete RD
<b>Heat resistance</b>	Diamondcrete HT
<b>High abrasion resistance</b>	Diamondcrete WR

Diamondcrete is based on carefully selected, controlled binders and admixtures in conjunction with aggregates selected in accordance with the proposed end use; it is distinguished by a number of enhanced and special technical properties.

### Diamondcrete when correctly specified will deliver:

- Very low permeability providing enhanced resistance to chloride ion penetration and aggressive substances such as sulphates or acids
- High impact resistance & low permeability, readily satisfying the requirements of the Food Safety Act standards for floors
- High early strength, 28 day characteristic in 24 hours
- Very rapid access, full set in 2 hours and up to 35N/mm<sup>2</sup> after 8 hours
- High volume stability reduced shrinkage

- High flexural strength permitting reduction in section thickness when compared to traditional concrete
- High mix cohesion enables pumping of low cement content concretes
- Earlier access for power float operations
- Low water cement ratio leading to rapid drying allowing application of vapour permeable membranes i.e. resins and vinyls in a fraction of the time
- Available in strengths up to 100 N/mm<sup>2</sup> and a range of colours it is as easy to place and finish as conventional concrete.



# Diamondcrete™

## Applications

Diamondcrete can be utilised in all forms of construction in residential, transport infrastructure, office and administrative buildings as well as materials recycling, petrochemical, military engineering, hotels, schools and hospitals.

Diamondcrete can be tailored to the particular challenges of your contract and has yet to find a limit to the application of this technology.

## Manufacturing standard

Diamondcrete conforms with the requirement of European standard BS EN 206-1:2001 concrete – Part 1: Specification, performance, production and conformity and with the requirements of BS8500-1 and BS 8500-2 2006.

As with all Aggregate Industries' products Diamondcrete is manufactured under independently monitored third party quality assurance schemes in accordance with ISO 9001, and with factory environmental compliance to ISO 14001.

## Typical performance and technical data

Available in strength classes from:	C70 to C100 higher grades are possible
Flexural strength from:	4 to 10 N/mm <sup>2</sup>
High early strength:	>30 N/mm <sup>2</sup> at 24 hours
Very high early strength:	>35N/mm <sup>2</sup> after 8 hours

Available in most consistence classes up to SCC class SF1

## Installation standard

The Diamondcrete range is intended to be placed by conventional skip, pump or direct placement methods.

Full compaction will be achieved by the correct application of standard vibrating equipment, using other methods may not allow the products to achieve their full potential.

## Curing

It is essential to use a curing membrane.

Diamondcrete has an exceptionally low tendency to bleed; this characteristic means the surface of the element must be protected against moisture loss during casting by preventing the direct effects of wind and sun on the surface.

Immediately the finishing operation is complete final curing should commence and may be accomplished by the use of any recognised curing membrane with an efficiency index exceeding 90%.

Except in cases where rapid access to paving is required curing should continue for at least 7 days.

## Remarks

Excessive drying rates must be avoided during the first 24 hours.

Where it is intended to lay floor coverings on the finished surface, measurements and experience have shown that this is possible in a much reduced time when compared to standard concrete. Concrete recommend that in all cases the residual moisture content is established before laying sheet vinyl or other impermeable coverings.



## Sustainability and local sourcing

**Responsible sourcing:** Aggregate Industries is the first company in the world to achieve a BES 6001:2008 Responsible Sourcing Certificate from BRE Global. Products are assessed on:

- quality management
- environmental management
- health and safety management
- greenhouse gas emissions
- minimising raw material usage
- labour practice
- biodiversity
- community engagement.

**Energy use:** Aggregate Industries is at the forefront of sustainability and has committed to reduce carbon emissions by 20% by 2016.

**Manufacturing location:** produced in the UK, with locally sourced materials under strict environmental and social legislation, for local supply.

**Recyclable:** the product has a life expectancy of up to 120 years and is fully recyclable.

## Key aggregate and recycled content

This product may be formulated to be up to 50% better for the environment than the equivalent traditional concrete. Concrete are unique in being able to quantify this difference. Wherever available, a recycled or secondary aggregate may be selected to achieve a reduced environmental impact and increased green guide rating.

The raw materials used in the manufacture of the binders are obtained from processes where they form from a co-product.

## Policies

Aggregate Industries' policies on the environment and community, health and safety and sustainable solutions for different product applications can be viewed on our website [www.aggregate.com](http://www.aggregate.com)

## COSHH data

Full COSHH data on the concrete range of products is available on request.

## Technical support

Detailed guidance and assistance with the preparation of specifications and use of concrete products is available through the sales offices. A free technical service is also available.

**Call our concrete technical services at the nearest sales location to your contract.**

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