

# Product Guide

Speciality Materials  
for Better Concrete



**G**race Construction Products, a core business of W. R. Grace & Co. is a worldwide leader in the construction products industry. Grace's concrete admixtures, cement additives, waterproofing systems, fireproofing and masonry products strengthen and protect the world's most important structures. Designers constantly demand improved structural integrity with lower long-term maintenance costs. To meet these requirements, Grace uses its technical expertise and market knowledge in the development of value-added product solutions for the construction industry.

For more than fifty years, Grace Construction Products has improved the quality of concrete by developing concrete admixtures recognized for their workability, strength and durability enhancement and the chloride resistance they impart to concrete. Grace is committed to raising the standards for the industry through the development of innovative new products and practices to meet the needs and demands of its customers.

Grace Construction Products also delivers a level of service and support for its products that is unique in the industry. Grace customers credit the assistance of their Grace sales representative as the single most important service the company offers, providing support throughout all phases of a project. With more than 140 plants and sales offices around the world, Grace offers extensive field and laboratory technical service to assist customers in producing consistently high quality concrete.

**GRACE**  
Construction Products

## Concrete Admixtures

- Water Reducers/Plasticisers
- Mid-Range Water Reducers/Plasticisers/Superplasticisers
- High Range Water Reducers/Superplasticisers
- Air Entraining Agents
- Accelerators
- Fibres
- Corrosion Inhibitors
- Set Retarders
- Shrinkage Reducing Admixtures
- Flowable Fill Additive
- Permeability Reducers/Dampproofers
- Environmental Aid
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## Surface Treatments

- Mould Release Agents
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## Specialty Materials

- Bonding Agents

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## Concrete Admixtures

| Product  | Applications  | Addition Rates                                    | Standards  | Description  |
|--|---|---|--|--|
| <b>Water Reducers/Plasticisers</b>                             |   |   |  |  |
| WRDA® P4   | All structural concretes, ready mix, blocks, precast. Obtains high slump and workability retention in high temperature conditions.  | 200 ml - 840 ml per 100 kg cement                 | BS 5075: Part 1<br>ASTM C 494, Types A and D                       | Modified lignosulphonate based water reducing plasticisers. Limited set retardation, excellent slump retention. Dark brown liquid. Chloride content: nil. Air entrainment: 1%-2%.  |
| WRDA® P7   | All structural concretes, precast, ready mix, blocks. Effective at all cement levels. Excellent slump retention in high temperature conditions.   | 120 ml - 360 ml per 100 kg cement                 | BS 5075: Part 1<br>ASTM C 494, Types A and D                       | High performance plasticiser based on synthetic polymers and lignosulphonate blends. Dark brown liquid. Chloride content: nil. Air entrainment: 0.5%.  |
| WRDA® P10  | All structural concretes, precast, ready mix, blocks. Suitable for use with blast furnace slag concretes and those containing PFA.  | 200 ml - 360 ml per 100 kg cement                 | BS 5075: Part 1  | High performance, liquid plasticiser/water reducer, based on a blend of both synthetic and naturally derived raw materials. Effective over a wide range of mix designs from low to high cement contents. Early and ultimate strengths improved when used as a water reducer. Chloride content: nil. Air entrainment: 0.5%. |
| <b>Mid-Range Water Reducers/Plasticisers/Superplasticisers</b> |   |   |  |  |
| Daracem® 55  | Mid-range concrete plasticiser formulated to produce concretes with dramatically enhanced finishing characteristics. Combines water reduction benefits of normal and high range water reducers, allowing for the ultimate control of the concrete placing and finishing properties while maintaining near neutral set properties. | 200 ml - 800 ml per 100 kg cement                 | ASTM C 494, Type A   | An aqueous solution of complex compounds including patented dispersing and patented finishability agents that provide superior performance. Dark brown, low viscosity liquid. Chloride content: nil.   |
| WRDA® 90   | Universal applications in ready mix concrete and structural civil works. Ideal high performance water reducer and strength improver over a wide range of cement contents.   | 300 ml - 800 ml per 100 kg cement                 | BS 5075<br>ASTM C 494, Types D and G                               | An aqueous solution of modified organic polymer compounds with excellent dispersing properties to improve cement hydration.  |
| <b>High Range Water Reducers/Superplasticisers</b>             |   |   |  |  |
| Daracem® SP1   | High workability concrete with high early strength. Precast, gROUTS.  | 500 ml - 2000 ml per 100 kg cement                | BS 5075: Part 1<br>BS 5075: Part 3<br>ASTM C 494, Types A, D and F | Superplasticiser, based on polymeric sulphonate. Dark brown liquid. Cement range: 250-550 kg/m <sup>3</sup> . Chloride content: nil. Air entrainment: nil.   |
| Daracem® SP5   | Precast, high-early strength concrete.  | 1000 ml - 2000 ml per 100 kg cement               | BS 5075: Part 3<br>ASTM C 494, Type F                              | Superplasticiser based on melamine sulphonate polymer. Chloride content: nil.  |
| Daracem® SP6   | Superplasticiser for universal applications. Structural, civil works, ready mix, microsilica concrete. Excellent slump retention properties.  | 400 ml - 3000 ml per 100 kg cement                | BS 5075: Parts 1 and 3<br>ASTM C 494, Types A, D and G             | High performance superplasticiser which provides excellent slump retention. Chloride content: nil.   |
| <b>Air Entraining Agents</b>                                   |   |   |  |  |
| Darex® AE3P  | All concrete mortar blocks, bricks, and mixtures including PFA.   | 140 ml - 500 ml per 100 kg cement                 |  | Air entraining agent based on synthetic materials. Chloride content: nil.  |
| <b>Accelerators</b>  |   |   |  |  |
| Polarset®  | Non-corrosive, non-chloride accelerating admixture for concrete. Accelerates cement hydration resulting in shortened setting times and increased early age strengths, especially in cooler temperatures. Can be used in concrete containing embedded metals.  | 500 ml - 2000 ml per 100 kg cement                | ASTM C 494, Type C   | Non-corrosive, non-chloride accelerating admixture. Pale orange liquid. Chloride content: nil.   |
| <b>Fibres</b>  |   |   |  |  |
| Grace® MicroFiber®   | Concrete where plastic shrinkage cracking may be a problem. Concrete which requires improved durability.  | 600 g/m <sup>3</sup><br>1 bag/m <sup>3</sup>      | ASTM C1116   | Reduces plastic shrinkage cracking. Provides greater impact and abrasion resistance.   |
| <b>Corrosion Inhibitor</b>                                     |   |   |  |  |
| DCI® S   | All concretes containing steel reinforcement, post tensioned concrete, prestressed concrete, etc. Concrete in contact with chlorides from de-icing salts or a marine environment. Parking structures, bridge decks, piers, sea defences, etc.   | 10 litres - 30 litres per m <sup>3</sup> concrete | BBA Agrément Certificate No. 96/3232                               | Liquid-based corrosion inhibitor for concrete or mortar, which chemically inhibits the corrosive action of chlorides on reinforcing steel and prestressing tendons in concrete. Chloride content: nil.   |
| <b>Set Retarders</b>   |   |   |  |  |
| Daratard® 17   | To be used wherever a delay in the setting time is required to ensure sufficient placement, vibration, or compaction time.  | 130 - 520 ml/100 kg cement                        | ASTM C 494 Type B & D<br>AASHTO M 194 Type B & D                   | Offsets effects of hot weather or extended haul times. Use to delay and control the setting time of concrete resulting in improved hardened properties.  |

## Concrete Admixtures

| Product                                   | Applications  | Addition Rates   | Standards                            | Description  |
|---|---|--|--------------------------------------|--|
| <b>Shrinkage Reducing Admixtures</b>      |   |  |                                      |  |
| Eclipse™                                  | Concrete members or structures where drying shrinkage results in cracking or unacceptable prestress losses.   | 2.5 to 10 litres per m <sup>2</sup>                    |                                      | Dramatically reduced drying shrinkage for concrete of all varieties.   |
| <b>Flowable Fill</b>                      |   |  |                                      |  |
| DaraFill®                                 | Used in the production of engineered Flowable Fill or Controlled Low Strength Material (CLSM) that is highly flowable, volume stable, and excavatable in the future.      | Typically 90 ml/m <sup>3</sup><br>1 egg/m <sup>3</sup> |                                      | DaraFill is a viscous solution of organic compounds used in cementitious backfill mixtures. Packaged in wax green capsules, it will, by design, generate up to 15% - 30% air. Chloride content: nil. |
| <b>Permeability Reducers/Dampproofers</b> |   |  |                                      |  |
| Darapel®                                  | Permeability reducing liquid admixture for use in concrete. Darapel forms an internal barrier against water transmission in mixes used for ready mix or precast concrete. | 200 ml - 1000 ml per 100 kg                            |                                      | A stearate-based liquid admixture, that reduces permeability absorption (e.g. per ASTM C 642) and efflorescence. Chloride content: nil.  |
| <b>Environmental Aid</b>                  |   |  |                                      |  |
| Recover® C                                | Ready mix, precast, all concrete/mortar production facilities.  | 1.5 - 3 litres per truck                               | BBA Agrément Certificate No. 93/2910 | Wash water system for the elimination of truck wash out of cementitious materials. Green coloured liquid. Chloride content: nil.   |
| <b>Mortar Admixtures</b>                  |   |  |                                      |  |
| Mortard® 79/5                             | Retarded mortar systems. Used with cement/lime/sand or cement/sand mixes  | 1000 - 3000 ml/100 kg cement                           |                                      | Liquid mortar retarder for use in ready mixed mortars.   |
| Mortair® D                                | Air entrainer/plasticiser specific for retarded mortars   | 50 ml - 250 ml per 100 kg cement                       |                                      | Highly stable air entrainer for use in retarded mortars. Minimal air loss on standing. Optimum retention of workability. Minimum bleeding and segregation.   |

## Surface Treatments

| Product                     | Applications                        | Coverage                        | Standards          | Description   |
|-----------------------------|-------------------------------------|---------------------------------|--------------------|---|
| <b>Mould Release Agents</b> |                                     |                                 |                    |   |
| Darakote® SS                | Suitable for all types of formwork. | 5.0m <sup>2</sup> per litre     |                    | Mould release agent based on low hazard, highly refined blend of oils selected for their desirable safety properties. Flash point: 140°C. |
| <b>Curing Membranes</b>     |                                     |                                 |                    |   |
| Darakote® 90WX              | All types of structural concrete.   | 4.5-5.5m <sup>2</sup> per litre | ASTM C 309, Type 1 | Wax in water emulsion curing compound. Non flammable. Pigmented versions available.   |

## Speciality Materials

| Product               | Applications  | Addition Rates               | Standards | Description   |
|-----------------------|---|------------------------------|-----------|---|
| <b>Bonding Agents</b> |   |                              |           |   |
| Daraweld® BA9         | Cementitious repairs, bonding concrete, floor screeds, water-proof tanking renders. Cement injection, grouts, tiles and mortar. | 5-25 litres per 50 kg cement |           | Styrene butadiene resin (SBR) bonding agent. White liquid. Chloride content: nil. Stable under wet alkaline conditions. |

## Masonry Products

| Product                 | Applications   | Addition Rates                     | Standards | Description   |
|-------------------------|--|------------------------------------|-----------|---|
| <b>Block Admixtures</b> |  |                                    |           |   |
| DBM® A                  | Concrete blocks, pavers, bricks, tiles, etc. for accelerating strength gain. Not suitable for mixes/products containing embedded metals. | 800 ml - 1000 ml per 100 kg cement |           | Dark amber liquid. Accelerating water reducing plasticiser for semi-dry mixes. Chloride content: approx. 18% anhydrous calcium chloride.                        |
| DBM® E                  | Concrete blocks, pavers, brick tiles, etc. Semi-dry mixes where enhanced color and reduced incidence of efflorescence are required.      | 200 ml - 400 ml per 100 kg cement  |           | Liquid based product for use in semi-dry concrete. Contains selected materials which dramatically reduce the incidence of efflorescence. Chloride content: nil. |
| DBM® S                  | Semi-dry mixes blocks, pavers, bricks, tiles, etc. For use with low slump, vibration intensive, rapid demoulding mixes.                  | 125 ml - 325 ml per 100 kg cement  |           | Liquid based product. Chloride content: nil. Plasticising admixture for semi-dry mixes.   |

## KEY CONCRETE PRODUCTS SALES LOCATIONS

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