



New Guard Coatings Group

A global reputation to protect.

The information herewith is given with the best of New Guard Coatings Group knowledge.

Rights are reserved to change and update the data without notice.

This information is not exhaustive and it is the user's responsibility to ensure that this data sheet is the most current by contacting their local New Guard Coatings Group branch prior to using the coating/product.

www.newguardcoatings.com

NORTH • SOUTH EAST • MIDLANDS • NORTH WEST • HULL • SCOTLAND

Fosroc® Supercast CWA (Crystalline Watertight Additive)



constructive solutions

Crystalline growth, crack and capillary sealing, concrete admixture suitable for use in Type B (Integral) watertight concrete construction as defined in BS 8102: 2009

Uses

- Production of watertight concrete for above and below ground level conditions
- Concrete for liquid retaining / excluding structures
- Concrete for aggressive exposure classes

Advantages

- Reduces porosity and permeability
- Promotes self-healing of static cracks up to 0.4mm
- Suitable for structures subjected to sustained hydrostatic pressure
- Increases water resistance and corrosion resistance
- Chloride free. Ideal for concrete containing embedded steel
- Pre-bagged powder for easy dispensing
- Easily dispersed throughout concrete mix
- BBA accredited, certificate no. 21/5849
- Can form part of a complete waterproofing solution in conjunction with the Fosroc range of membranes and drained cavity systems.

Description

Supercast Crystalline Watertight Additive is designed for use as an integral waterproofing admixture for ready mixed concrete. It is based on a blend of Portland cement and selected active additives, supplied as a grey chloride-free powder. Supercast Crystalline Watertight Additive is supplied, pre-weighed in water soluble bags, for easy dispensing.

Properties

| | |
|---------------------------------|------------------------|
| Appearance: | Grey powder |
| Water soluble chloride content: | 0.03% |
| Na ₂ O equivalent | 9.51% by mass of admix |

Capillary Absorption to EN 480-5

<50% by mass of control mix at 7 days
<60% by mass of control mix at 90 days

Water Vapour Resistivity

| | |
|------------------------|--|
| Control Concrete | 1292 MN·s·g ⁻¹ ·m ⁻¹ |
| Concrete with Additive | 1499 MN·s·g ⁻¹ ·m ⁻¹ |

Water Permeability (water cement ratio 0.45)

| | |
|------------------------|--|
| Control Concrete | 3.74 x 10 ⁻¹³ m·s ⁻¹ |
| Concrete with Additive | 3.35 x 10 ⁻¹³ m·s ⁻¹ |

Above properties determined by lab testing when dosed at 1.17% by weight of cement. Note: results obtained from field trials may vary.



Specification Clause

The designated concrete elements shall incorporate Supercast Crystalline Watertight Additive in a design mix in accordance with the manufacturer's recommended information and placed in accordance with the Supercast Watertight Concrete Construction Guidelines. In accordance with good concrete practice: cure all concrete with Concre WB Clear. (75% curing efficiency) BS: 7542.

Compatibility with cements

Supercast Crystalline Watertight Additive is suitable for use with all types of Portland cements and combination materials such as fly ash, PFA, GGBS limestone fines and micro silica. Properly batched and mixed concrete containing Supercast Crystalline Watertight Additive has similar mechanical properties to that of an equivalent plain concrete with the same mix design and consistency.

Typical dosage

Typical dosage is 1 bag per cubic metre of concrete based a 350kg / m³ mix design (1.17% by weight of cement)

Where cement replacement materials are used in the concrete mix, the admixture dosage should be calculated on the total cementitious material content.



Fosroc® Supercast CWA (Crystalline Watertight Additive)



Usage Guidelines

The following are guidelines for use of waterproof concrete containing Supercast Crystalline Watertight Additive. These guidelines should be used in conjunction with those stated on the product BBA certificate, 21/5849.

1. The reinforcement design for the concrete structure must be designed to achieve a maximum through section crack width of 0.3mm although where there is evidence of increased risk due to a high or variable water table a through section crack width of 0.2mm may be stipulated. Refer to the guidance in BS EN 1992-3:2006 for further information.
2. The standard minimum sectional thickness is 200mm although a greater minimum thickness may be recommended for specific projects.
3. All standing water must be removed prior to concrete placement.
4. Smooth grout tight formwork should be used for wall construction and floor slabs placed onto either a grout check membrane or smooth concrete blinding.
5. The maximum area for a single concrete pour for a floor area is 400m² for which the aspect ratio should not exceed 2:1.*
6. The maximum aspect ratio for a single wall pour is 3:1 and this should not include more than two corners or changes of direction.*
7. The maximum pour length for capping beam construction is 10m and should include no more than two corners or changes in direction.*
8. All formwork should be left in place for a minimum of 24 hours. Formwork should not be removed until the concrete has sufficiently hardened in order that it can carry safely its own weight and any loads to which it is subjected. Following shutter strike exposed concrete surfaces (floor & wall) should be cured for up to 28 days with polyethylene sheet, wet hessian or Concure WB.
9. An integral kicker of between 150mm and 250mm in height should be formed with the base slab where watertight retaining walls are to be constructed. Kicker strips are completely unsuitable for watertight concrete construction. Kickerless construction carries an additional risk of water penetration that should be avoided or additional protective measures applied to mitigate the increased risk.
10. A 20mm wide x 5mm deep smooth rebate should be formed in the joint face of all construction joints (wall & floor) with at least 80mm concrete cover to an exposed face. Supercast SW20 waterstop should be continuously bonded with Supercast SWX which should be allowed to cure for at least 8 hours prior to

concrete pour. The Supercast SW20 must be butt jointed and not overlapped with any gaps filled with Supercast SWX.

11. Movement joints should be waterproofed with Supercast PVC Waterstop, project specific advice and details can be provided upon request.
12. The maximum pour length for capping beam construction is 10m and should include no more than two corners or changes in direction. Formed joints should be made watertight using Supercast SW20 bonded with Supercast SWX located a minimum of 80mm inside the externally facing sides of the joint following the advice given in item 9.
13. For construction of details such as pipe penetrations (floor and wall) and sealing tie bolt holes please refer to the relevant standard detail drawings available from Fosroc Technical Department upon request. Project specific detail drawings can be produced upon receipt of the construction drawings.

* This limitation may be exceeded where the structural engineer is satisfied that the designated maximum crack width will be achieved.

Instructions for use

Mix design

Concrete containing Supercast Crystalline Watertight Additive is normally supplied as ready-mixed concrete by any QSRMC or BSI registered producer. The concrete must have a minimum cement content of 350 kg/m³, be batched with a maximum water/cement ratio of 0.45 and have a consistency of S3 or greater. However to optimize performance of Supercast Crystalline Watertight Additive, it is recommended that a water/cement ratio of 0.40 or lower is utilised. Trials are recommended to ensure the desired performance characteristics are achieved.

Once the fresh concrete is mixed, further materials must not be added. The consistency of the concrete can be adjusted using a suitable water-reducing or super-plasticising admixture complying with BS EN 934-2: 2009, Tables 3.1 and 3.2, to ensure the maximum water/cement ratio of 0.45 is not exceeded.

Mixing and Placing

Supercast Crystalline Watertight Additive is added to the mixer at the correct dose prior to batching the concrete constituents. Where a superplasticiser is required, it is mixed in after the addition of Supercast Crystalline Watertight Additive. The resulting concrete should be mixed for a minimum of five minutes to ensure even distribution of Supercast Crystalline Watertight Additive throughout the concrete.



Fosroc® Supercast CWA (Crystalline Watertight Additive)



Concrete containing Supercast Crystalline Watertight Additive should be placed in the same way as normal concrete, in accordance with BS 8000-0:2014 and BS EN 13670: 2009

Curing

In line with good concrete practice: cure all concrete with Concure WB Clear. (75% curing efficiency) BS 7542.

Packaging

Supercast Crystalline Watertight Additive is available in tubs containing 6 x 4.1 kg units.

For supply information concerning other products referenced in this data sheet such as Supercast SW and PVC Waterstops refer to the relevant product data sheet.

Limitations

Concrete containing the product should not be placed at temperatures of 5°C or below.

Concrete containing Supercast Crystalline Watertight Additive must be properly compacted, avoiding honeycombing and voids, particularly in areas in the vicinity of joints.

Water resisting concrete incorporating Supercast Crystalline Watertight Additive must be designed to avoid crack width formation in excess of that stipulated in the guidelines above and in BS EN 1992-3:2006.

Joint designs other than those stipulated in the guidelines above should not be used with water resisting concrete incorporating Supercast Crystalline Watertight Additive without reference to the Fosroc Technical Department.

Concrete containing Supercast Crystalline Watertight Additive can meet the requirements for all grades defined in Table 1 of BS8102, however for Grade 3 (where control of water vapour is required) it will be necessary to provide a mix with a sufficiently low vapour permeability in combination with an adequate section thickness (see guidelines above). Consideration should also be given to its use in conjunction with Type A (Barrier) or Type C (Drained Cavity) where assessed external risks are too high or consequences of failure to achieve the required internal environment are unacceptable.

Storage

Supercast Crystalline Watertight Additive has a maximum shelf life of 12 months and should be stored in dry warehouse conditions between 5°C to 40°C. If this temperature range is exceeded in any way then advice should be sought from Fosroc Technical Department. The bags must be stored in sealed tubs to prevent water ingress.

Precautions

Health and safety

For further information consult the Product Safety Data Sheet available for this product.

Fire

Supercast Crystalline Watertight Additive is non-flammable.

Fosroc and Supercast are trade marks of
Fosroc International Limited



Important note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Services, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification of information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products, whether or not in accordance with any advice, specification, recommendation of information given by it. All Fosroc datasheets are updated on a regular basis. It is the user's responsibility to obtain the latest version.

Fosroc Limited

Drayton Manor Business Park
Coleshill Road, Tamworth,
Staffordshire B78 3XN. UK

www.fosroc.com

telephone:
+44 0 (1827) 262222

fax:
+44 0 (1827) 262444

email:
enquiryuk@fosroc.com



March 2021