

Supercast SW



Supercast SW
CI/SfB: n5
July 2001

Swellable waterstops for in-situ concrete

Uses

Integral sealing for construction joints in concrete cast in-situ.

Convenient and problem solving in situations where a conventional waterstop would require complex shuttering.

Typical uses include secant piled and diaphragm walled basements, pile caps and casting against old concrete. The Supercast SW range can provide simple solutions to detailing pipe entries, construction joints in the vertical plane and to kicker joints.

They can be linked to Supercast PVC waterstops to give an appropriate effective combination of waterstops which maintain network continuity.

Advantages

- Easy to install by adhesive bonding, masonry nailing or casting into joint faces
- Supercast SWX enables full integration of Supercast SW and Supercast PVC networks
- Supercast SW Adhesive can be applied to damp substrates
- Solves detailing problems in conjunction with Supercast PVC waterstops
- Swelling properties unaffected by long term wet/dry cycling
- Tolerant of salts in concrete and groundwater
- Sustains effective seal in wet conditions
- Highly adaptable to accommodate complex joint shapes

Standard compliance

Supercast SW10 and Supercast SW20 Plus are suitable for use in contact with potable water and are Water Regulations Advisory Service approved products.



Description

The Supercast SW range consists of swellable waterstops; Supercast SW formed sections and Supercast SWX gun applied paste.

A non swellable adhesive, Supercast SW Adhesive enables Supercast SW sections to be positively installed and linked into conventional Supercast PVC waterstop networks. This allows the use of Supercast PVC for expansion joints and Supercast SW for construction joints whilst maintaining an integrated waterproofing network.

Supercast SW sections are made from high performance synthetic elastomer strips.

Supercast SWX is a grey, elastomeric water-swellable gun applied paste.

The swelling action of the Supercast SW range is the result of contact between water and hydrophilic groups which are part of the Supercast SW polymeric structure.

These hydrophilic groups are not subject to extraction or loss of swelling performance by prolonged or repeated wetting. Expansion of the waterstop creates a positive pressure against the faces of the concrete joint, thus preventing water passing through the protected joint.

Design criteria

Supercast SW should be used to prevent the passage of water through non-movement joints in both new in-situ concrete and between new and existing concrete. Supercast SW increases in volume up to 300% and gives resistance to hydraulic pressure.

Supercast SW10 and SW20 Plus give resistance to a maximum hydraulic head of 50 metres and Supercast SW20 a maximum of 20 metres.

Swelling of Supercast SW in fresh concrete is minimal therefore maximising the positive pressure seal provided by the hydrophilic to the protected joint.

Supercast SW10 and Supercast SW20 are suitable for use in new concrete construction where steel reinforcement is continuous through the joint, minimising the possibility of movement occurring.

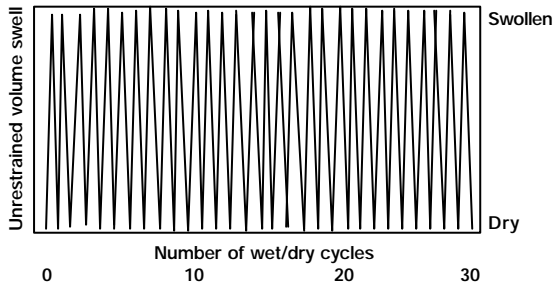
Supercast SW20 Plus is suitable for application between existing and newly placed concrete where there is little or no steel continuity and therefore some small movement may occur.

Supercast SW20 has a delayed swell action which helps to prevent pre-swell during wet site conditions (see limitations).

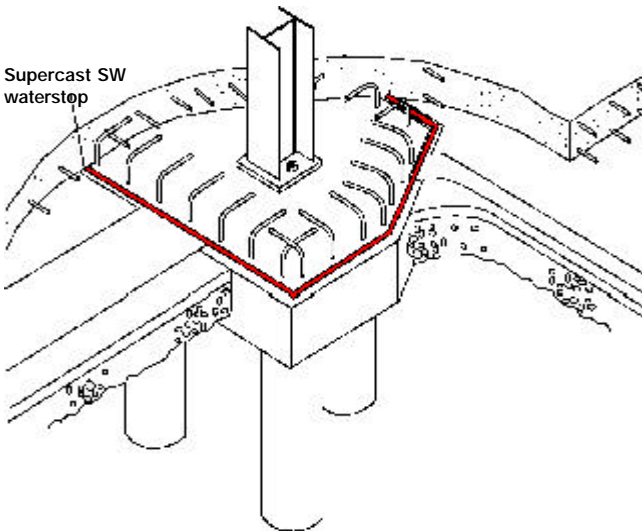
The minimum thickness of concrete cover required to accommodate pressure developed during the swelling process is 70 mm for Supercast SW10 and Supercast SW20, and 100 mm for Supercast SW20 Plus.

Properties

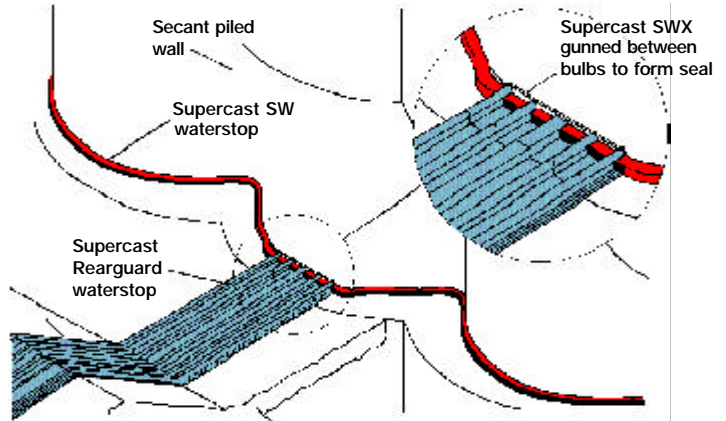
| | |
|---|--|
| Form: | Rectangular section elastomeric strips |
| Size: | |
| Supercast SW10: | 5 mm x 20 mm |
| Supercast SW20: | 10 mm x 20 mm |
| Supercast SW20 Plus: | 10 mm x 20 mm |
| Solids content: | 100% |
| Colour: | |
| Supercast SW10: | Black |
| Supercast SW20: | Red |
| Supercast SW20 Plus: | Black |
| Unrestrained volumetric expansion ratio: | Up to 300% |
| Application temperature range: | -5°C to 50°C |
| Service temperature range: | -30°C to 70°C |
| Hydrostatic pressure resistance: | Up to 50 metres (refer SW grade) |



Graphic showing reproducibility of volume swell with wet/dry cycling



Pile cap detail using Supercast SW waterstop



Supercast SW, Supercast SWX and Supercast Rearguard waterstops at secant pile wall and floor slab junction

Specification clauses

Supplier specification

Supercast SW

Water swellable polymeric hydrophilic waterstops (and attachments) where shown on the drawings, shall be Fosroc Supercast SW10 (or SW20 or SW20 Plus) obtained from Fosroc Limited, Coleshill Road, Tamworth, Staffs. B78 3TL. It shall be used in accordance with the manufacturer's current application instructions.

Performance specification

Supercast SW

Water swellable polymeric hydrophilic waterstop, where shown on the drawings, shall be made from a preformed elastomeric strip which can integrate into existing waterstop networks. It shall be free from rubber, bentonite or other inclusions. The waterstop shall have an unrestrained volumetric expansion of up to 300%. It must not deteriorate under prolonged wet/dry cycling. It must be able to withstand a hydrostatic head of up to 50 metres (refer SW grade). It shall be used in accordance with the methods given in the manufacturer's current data sheet.

Application instructions

Supercast SW may be positioned by bonding with Supercast SWX or Supercast SW Adhesive. The waterstop may be installed either into a groove cast in the concrete or directly onto the concrete surface. Nailing using masonry nails may also be used.

Limitations

Supercast SW should not be used for expansion joints or those subject to significant repetitive movements.

Supercast SW10 and SW20 should not be used in the construction of any concrete section of less than 150 mm thickness.

Supercast SW20 Plus should not be used in the construction of any concrete section of less than 200 mm thickness.

Supercast SW should not be used in locations which allow free unrestrained swelling or for free standing walls, such as bund or dwarf walls, where the swell pressure is sufficient to lift the wall from its foundations. Supercast PVC or SWX of minimum bead diameter 12 mm, should be preferred, dependent on the degree of seal required.

Exposed sections of Supercast SW10 and SW20 Plus on site must be protected from water. Supercast SW20 must not be fully immersed in water prior to concrete placement, however, Supercast SW20 can tolerate 3 days exposed to wet conditions on site.

Estimating

Pack sizes

| | |
|--|--|
| Supercast SW10: | 5 mm x 20 mm x 15 metre rolls |
| Supercast SW20 and Supercast SW20 Plus: | 10 mm x 20 mm x 5 metre rolls 10 rolls per carton |
| Supercast SWX: | 310 ml cartridge packed in cartons of 20 |
| Supercast SW Adhesive: | 380 ml cartridge packed in cartons of 20 |

Coverage

Supercast SW10 / SW20 / SW20 Plus

Usually single run of strip per joint

Supercast SWX: 6 mm diameter bead minimum 2 to 12 metres run per cartridge depending upon the surface texture of the concrete

Supercast SW Adhesive: 6 mm diameter bead minimum 2 to 14 metres run per cartridge depending upon the surface texture of the concrete

The above coverages are approximate and make no allowances for wastage.

Storage

Supercast SW

Store in original unopened cartons or bags in cool, dry conditions, away from sunlight.

Supercast SWX

Shelf life: 9 months

Store in original unopened cartridges or cartons in cool, dry conditions, away from sunlight.

Supercast SW Adhesive

Shelf life: 12 months

Store in original unopened cartridges or cartons in cool, dry conditions, away from sunlight.

Precautions

Health and safety

Supercast SW

There are no known health hazards associated with Supercast SW10, Supercast SW20 and Supercast SW20 Plus in normal use.

Supercast SWX

Supercast SWX may cause sensitisation by skin contact. Avoid contact with skin and eyes. Wear suitable gloves and eye/face protection. Use only in well ventilated areas.

Supercast SW Adhesive

No significant hazard. For additional information see relevant product safety data sheet.

Additional information

Ancillary materials

Supercast SWX

Form: Elastomeric water swellable paste

Colour: Grey

Tack-free time: Approximately 1 hour (20°C / 50% RH)

Cure rate: 3mm in 24 hours

Volume swell ratio: 200%

Concrete pour: 2 to 8 hours



Supercast SW Adhesive

| | |
|---------------------------------|--------------|
| Form: | Grey paste |
| Application temperature: | 5°C to 30°C |
| Maximum open time: | 30 minutes |
| Concrete pour: | 2 to 8 hours |

Adhesion: Can be used on damp concrete provided it is rag dry.

The above data represents typical values and should not be considered as a purchase specification.



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