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Agrément Certificate
17/5450
Product Sheet 1

FOSROC HYDRO-EXPANSIVE WATERSTOPS

SUPERCAST SW

This Agrément Certificate Product Sheet(1) relates to Supercast SW, comprising a flexible synthetic elastomer hydro-expansive waterstop and hydro-expansive mastic used to waterproof construction joints and penetrations in underground waterproof reinforced concrete structures.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Adhesion — the system has satisfactory adhesion to smooth, well-compacted, clean and dry concrete (see section 6).

Resistance to water pressure — the system provides an effective barrier to the passage of moisture from the ground (see section 7).

Durability — when fully enclosed in a concrete structure, the system will remain effective as a waterstop for the life of the structure in which it is incorporated (see section 9).

The BBA has awarded this Certificate to the company named above for the system described herein. This system has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 31 August 2017

John Albon – Head of Approvals
Construction Products

Claire Curtis-Thomas
Chief Executive

The BBA is a UKAS accredited certification body – Number 113.
The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk
Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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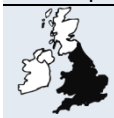
Regulations

In the opinion of the BBA, Supercast SW, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	**C2(a)**	**Resistance to moisture**
Comment:		The system provides an effective barrier to water under hydrostatic pressure. See section 7 of this Certificate.
Regulation:	**7**	**Materials and workmanship**
Comment:		The system is acceptable. See section 9.1 and the *Installation* part of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)**	**Durability, workmanship and fitness of materials**
Comment:		The system is acceptable. See section 9.1 and the *Installation* part of this Certificate.
Regulation:	**9**	**Building standards applicable to construction**
Standard:	3.4	Moisture from the ground
Comment:		The system provides an effective barrier to water under hydrostatic pressure, with reference to clauses 3.4.1(1)(2), 3.4.5(1)(2) and 3.4.7(1)(2) of this Standard. See section 7 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The system can contribute to meeting the relevant requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
Regulation:	**12**	**Building standards applicable to conversions**
Comment:		All comments given for the system under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1(1)(2) and Schedule 6(1)(2).

(1) Technical Handbook (Domestic).
(2) Technical Handbook (Non-Domestic).

The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation:	**23(a)(i)(iv)(b)(i)**	**Fitness of materials and workmanship**
Comment:		The system is acceptable. See section 7 and the *Installation* part of this Certificate.
Regulation:	**28(a)**	**Resistance to moisture and weather**
Comment:		The system provides an effective barrier to water under hydrostatic pressure. See section 9.1 of this Certificate.

Construction (Design and Management) Regulations 2015
Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See section: 3 *Delivery and site handling* (3.1, 3.2, 3.3 and 3.5) of this Certificate.

Additional Information

NHBC Standards 2017

In the opinion of the BBA, Supercast SW, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 5.4 *Waterproofing of basements and other below ground structures* (requiring proprietary waterproofing materials to comply with Technical Requirement R3).

Unless it can be demonstrated that the water table is permanently below the underside of the slab, the system must be used within a Type B(1) waterproofing protection system in combination with either a Type A(1) or Type C(1) waterproofing protection where Grade 3(1) protection is required and the below ground wall retains more than 600 mm (measured from the top of the retained ground to the lowest finished floor level).

(1) As defined in BS 8102 : 2009.

Technical Specification

1 Description

1.1 Supercast SW is for use in waterproofing construction joints and penetrations in concrete structures and comprises:

- Supercast SW20 — a red, flexible strip based on a synthetic elastomer that swells in contact with water. The product has dimensions of 20 mm wide x 10 mm thick
- Supercast SWX — a grey, elastomeric, gun-applied mastic that swells in contact with water, used to adhere Supercast SW20 to rough concrete substrates. The product can also be used as a waterstop around penetrations through waterproof concrete structures, eg pipes and cable ducts.

1.2 An ancillary item that may be used for installation of Supercast SW20 and included in this assessment is Supercast SW Adhesive, used to bond Supercast SW20 to smooth concrete substrates.

1.3 Other items which may be used with the system, but which are outside the scope of this Certificate include conventional PVC waterstops, for use at expansion joints. Details of suitable products may be obtained from the Certificate holder.

2 Manufacture

2.1 The system components are manufactured by typical batch processes and where applicable, extruded into strips and cut to length.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.3 The management systems of Fosroc Limited have been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by BSI (Certificate FM 00610).

3 Delivery and site handling

3.1 Supercast SW20 is supplied in rolls of 5 m lengths weighing 1.3 kg and heat sealed in a polythene bag.

3.2 Supercast SWX is supplied in 600 ml sachets packed in cartons with 10 sachets per carton weighing approximately 7 kg.

3.3 Supercast SW Adhesive is supplied in 380 ml cartridges packed in cartons with 20 cartridges per carton weighing approximately 11 kg.

3.4 The system components must be stored in cool, dry conditions away from direct sunlight. When stored in accordance with the Certificate holder's instructions, Supercast SW20 and Supercast SW Adhesive will have a shelf life of 12 months, and Supercast SWX a shelf life of 9 months.

3.5 The Certificate holder has taken the responsibility of classifying and labelling the system components under the *CLP Regulation (EC) No 1272 / 2008 on the classification, labelling and packaging of substances and mixtures.* Users must refer to the relevant Safety Data Sheet(s).

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Supercast SW.

Design Considerations

4 Use

4.1 The system is satisfactory for use in a Type B (structurally integral) protection (as defined in BS 8102 : 2009) to waterproof construction joints and penetrations in underground waterproof reinforced concrete structures.

4.2 The system is not suitable for use in movement joints, eg expansion joints.

4.3 The system swells on contact with water and must be fully confined within the concrete structure to form an effective seal.

4.4 The unconfined Supercast SW20 will expand by up to 200% by volume in neutral pH water. The expansion will be less at low temperatures, but adequate to enable the product to form an effective seal when fully confined.

4.5 The system will shrink on drying, but will re-hydrate on wetting and re-swell to provide an effective seal.

4.6 The ability of the system to expand and form an effective seal can be adversely affected by the groundwater chemistry, especially saline conditions. A detailed study of this aspect must be carried out to establish the presence of any contamination. The Certificate holder must be consulted for advice on specific applications, service conditions and groundwater chemistry.

4.7 The system has not been assessed for use in saline water conditions.

4.8 The system will develop a significant pressure when confined within a concrete structure. Supercast SW20 and Supercast SWX must be covered by at least 80 mm and 50 mm respectively with concrete, from each edge, to avoid damage to the concrete.

5 Practicability of installation

The system is designed to be installed by a competent general builder, or a contractor, experienced with this type of system.

6 Adhesion

6.1 The system, when applied to sound and well compacted concrete substrates, has satisfactory adhesion.

6.2 Substrates must be free from contamination that could affect the adhesion of the system.

7 Resistance to water pressure

7.1 When confined, the system forms an effective barrier to water under hydrostatic pressure from the ground in water-resistant reinforced concrete construction joints.

7.2 When tested at a maximum hydrostatic water pressure of 8 bar the system remained watertight.

7.3 An appropriate safety factor must be applied to the maximum water pressure given in section 7.2, and the use of additional waterproof protection should be considered, depending on the specific risks associated with any particular structure. The Certificate holder should be consulted for further advice.

8 Maintenance

As the system is confined within the structure and has suitable in-situ durability (see section 9), maintenance is neither possible nor required.

9 Durability

9.1 The system will function as a waterstop and provide an effective barrier to water under hydrostatic pressure for the life of the structure in which it is incorporated.

9.2 The durability of the system may be affected if dislodged or damaged during or following installation, therefore care must be taken to ensure that the system remains in position and is not dislodged when concrete is poured over it, nor damaged during subsequent actions, eg vibration.

Installation

10 General

10.1 Dust, dirt and other debris must be removed from the concrete substrate using a stiff brush and/or suitable mechanical means.

10.2 On smooth concrete, Supercast SW20 is fixed to the prepared substrate with Supercast SW Adhesive. On rough or uneven surfaces, Supercast SWX should be used as the adhesive. In both cases, the bead diameter of the adhesive should be between 12 and 15 mm.

10.3 The system must never remain permanently exposed and to avoid premature swelling, it must be protected from contact with water until enclosed in the structure, and must not be placed during rain or when rain is forecast.

11 Procedure

Placing and fixing

11.1 Supercast SW20 is unrolled and placed into the adhesive on the prepared concrete substrate to sit centrally between the inner and outer rows of reinforcing bars.

11.2 The waterstop should be pressed firmly into the adhesive so that the adhesive exudes at the edges.

11.3 A minimum of 80 mm concrete coverage must be ensured around all edges.The Certificate holder must be consulted on minimum wall height.

11.4 Where Supercast SWX is used as the primary waterstop, eg at penetrations, the product must be applied as a continuous bead at least 10 mm in diameter and positioned so as to ensure a minimum concrete coverage of 50 mm around all edges.

11.5 Roll ends must be tightly butted together and sealed with Suparcast SWX.

Enclosing

11.6 Prior to enclosing the system in the structure, Supercast SW20 and Supercast SWX must be inspected for damage and premature swelling. Damaged and/or swollen products must be replaced at this stage.

11.7 Concrete is poured to enclose the system, compacting well around the waterstop but taking particular care not to dislodge or cause damage during the process.

Technical Investigations

12 Tests

Tests were conducted on the system and the results assessed to determine:

- product characteristics
- resistance to hydrostatic water pressure
- unrestrained swelling characteristics under alkali, neutral and acidic water conditions
- effect of wet/dry cycles on swelling characteristics
- load developed when restrained.

13 Investigations

The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

Bibliography

BS 8102 : 2009 *Code of practice for protection of below ground structures against water from the ground*

BS EN ISO 9001 : 2008 *Quality management systems — Requirements*

14 Conditions

14.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

14.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

14.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

14.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

14.5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

14.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.

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