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**Agrément Certificate**

**14/5129**

Product Sheet 1 Issue 4

## TRITON WATERTIGHT CONCRETE SYSTEMS

### TRITON TT ADMIX

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Triton TT Admix, a crystalline waterproofing admixture powder, for use in concrete mixes to provide watertight concrete suitable for basements, roofs, swimming pools, tunnels and culverts.

(1) Hereinafter referred to as 'Certificate'.

#### The assessment includes

##### Product factors:

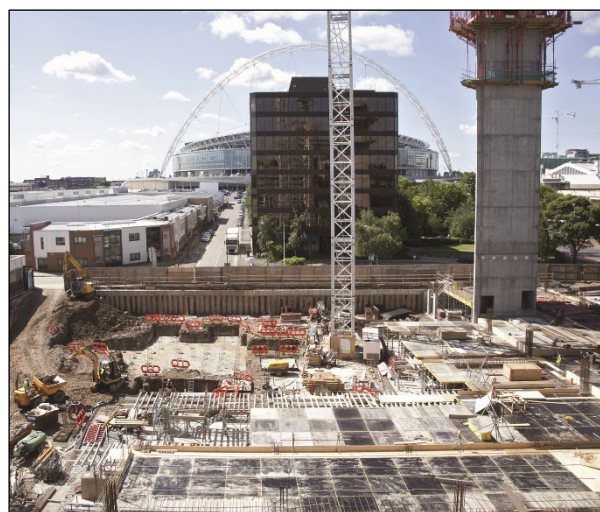
- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

##### Process factors:

- compliance with Scheme requirements
- installation, delivery, handling and storage
- production and quality controls
- maintenance and repair

##### Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review



#### KEY FACTORS ASSESSED

- Section 1. Mechanical resistance and stability
- Section 2. Safety in case of fire
- Section 3. Hygiene, health and the environment
- Section 4. Safety and accessibility in use
- Section 5. Protection against noise
- Section 6. Energy economy and heat retention
- Section 7. Sustainable use of natural resources
- Section 8. Durability

The BBA has awarded this Certificate to the company named above for the product described herein. This product 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 Fourth issue: 4 August 2023

Hardy Giesler  
Chief Executive Officer

*This BBA Agrément Certificate is issued under the BBA's Inspection Body accreditation to ISO/IEC 17020. Sections marked with † are not issued under accreditation.*

*The BBA is a UKAS accredited Inspection Body (No. 4345), Certification Body (No. 0113) and Testing Laboratory (No. 0357).*

*Readers MUST check that this is the latest issue of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.*

*The Certificate should be read in full as it may be misleading to read clauses in isolation.*

*Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.*

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## SUMMARY OF ASSESSMENT AND COMPLIANCE

This section provides a summary of the assessment conclusions; readers should refer to the later sections of this Certificate for information about the assessments carried out.

### Compliance with Regulations

In the opinion of the BBA, Triton TT Admix, if installed, used and maintained in accordance with this Certificate, is not subject to national Building Regulations.

### Additional Information

#### NHBC Standards 2023

In the opinion of the BBA, Triton TT Admix, 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*.

Unless it can be demonstrated that the water table is permanently below the underside of the slab, the product should be used in combination with either a Type A or Type C waterproofing protection where Grade 3 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).

### Fulfilment of Requirements

The BBA has judged Triton TT Admix to be satisfactory for use as described in this Certificate. The product has been assessed as a crystalline waterproofing admixture powder, for use in concrete mixes to provide watertight concrete suitable for basements, roofs, swimming pools, tunnels and culverts, without the requirement for additional applied protection.

## ASSESSMENT

### Product description and intended use

The Certificate holder provided the following description for the product under assessment. Triton TT Admix is a crystalline waterproofing admixture powder, consisting of blended Portland cement and proprietary chemicals. When incorporated in concrete mixes, it enhances the water resistance and durability properties of the hardened concrete.

The product is satisfactory for use in concrete mixes at an addition rate of 1.17% by weight of cement in the mixture with a maximum water/cement ratio of 0.45, to provide watertight concrete for basements, roofs, swimming pools, tunnels, and culverts, without the requirement for additional applied protection.

The use of the product with an air-entraining agent is outside the scope of this Certificate.

### Product assessment – key factors

The product was assessed for the following key factors, and the outcome of the assessments is shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

#### 1 Mechanical resistance and stability

Data were assessed for the following characteristics.

##### 1.1 Mechanical properties

1.1.1 Results of mechanical properties tests are given in Table 1.

**Table 1 Results of mechanical properties tests**

Product assessed	Assessment method	Requirement	Result
Concrete with Triton TT Admix <sup>(1)</sup>	Capillary absorption to BS EN 480-5 : 2005 7 days	≤ 50% by mass of control mix	Pass
		≤ 60% by mass of control mix	Pass
Concrete with Triton TT Admix <sup>(1)</sup>	Compressive strength to BS EN 12390-3 : 2002 7 days	Control	48.5 MPa
		System	45.0 MPa
Concrete with Triton TT Admix <sup>(1)</sup>	Compressive strength to BS EN 12390-3 : 2002 28 days	Control	60.8 MPa
		System	55.0 MPa
Concrete with Triton TT Admix <sup>(1)</sup>	Flexural strength to BS EN 12390-5 : 2002 7 days	Control	4.9 MPa
		System	4.9 MPa
Concrete with Triton TT Admix <sup>(1)</sup>	Flexural strength to BS EN 12390-5 : 2002 28 days	Control	5.8 MPa
		System	5.5 MPa
Concrete with Triton TT Admix <sup>(1)</sup>	Modulus (28 days) to BS 1881-121 : 1983	Control	37500 MPa
		System	38000 MPa

(1) Triton TT Admix mixed at an addition of 1.17% w/w Portland cement

1.1.2 The specific effect of the product on these properties, for a particular mix and site conditions, must be evaluated through site-specific trials prior to use.

1.1.3 Based on data assessed, the compressive strength, flexural strength and static modulus of elasticity is similar to that of an equivalent plain concrete.

1.1.4 Results of setting characteristics and hardening tests of concrete designed to BS EN 480-1 : 2014 are given in Table 2.

**Table 2 Results of setting characteristics and hardening tests**

Product assessed	Assessment method	Requirement	Result
Concrete with Triton TT Admix <sup>(1)(2)</sup>	Slump to BS EN 12350-2 : 2000		
	Control	70 ± 10 mm	Pass
Concrete with Triton TT Admix <sup>(1)</sup>	System	70 ± 10 mm	Pass
	Plastic density to BS EN 12350-6 : 2000		
Concrete with Triton TT Admix <sup>(1)</sup>	Control	Value achieved	2398 kg·m <sup>-3</sup>
	System	Value achieved	2417 kg·m <sup>-3</sup>
Concrete with Triton TT Admix <sup>(1)</sup>	Air content in fresh concrete to BS EN 12350-7 : 2000	≤ 2.0% above control concrete	Pass
Concrete with Triton TT Admix <sup>(1)</sup>	Effect of setting of concrete to BS 5075-1 : 1982 initial set		
	Control	Value achieved	150 minutes
Concrete with Triton TT Admix <sup>(1)</sup>	System	Value achieved	205 minutes
	Effect of setting of concrete to BS 5075-1 : 1982 final set		
Concrete with Triton TT Admix <sup>(1)</sup>	Control	Value achieved	245 minutes
	System	Value achieved	285 minutes
Concrete with Triton TT Admix <sup>(1)</sup>	Drying shrinkage to BS 1881-5 : 1970		
	Control	Value achieved	0.038 %
Concrete with Triton TT Admix <sup>(1)</sup>	System	Value achieved	0.027 %
	Wetting expansion to BS 1881-5 : 1970		
Concrete with Triton TT Admix <sup>(1)</sup>	Control	Value achieved	0.021 %
	System	Value achieved	0.016 %

(1) Triton TT Admix mixed at an addition of 1.17% w/w Portland cement

(2) Control water cement ratio of 0.43, system water cement ratio of 0.42.

1.1.5 The effect of the product for a specific mix and site conditions must be evaluated through site trials prior to use.

1.1.6 Based on data assessed, the setting time of concrete containing the product will be higher than that of an equivalent plain concrete. The setting time will depend on the concrete mix design used and the ambient temperature during placing and curing.

1.1.7 Based on data assessed, the drying shrinkage and wetting expansion of concrete containing the product is reduced compared with that of an equivalent plain concrete.

## 2 Safety in case of fire

Not applicable.

## 3 Hygiene, health and the environment

Data were assessed for the following characteristics.

### 3.1 Water penetration and water vapour permeability

3.1.1 Results of water penetration and water vapour permeability tests are given in Table 3.

**Table 3 Results of water penetration and water vapour permeability tests**

Product assessed	Assessment method	Requirement	Result
Concrete with Triton TT Admix <sup>(1)</sup>	Determination of water vapour resistivity to BS 3177 : 1959	Control	1292 MN·s·g <sup>-1</sup> ·m <sup>-1</sup>
		System	1499 MN·s·g <sup>-1</sup> ·m <sup>-1</sup>
Concrete with Triton TT Admix <sup>(1)</sup>	Determination of water permeability to Valenta calculation method	Control	3.74 x 10 <sup>-13</sup> m·s <sup>-1</sup>
		System	3.35 x 10 <sup>-13</sup> m·s <sup>-1</sup>
Concrete with Triton TT Admix <sup>(1)</sup>	Capillary absorption to BS EN 480-5 : 2005	7 days	≤ 50% by mass of control concrete
		90 days	≤ 60% by mass of control concrete

(1) Triton TT Admix mixed at an addition of 1.17% w/w Portland cement

3.1.2 The specific effect of the product on these properties, for a particular mix and site conditions, must be evaluated through site-specific trials prior to use.

3.1.3 On the basis of data assessed, concrete containing the product has a greater resistance to water penetration and water absorption, and a higher resistance to water vapour diffusion, than the equivalent plain concrete.

3.1.4 On the basis of data assessed, concrete containing the product has a higher resistivity to water vapour than that of an equivalent plain concrete.

3.1.5 The appropriate thickness for concrete with a specific resistivity to achieve a water vapour resistance of 250 or 500 MN·sg<sup>-1</sup> is given by:

$$\begin{aligned} \text{For } 250 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1} & \quad t = 250 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1} / \text{vapour resistivity, or } t = 200 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1} / 5 \times \mu \\ \text{For } 500 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1} & \quad t = 500 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1} / \text{vapour resistivity, or } t = 550 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1} / 5 \times \mu \end{aligned}$$

Where:

$t$  = concrete thickness (m)

$\mu$  = water vapour resistance factor.

## 4 Safety and accessibility in use

Data were assessed for the following characteristics.

### 4.1 Reinforcement protection

4.1.1 Results of reinforcement protection tests are given in Table 4.

**Table 4 Results of reinforcement protection test<sup>(1)</sup>**

Product assessed	Assessment method	Requirement	Result
Triton TT Admix	Determination of water soluble chloride content to BS EN 480-10 : 2009	≤ 0.03% by mass	Pass
Concrete with Triton TT Admix <sup>(1)</sup>	Determination of the bond to steel Internal BBA Method T1/19	Comparable adhesion to control	Pass

(1) Triton TT Admix mixed at an addition of 1.17% w/w Portland cement

4.1.2 The specific effect of the product on these properties, for a particular mix and site conditions, must be evaluated through site-specific trials prior to use.

4.1.3 Based on data assessed, the high level of alkalinity required to prevent corrosion of the reinforcement (pH > 13) will not be adversely affected by the incorporation of the product in the concrete.

4.1.4 Corrosion of the reinforcement is normally caused by the ingress of chloride to the steel or by the reduction in alkalinity of the concrete by the diffusion of carbon dioxide. Based on data assessed, the reduced permeability of concrete containing the product will slow down diffusion of aggressive agents into the concrete and so provide improved protection against reinforcement corrosion.

## 5 Protection against noise

Not applicable.

## 6 Energy economy and heat retention

Not applicable.

## 7 Sustainable use of natural resources

Not applicable.

## 8 Durability

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in this product were assessed.

8.2 Specific test data were assessed as shown in Table 5.

*Table 5 Results of durability tests<sup>(1)</sup>*

Product assessed	Assessment method	Requirement	Result
Concrete with Triton TT Admix <sup>(1)</sup>	Alkali content (Na <sub>2</sub> O equivalent) to BS EN 480-12 : 2005	≤ 9.51%	Pass
Concrete with Triton TT Admix <sup>(1)</sup>	Resistance to freeze/thaw to DD CEN/TS 12390-9 : 2006	No cracks or significant scaling vs control concrete	Pass
Concrete with Triton TT Admix <sup>(1)</sup>	Determination of the resistance to efflorescence of concrete to a BBA method	No efflorescence observed	Pass
Concrete with Triton TT Admix <sup>(1)</sup>	Sodium oxide equivalent to BS EN 934-1 : 2008	≤ 9.25%	Pass

(1) Triton TT Admix mixed at an addition of 1.17% wt/wt PC

8.2.1 The specific effect of the product on these properties, for a particular mix and site conditions, should be evaluated through site-specific trials prior to use.

8.2.2 The Certificate holder's declared value of <9.51% should be used when calculating the contribution of the product to the total alkali content of a given concrete mix. In turn, this can be used to assess the susceptibility of that concrete to alkali-silica reaction.

8.2.3 Based on data assessed,

8.2.4 Use of the product will reduce the leaching of lime from the hydrated cement in the concrete.

8.2.5 Concrete containing the product has similar resistance to freeze/thaw to that of an equivalent plain concrete.

8.2.6 Concrete containing the product has similar resistance to carbon dioxide diffusion to that of an equivalent plain concrete.

### 8.3 Service life

8.3.1 Under normal conditions of service, concrete containing the product is more durable than an equivalent plain concrete.

8.3.2 Where exposure to aggressive soil conditions or chemicals is anticipated, a full assessment of the site must be made. In these situations, the Certificate holder should be consulted on the suitability of the product, but such advice is outside the scope of this Certificate.

## PROCESS ASSESSMENT

Information provided by the Certificate holder was assessed for the following factors:

### 9 Design, installation, workmanship and maintenance

#### 9.1 Design

The design process was assessed by the BBA, and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.1 Concrete containing the product must be designed in accordance with BS EN 206 : 2013 and BS 8500-2 : 2015 for all normal types, including precast, pre-stressed, post-tensioned, ready-mixed, reinforced, slip formed, sprayed and pumped concretes. For additional information on required thickness of concrete, the advice of the Certificate holder should be sought, but such advice is outside the scope of this Certificate.

9.1.2 The product is compatible with, and can be used with, cement blends containing pulverized fuel ash, ground granulated blast-furnace slag and silica fume blends, as defined in BS EN 197-1 : 2011.

9.1.3 Structures built incorporating the product must be designed to the relevant sections of BS 8102 : 2022 and BS EN 1992-1-1 : 2004, BS EN 1992-1-2 : 2004 and BS EN 1992-3 : 2006, and their UK National Annexes.

9.1.4 Concrete mixes containing the product are suitable for Type B protection as described in BS 8102 : 2022, and can satisfy the requirements for all grades defined in Table 2 of that Standard. For Grade 3 (where control of water vapour is required), a mix with a sufficiently low vapour permeability must be provided, in combination with an adequate section thickness (see section 3.1.5 of this Certificate). The use of suitable ventilation, dehumidification or air-conditioning, appropriate to the intended use, must also be considered.

9.1.5 The concrete must have a minimum cement content of  $350 \text{ kg}\cdot\text{m}^{-3}$  and be batched with a maximum water/cement ratio of 0.45. Further details of suitable mixes can be obtained from the Certificate holder.

9.1.6 When an additional superplasticiser is required, it must be added after the addition of the product and in accordance with the supplier's recommendations.

9.1.7 Once the fresh concrete is mixed, further materials must not be added.

9.1.8 Joints must be designed with waterstops as recommended in BS 8102 : 2022, to maintain the watertightness of the whole structure. The advice of the Certificate holder should be sought on particular applications.

9.1.9 Basements for dwellings must be designed in accordance with the guidance given in the *Guidance Document — Basements for dwellings*<sup>(1)</sup>.

(1) Published by the Basement Information Centre, Product code: TBIC/007.

#### 9.2 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate.

9.2.2 Installation must be carried out in accordance with this Certificate and the Certificate holder's instructions. A summary of instructions and guidance is provided in Annex A.

9.2.3 Concrete mixes containing the product cannot be placed at temperatures of 5°C or below. If concrete mixes containing the product are proposed to be placed at temperatures less than 5°C, the advice of the certificate holder should be sought for application guidance.

9.2.4 Concrete containing the product must be fully compacted.

9.2.5 The concrete must be cured strictly in accordance with BS EN 13670 : 2009, BS EN 1992-1-1 : 2004 and its UK National Annex and the Certificate holder's recommendations (where site-specific information exists).

9.2.6 Penetrations of the concrete, such as pipe entries or formwork ties, must also be securely sealed to maintain watertightness. The Certificate holder can advise on suitable systems, but such advice is outside the scope of this Certificate.

### 9.3 Workmanship

Practicability of installation was assessed by the BBA on the basis of the Certificate holder's information and a user survey to investigate the performance of the product in service. To achieve the performance described in this Certificate, concrete mixes containing the product must be placed, compacted and cured by operatives with experience of this type of product.

### 9.4 Maintenance and repair

For a specific installation, a maintenance regime must be considered to ensure that the required design life of the concrete is achieved.

## **10 Manufacture**

10.1 The production processes for the product have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.2 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.3 The quality control procedures and product testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.4 The process for management of non-conformities has been assessed and deemed appropriate and adequate.

10.1.5 An audit of each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

† 10.2 The BBA has undertaken to review 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.



## 11 Delivery and site handling

11.1 The Certificate holder stated that the product is supplied in 4.1 kg water-soluble bags, heat sealed and packed 6 bags per plastic pail, 8 pails per layer and 2 layers high, shrink-wrapped on a wooden pallet (ie 96 bags per pallet).

11.2 Each container bears the Certificate holder's name, system name, batch number, health and safety information and the BBA logo incorporating the number of this Certificate.

11.3 Delivery and site handling must be performed in accordance with the Certificate holder's instructions and this Certificate, including:

11.3.1 The product must be stored sealed in its original containers in a dry environment indoors, undercover and out of direct sunlight, at temperatures between 10°C and 38°C.

11.3.2 When handling the product, the normal health and safety procedures associated with cementitious materials must be observed.

### ANNEX A – SUPPLEMENTARY INFORMATION †

Supporting information in this Annex is relevant to the product but has not formed part of the material assessed for the 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.

#### CLP Regulations

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

#### Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by BSI (Certificate FM 25396).

#### Additional information on installation

##### Mix design

A.1 Concrete containing the product is normally supplied as ready-mixed concrete but may be prepared on site where there is adequate mix control<sup>(1)</sup>. Concrete preparation on site must be carried out in accordance with BS 8000-0 : 2014, the Certificate holder's instructions and this Certificate.

(1) NHBC will only accept use of the admixture where included at the concrete batching plant, which must also be either QSRMC or BSI Kitemark registered.

A.2 The consistency of concrete can be adjusted using a suitable<sup>(1)</sup> water-reducing or superplasticising admixture complying with BS EN 934-2 : 2009, to ensure that the maximum water/cement ratio given in section 9.1.5 of this Certificate is not exceeded. Specific admixtures have not been considered and are outside the scope of this Certificate.

(1) The Certificate holder's advice should be sought regarding the suitability and compatibility of water-reducing or superplasticising admixtures, but such advice is outside the scope of this Certificate. Admixtures should be evaluated before use and site trials should be carried out to establish the appropriate dose required.

### Site mixing

A.3 The product is added to the mixer at the correct dose prior to batching the concrete constituents.

A.4 The resulting concrete should be mixed for a minimum of five minutes and in accordance with the Certificate holder's instructions, to ensure even distribution of the product throughout the concrete.

A.5 Where the product is to be added to concrete on site, care must be taken to ensure that adequate mix control is available.

### Placing

A.6 Concrete containing the product should be placed in the same way as normal concrete, in accordance with BS 8000-0 : 2014 and BS EN 13670 : 2009, and by following the Certificate holder's health and safety guidance and the normal routine precautions for handling concrete.

### Finishes

A.7 When water-based products are used to coat the hardened concrete, a bonding agent may be needed. For specific cases, advice should be sought from the Certificate holder, but such advice is outside the scope of this Certificate.

## Bibliography

- DD CEN/TS 12390-9 : 2006 *Testing hardened concrete— Freeze-thaw resistance — Scaling*
- BS 1881-5 : 1970 *Testing concrete — Methods of testing hardened concrete for other than strength*
- BS 1881-121 : 1983 *Testing concrete — Method of determination of static modulus of elasticity in compression*
- BS 3177 : 1959 *Method for determining the permeability to water vapour of flexible sheet materials used for packaging*
- BS 5075-1 : 1982 *Concrete admixtures — Specification for accelerating admixtures, retarding admixtures and water-reducing admixtures*
- BS 8000-0 : 2014 *Workmanship on building sites — Introduction and general principles*
- BS 8102 : 2022 *Protection of below ground structures against water ingress — Code of practice*
- BS 8500-2 : 2015 + A2 : 2019 *Concrete — Complimentary British Standard to BS EN 206 — Specification for constituent materials and concrete*
- BS EN 197-1 : 2011 *Cement — Composition, specifications and conformity criteria for common cements*
- BS EN 206 : 2013 + A2 : 2021 *Concrete — Specification, performance, production and conformity*
- BS EN 480-1 : 2014 *Admixtures for concrete, mortar and grout — Test methods — Reference concrete and reference mortar for testing*
- BS EN 480-5 : 2005 *Admixtures for concrete, mortar and grout — Test methods — Determination of capillary absorption*
- BS EN 480-10 : 2009 *Admixtures for concrete, mortar and grout — Test methods — Determination of water soluble chloride content*
- BS EN 480-12 : 2005 *Admixtures for concrete, mortar and grout — Test methods — Determination of the alkali content of admixtures*
- BS EN 934-1 : 2008 *Admixtures for concrete, mortar and grout — Common requirements*
- BS EN 934-2 : 2009 + A1 : 2012 *Admixtures for concrete, mortar and grout — Concrete admixtures — Definitions, requirements, conformity, marking and labelling*
- BS EN 1992-1-1 : 2004 + A1 : 2014 *Eurocode 2 — Design of concrete structures — General rules and rules for buildings*
- NA + A2 : 14 to BS EN 1992-1-1 : 2004 + A1 : 2014 *UK National Annex to Eurocode 2 — Design of concrete structures — General rules and rules for buildings*
- BS EN 1992-1-2 : 2004 + A1 : 2019 *Eurocode 2 — Design of concrete structures — General rules — Structural fire design*
- NA to BS EN 1992-1-2 : 2004 *UK National Annex to Eurocode 2 — Design of concrete structures — General rules — Structural fire design*
- BS EN 1992-3 : 2006 *Eurocode 2 — Design of concrete structures — Liquid retaining and containing structures*
- NA to BS EN 1992-3 : 2006 *UK National Annex to Eurocode 2 — Design of concrete structures — Liquid retaining and containing structures*
- BS EN 12350-2 : 2000 *Testing fresh concrete — Slump-test*
- BS EN 12350-6 : 2000 *Testing fresh concrete — Density*
- BS EN 12350-7 : 2000 *Testing fresh concrete — Air content - pressure methods*
- BS EN 12390-3 : 2002 *Testing hardened concrete — Compressive strength of test specimens*
- BS EN 12390-5 : 2002 *Testing hardened concrete — Flexural strength of test specimens*
- BS EN 13670 : 2009 *Execution of concrete structures*
- BS EN ISO 9001 : 2015 *Quality management systems — Requirements*

### Conditions

1 This Certificate:

- relates only to the product 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 or 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.

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.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product 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.

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

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

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product 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.