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**Agrément Certificate**

**19/5619**

Product Sheet 1

### DELTA MEMBRANE CEMENTITIOUS WATERPROOFING

### KÖSTER NB1-GREY SYSTEM

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to the KÖSTER NB1-Grey System, a cementitious waterproofing compound for use in internal waterproofing of new or existing structures where subsequent substrate movement is not expected.

(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

**Resistance to water penetration** — when applied to a suitable substrate in two coats, the system will adequately resist the penetration of water under hydrostatic pressure (see section 6).

**Sulfate resistance** — the system may be used in class DS1 soils or groundwater as defined in BRE Special Digest 1 : 2005 (see section 7).

**Durability** — the system will provide an effective barrier to the transmission of ground water for the life of the building to which it is applied (see section 12).



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 January 2019

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](http://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.  
Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.*

**British Board of Agrément**

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## Regulations

In the opinion of the BBA, the KÖSTER NB1-Grey System, 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)

<b>Requirement:</b>	<b>C2(a)(b)</b>	<b>Resistance to moisture</b>
Comment:		The system will adequately resist the passage of moisture. See section 6 of this Certificate.
<b>Regulation:</b>	<b>7</b>	<b>Materials and workmanship (Applicable in Wales only)</b>
<b>Regulation:</b>	<b>7(1)</b>	<b>Materials and workmanship (Applicable in England only)</b>
Comment:		The system is acceptable. See section 12 and the <i>Installation</i> part of this Certificate.



### The Building (Scotland) Regulations 2004 (as amended)

<b>Regulation:</b>	<b>8(1)</b>	<b>Durability, workmanship and fitness of materials</b>
Comment:		The system can contribute to a construction satisfying this Regulation. See section 12 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>9</b>	<b>Building standards applicable to construction</b>
Standard:	3.3	Flooding and ground water
Standard:	3.4	Moisture from the ground
Standard:	3.10	Precipitation
Comment:		The system will adequately resist the passage of moisture and can contribute to satisfying these Standards, with reference to clauses 3.3.3 <sup>(1)(2)</sup> , 3.4.1 <sup>(1)(2)</sup> , 3.4.5 <sup>(1)(2)</sup> , 3.4.6 <sup>(1)(2)</sup> , 3.4.7 <sup>(1)(2)</sup> and 3.10.1 <sup>(1)(2)</sup> . See section 6 of this Certificate.
Standard:	7.1(a)	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.
<b>Regulation:</b>	<b>12</b>	<b>Building standards applicable to conversions</b>
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 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> .

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).



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

<b>Regulation:</b>	<b>23(a)(i)(ii)(iii)(v)(b)(i)</b>	<b>Fitness of materials and workmanship</b>
Comment:		The system is acceptable. See section 12 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>28(a)(b)</b>	<b>Resistance to moisture and weather</b>
Comment:		The system will adequately resist the passage of moisture. See section 6 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 to 3.4 and 3.6) of this Certificate.*

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### Additional Information

#### NHBC Standards 2019

In the opinion of the BBA, the KÖSTER NB1-Grey System, 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*.

Where Grade 3 waterproofing 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) the product should be used in combination with either a Type B or C waterproofing protection.

In the opinion of the BBA, the NHBC accepts the use of the system is acceptable on existing structures when installed and used in accordance with this Certificate and *NHBC Standards for Conversions and Renovations*, taking account of other relevant guidance within the chapter and the suitability of the substrate to receive the system.

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### Technical Specification

#### 1 Description

1.1 The system comprises:

- KÖSTER NB1-Grey — a cementitious based compound mixed with a blend of water based chemical additives to produce a slurry for positive and negative side hydrostatic pressure waterproofing applications
- KÖSTER SB Bonding Emulsion — an SBR emulsion added to KÖSTER NB1-Grey and KÖSTER Repair Mortar Plus to improve workability and impart flexibility
- Polysil TG500 — a polymer and silicate solution used as a primer on mineral substrates prior to the application of KÖSTER NB1-Grey
- KÖSTER Repair Mortar Plus — a slightly expanding mortar used for creating fillets at internal angles prior to the application of KÖSTER NB1-Grey.

1.2 Other items or components which may be used with the system, but which are outside the scope of this Certificate, are:

- restoration plaster
- proprietary joint sealants.

1.3 The system can be used on mineral substrates, eg concrete, masonry and cementitious plaster.

#### 2 Manufacture

2.1 The system is manufactured by a powder batch-blending process.

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 system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by DNV - GL (Certificate 257636-2018-AQ-GER-DAKks).

### 3 Delivery and site handling

3.1 The system is packaged in 25 kg plastic sacks.

3.2 KÖSTER SB Bonding Emulsion is supplied in 5, 10 and 25 kg plastic containers.

3.3 KÖSTER TG500 is supplied in 5 and 10 kg plastic containers.

3.4 KÖSTER Repair Mortar Plus is packaged in 15 kg tubs and 25 kg multiwall paper sacks.

3.5 KÖSTER NB1-Grey is cement-based and must be stored above ground in cool dry conditions. KÖSTER SB Bonding Emulsion must be stored under cool dry conditions and protected from freezing.

3.6 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 the KÖSTER NB1-Grey System.

### Design Considerations

## 4 Use

4.1 KÖSTER NB1-Grey, when used as a two-coat application in the proportions defined in section 15, will provide an effective barrier against the transmission of liquid water under hydrostatic pressure and can be applied to sound brickwork, stonework, blockwork or concrete substrates.

4.2 The system is a Type A tanking membrane as defined in BS 8102 : 2009, Clause 8.2.7, and is used in accordance with that Standard.

4.3 The system is satisfactory for use in the following situations:

- for interior waterproofing of concrete, brickwork, stone and blockwork structures
- for waterproofing concrete floors
- in newbuild tanking applications, applied to the internal surfaces of basements in combination with a Type B or C system as defined under BS 8102 : 2009
- for remedial tanking applied to the internal surfaces of existing basements.

4.4 New buildings must be designed to withstand the hydrostatic pressure expected in service and the system should not be applied if subsequent movement of the substrate is anticipated.

4.5 The water chemistry may affect the performance of the system and where acidic water conditions exist or other contamination is present the advice of the Certificate holder must be sought.

## 5 Practicability of installation

The system is to be applied by suitably competent and experienced contractors using conventional techniques.

## 6 Resistance to water penetration



The system adequately resists the penetration of water.

## 7 Sulfate resistance

The system is based on cement and may be used in class DS1 soils or groundwater as defined in BRE Special Digest 1 : 2005 (see Table 1 of this Certificate).

Table 1 Concentrations of sulfates

Design sulfate class for site	2:1 water/soil extract (SO <sub>4</sub> g·l <sup>-1</sup> )	Groundwater (SO <sub>4</sub> mg·l <sup>-1</sup> )	Total potential (SO <sub>4</sub> %)
DS1	<1.5	<400	<0.24

## 8 Condensation risk

For the purpose of assessing the risk of interstitial condensation, the water vapour resistance factor ( $\mu$ ) for the system should be taken as 109.

## 9 Resistance to movement

The system is unable to accommodate substrate movement and can only be used where such movement is not anticipated, or in conjunction with waterproof movement joints. The Certificate holder's advice on suitable materials should be sought.

## 10 Resistance to damage

10.1 The coating is vulnerable to damage during installation and in service, particularly in heavily trafficked areas where there is a risk of impact or abrasion.

10.2 Floors must be protected with a suitable floor levelling compound or sand-cement screed.

## 11 Maintenance

As the system is protected by an overcoating layer or screed and has suitable durability, maintenance is not required.

## 12 Durability



Under normal conditions of use, the system will provide an effective barrier to the transmission of water for the life of the building to which it is applied.

## Installation

### 13 General

13.1 KÖSTER NB1-Grey System may be applied under most normal site conditions, but application should not be attempted during temperatures below 5°C. The system must be protected from drying before fully cured. For advice on curing times, and installation at temperatures above 30°C, the advice of the Certificate holder must be sought.

13.2 Continuity should be maintained with any membrane (new or existing) in the basement floor using a flexible waterproof joint. The Certificate holder must be consulted for suitable products and details.

13.3 Workmanship should comply with the relevant parts of BS 8000-0 : 2014 and BS 8000-4 : 1989.

## 14 Surface preparation

14.1 The substrate must be sound and solid, as well as free of contamination such as grease or oil. All bond breaking substances such as old coats, laitance, loose particles, dust, formwork and release oil should be removed.

14.2 Old coatings must always be removed by sandblasting or high pressure water blasting (minimum 350 bar).

14.3 Substrates should be wetted or treated with KÖSTER Polysil 500 prior to application of KÖSTER NB1-Grey.

14.4 Dusty or salt-damaged substrates should be brushed and primed with KÖSTER Polysil TG 500, 30 to 90 minutes prior to application of KÖSTER NB1-Grey.

## 15 Application

15.1 The system should be mixed using a slow speed mixer. A 25 kg bag of KÖSTER NB1-Grey is added to either:

- 8 litres of water, or
- 6 litres of water plus 1 to 2 kg KÖSTER SB Bonding Emulsion.

15.2 The system is applied in at least two coats with a brush or a suited spraying device. The coating should not be exposed to heat, frost and strong wind during the application and for at least 24 hours afterwards. The material should be brushed vertically and horizontally and worked into the substrate.

15.3 For spray application, an addition of approximately 250 ml of water is made for each pack to reach a thin material suitable to be sprayed. Due to varying degrees of cement hydration and the latent-hydraulic active ingredients, KÖSTER NB1-Grey can cure in various shades and tones.

15.4 On highly absorbent substrates, the material may tend to prematurely dry. If premature drying is observed (early lightening of the surface), it must be sprayed with a bottle mister with water until the surface is dark and then protected from drying. The advice of the certificate holder must be sought for protection options during installation.

## Technical Investigations

## 16 Investigations

16.1 Tests were conducted and the results assessed to determine:

- chloride ion analysis
- compressive strength
- water vapour resistance
- shrinkage and swelling
- liquid water permeability
- sulfate resistance.

16.2 An examination was made of independent test reports to determine:

- resistance to water pressure
- reaction to fire classification.

16.3 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

BRE Special Digest 1 : 2005 *Concrete in aggressive ground*

BS 8000-0 : 2014 *Workmanship on construction sites — Introduction and general principles*

BS 8000-4 : 1989 *Workmanship on building sites — Code of practice for waterproofing*

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

BS EN ISO 9001 : 2015 *Quality management systems — Requirements*

### 17 Conditions

17.1 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 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.

17.2 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.

17.3 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.

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

17.5 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.

17.6 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.