

DB Group (Holdings) Limited

Wellington Way
Bourn Airfield
Cambridgeshire CB23 2TQ

Tel: 01954 780687

e-mail: sales@dbgholdings.com

website: www.dbgholdings.com



Agrément Certificate

19/5611

Product Sheet 1

PUDLO WATERPROOFING SYSTEMS

PUDLO RENDER SEAL

This Agrément Certificate Product Sheet⁽¹⁾ relates to PUDLO Render Seal, a cementitious waterproofing compound for use as an internal and external waterproofing for new and existing 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

Resistance to water — when applied to a suitable substrate, the product will resist the passage of moisture into the structure (see section 6).

Resistance to sulfates — the product may be used in class DS1 soils and groundwater as defined in BRE Special Digest 1 : 2005 (see section 7)

Durability — under normal service conditions, the product will provide an effective barrier to the transmission of moisture for the design life of the structure to which it is applied (see section 13).



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 First issue: 23 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

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

Bucknalls Lane
Watford
Herts WD25 9BA

©2019

tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk

Regulations

In the opinion of the BBA, PUDLO Render Seal, 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)

In the opinion of the BBA, the use of PUDLO Render Seal in an existing building is not subject to these Regulations, but action to satisfy Requirement C2(a) and Regulation 7 may be necessary for a 'Material change of use' as defined in Regulation 5(a).

Requirement: C2(a) Resistance to moisture
Comment: The product will enable a structure to satisfy this Requirement. See section 6 of this Certificate.

Regulation: 7 Materials and workmanship (applicable to Wales only)
Regulation: 7(1) Materials and workmanship (applicable to England only)
Comment: The product is acceptable. See section 13 and the *Installation* part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

In the opinion of the BBA, the use of PUDLO Render Seal in an existing building is not subject to these Regulations, but action to satisfy the Regulation and related Mandatory Standards below may be necessary for a 'Conversion' as defined in Regulation 4.

Regulation: 8(1) Durability, workmanship and fitness of materials
Comment: The product can contribute to a construction satisfying this Regulation. See section 13 and the *Installation* part of this Certificate.

Regulation: 9 Building standards applicable to construction
Standard: 3.4 Moisture from the ground
Comment: The product will enable a structure to satisfy the requirements of this Standard, with reference to clauses 3.4.1⁽¹⁾⁽²⁾, 3.4.5⁽¹⁾⁽²⁾ and 3.4.7⁽¹⁾⁽²⁾. See section 6 of this Certificate.

Standard: 7.1(a) Statement of sustainability
Comment: The product 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: Comments in relation to the product 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)

In the opinion of the BBA, the use of PUDLO Render Seal in an existing building is not controlled by these Regulations, but action to satisfy Regulations 23(a)(b)(i) and 28(b) may be necessary for a 'Material change of use' under Regulation A9.

Regulation: 23(a) Fitness of materials and workmanship
Comment: **(b)(i)** The product is acceptable. See section 13 and the *Installation* part of this Certificate.

Regulation:	28(a)	Resistance to moisture and weather
Comment:		The product will enable a structure to satisfy the requirements of this Regulation. 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 and 3.3) of this Certificate.

Additional Information

NHBC Standards 2019

In the opinion of the BBA, PUDLO Render Seal, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapters 5.1 *Substructure and ground bearing floors*, Clause 5.1.20 *Damp-proofing concrete floors*, for use below the slab, and 5.4 *Waterproofing of basements and other below ground structures*.

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, the product must be used in combination with either Type B or C waterproofing protection.

In the opinion of the BBA, the use of the product on existing structures is acceptable when installed and used in accordance with this Certificate and *NHBC Standards for Conversions and Renovations*, taking into account the other relevant guidance within this document on the suitability of the substrate to receive the product, and where necessary, the relevant chapters of *NHBC Standards 2018*.

Technical Specification

1 Description

1.1 PUDLO Render Seal is a grey, cementitious compound containing Portland cement, graded sands, aggregates and chemical additives. It is supplied in powder form to be mixed with water on site and applied as a slurry coat.

1.2 Ancillary items used in conjunction with the product, but outside the scope of this Certificate, are:

- PS Rapid 3min Mortar — a cement-based, quick-setting hydraulic compound, used to staunch running water or seepage through concrete or masonry
- Renovating plaster — a cement-based renovating plaster.

2 Manufacture

2.1 The product is manufactured in a continuous 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.

3 Delivery and site handling

3.1 PUDLO Render Seal is packed in 25 kg polythene-lined paper bags. Each sack or container carries a label bearing the BBA logo incorporating the number of this Certificate.

3.2 The product, when stored unopened in dry conditions, has a shelf-life of 12 months.

3.3 The Certificate holder has taken the responsibility of classifying and labelling the product 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 PUDLO Render Seal.

Design Considerations

4 Use

4.1 PUDLO Render Seal is satisfactory for use as a fully bonded Type A waterproofing protection as defined in BS 8102 : 2009 for the waterproofing of new or existing structures.

4.2 The product can be used internally and externally on concrete substrates to provide an effective barrier to the transmission of liquid water where Grade 1 to 3 waterproofing protection is required, as defined in Table 2 of BS 8102 : 2009, as:

- interior and exterior waterproofing for concrete, brick, stone and block substrates
- waterproofing for concrete floors
- a waterproofing system, eg reservoirs tanks or pools.

4.3 Where Grade 3 waterproofing protection is required, the environment must also be controlled by use of ventilation, dehumidification and/or air conditioning (as appropriate), to ensure that dampness does not occur. See also the *Additional Information* part of this Certificate relating to the NHBC Standards.

5 Practicability of installation

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

6 Resistance to water



PUDLO Render Seal, when applied to a suitable substrate in one or two coats, provides an effective barrier against the transmission of liquid water.

7 Resistance to sulfates

7.1 The product is based on cement and may be used in class DS1 soils and groundwater as defined in BRE Special Digest 1 : 2005, Part C *Assessing the aggressive chemical environment* (see Table 1 of this Certificate).

Table 1 Concentrations of sulfates

Design sulfate class for site	2:1 water/soil extract (SO ₄ mg per litre)	Groundwater (SO ₄ mg per litre)	Total potential (SO ₄ %)
DS1	<500	<400	<0.24

7.2 Where the substrate has a high sulfate content or efflorescing, the advice of the Certificate holder should be sought.

7.3 The Certificate holder can provide an analytical service on samples of substrates, soil and groundwater.

8 Condensation risk

8.1 For the purpose of assessing the risk of interstitial condensation, the water vapour resistance factor (μ) for the product should be taken as 81.

8.2 If the product is applied to the inside of the basement wall, the structure will remain cold and wet, with subsequent risks of condensation and frost damage.

8.3 The condensation risk can be reduced by the application of renovating plaster or other proprietary, lightweight, cement-based renovating plaster, and the provision of adequate heating and ventilation, and/or the use of a dehumidifier.

9 Resistance to movement

The product is unable to accommodate movement owing to settlement and can only be used where settlement is not anticipated, or in conjunction with waterproof movement joints. The Certificate holder can advise on suitable materials for such joints.

10 Fixings

10.1 Special measures are necessary to avoid breaching the waterproof render when attaching fixings. The measures include:

- the use of epoxy resin or polyurethane adhesives to bond lightweight fixing to coated surface
- coating of recesses, made in substrate to accept heavy-duty fittings, with the product to form waterproof pockets. These are filled with an appropriate mortar and coated with the products to provide continuity of the surface coating
- the use of floor-standing supports.

10.2 If these techniques cannot be applied and it is necessary to breach the coating, the recess formed in the substrate must be filled with the product.

11 Resistance to damage

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

11.2 The product can be protected externally by boarding or a sand/cement mix, and internally by renovating plaster or a proprietary, cement-based renovation plaster.

11.3 Floors waterproofed with PUDLO Render Seal should be protected with a suitable floor levelling compound or sand cement screed.

12 Maintenance

As the product has suitable durability, maintenance is not required

13 Durability



Under normal service conditions of use, the product will provide an effective barrier to the transmission of liquid water for the life of the structure to which it is applied.

14 General

14.1 PUDLO Render Seal is installed by suitably competent and experienced contractors using conventional techniques. Workmanship should comply with BS 8000-0 : 2014, BS 8000-3 : 2001 and BS 8000-4 : 1989.

14.2 Application of the product must not be attempted during heavy rain, at temperatures below 5°C nor to a frozen substrate.

14.3 Existing water infiltration must be investigated and rectified using PS Rapid 3min Mortar prior to installation of the product.

14.4 New buildings must be designed to withstand the hydrostatic pressure expected in service. The product should not be applied until structural movement owing to curing has occurred.

14.5 Continuity must be maintained with any membrane (new or existing) in the basement floor using a flexible waterproof joint. The Certificate holder can advise on suitable detailing for a particular application.

14.6 The product is not intended to provide a decorative finish. Discolouration, efflorescence and lime bloom can occur on the surface of the product, but this will not affect its waterproofing properties.

15 Surface preparation

15.1 Before application, any plaster, render or other substances that could inhibit bonding must be removed back to the substrate. All mortar joints must be flush-pointed, defects made good and irregular surfaces given a trowelled or floated finish with an appropriate sand/cement mix. When installing a render, the mortar joints should be raked out to a depth of at least 10 mm.

15.2 Water infiltration through the surface to be treated is either diverted by drainage or concentrated at weepholes which are plugged with PS Rapid 3min Mortar after the application of the final coat.

15.3 All surfaces must be clean, sound, keyed and free from existing coatings or contamination, eg paint, laitance, dirt and surface water.

15.4 A new concrete surface may be bush hammered, scabbled or grit-blasted to remove any laitance.

15.5 If the surface shows frost damage, the affected area is removed and replaced before the product is applied. The Certificate holder can advise on suitable materials for a particular application.

15.6 The substrate must be saturated, but free from surface water, before the product is applied.

16 Application

16.1 A slurry is prepared by mechanically fixing 25 kg of PUDLO Render Seal with 4.5 to 6 litres of potable water.

16.2 The product is applied to the substrate in one or two applications, dependent on the type of application required, to achieve the coating thickness and application rate given in Table 2.

Table 2 Coating thickness and application rate

Type of water ingress	Overall application rate ⁽¹⁾ (kg·m ⁻²)	Minimum coating thickness (mm)
Pressureless water	3-4	1.5
Water under pressure	4-6	2.0

(1) The application rate will vary, depending on the surface roughness of the substrate.

16.3 The first coat of the product is applied by vigorously working it into and laying it over the surface using a masonry brush, or by trowelling, or spraying at a maximum coverage rate of 4 kg·m⁻². Application should be carried out to ensure

that a flowing edge is maintained. If this is not possible, when application is continued the previously applied coat should be overlapped.

16.4 As soon as the first coat has hardened sufficiently (after approximately five to eight hours), the second coat may be applied by brush, spray or trowel at a maximum coverage rate of 4 kg·m⁻².

16.5 Each coat is examined for damage and areas of incomplete coverage before the next coat is applied.

16.6 The mixed product should be used within 45 minutes and discarded if re-stirring does not restore its workability.

16.7 Once the final coating has fully hardened, the weeps should be stopped using PS Rapid 3min Mortar. Any recesses are coated with PUDLO Render Seal, filled with appropriate mortar and coated with PUDLO Render Seal to provide continuity of the surface coating.

16.8 Setting and hardening of the product will depend on temperature and humidity. The product should be protected from rain for a minimum period of 24 hours and kept damp and protected from frost for a minimum period of five days after application using suitable plastic sheeting and insulating mats. Curing compounds should not be used.

16.9 A coat of proprietary cement-based plaster or sand/cement mix may be applied to protect the product from damage during service.

16.10 Floors waterproofed with the product are protected by a screed finish.

Technical Investigations

17 Tests

The product has been assessed to determine:

- bulk density
- setting time
- resistance to water pressure (up to a 6m head)
- water vapour permeability
- shrinkage and swelling
- stability of mix
- flexural strength
- modulus of elasticity
- adhesion
- halogen content
- water retention of mix
- compressive strength.

18 Investigations

18.1 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.

18.2 A visit was made to a site in progress to assess practicability of installation.

Bibliography

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

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

BS 8000-3 : 2001 *Workmanship on building sites — Code of practice for masonry*

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*

19 Conditions

19.1 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.

19.2 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.

19.3 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.

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

19.5 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.

19.6 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.