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BAB-18-026-P-A-UK
BDA Agrément®
Newton 107F
Waterproofing Membrane

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SCOPE

Newton 107F (hereinafter the "Product") is used mainly for the waterproofing of concrete and masonry earth retained structures and covered/protected/buried concrete decks. It can also be used for the waterproofing of reservoirs, tunnels and water tanks. The Product is also used in cases where the structure has both masonry and concrete elements and differential movement is expected. The Product can be used in situations where there is a positive water pressure up to 10 bar or a negative water pressure below 1.5 bar.

DESCRIPTION

The Product is a two-component, cementitious, polymer-rich coating. When mixed, the Product is thixotropic to enable ease of application by hand or airless spray. The Product hydrates to form a highly alkaline, permanently elastomeric coating which not only protects the concrete or other substrates from water penetration, but also accommodates movement in cracks and at movement and day joints. The Product is non-hazardous and ideally suited for application in confined spaces. The Product is reinforced over static joints and at details and changes of direction with Newton 912-RT. The application of the Product is especially effective where the structure has both masonry and concrete elements and where differential movement is expected.

PRODUCT ILLUSTRATION

THIRD PARTY ACCEPTANCE

NHBC - For detailed information see Chapter 3.3 (Third Party acceptance)

STATEMENT

It is the opinion of Kiwa Ltd. that the Product is fit for its' intended use, provided it is specified, installed and used in accordance with this Agrément.

Chris Vurley, CEng
Technical Manager, Building Products

Mark Crowther, M.A. (Oxon)
Kiwa Ltd. Technical Director

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SUMMARY OF AGRÉMENT

This Agrément provides independent information to specifiers, building control personnel, contractors, installers and other construction industry professionals considering the fitness for the intended use of the Product. This Agrément covers the following:

- Conditions of use;
- Initial Factory Production Control and Quality Management Systems;
- Points of attention for the specifier and examples of typical details;
- Installation procedure;
- Independently assessed Component characteristics;
- Compliance with national Building Regulations, other regulatory requirements and Third Party acceptance;
- Sources, including codes of practice, test and calculation reports.

MAJOR POINTS OF ASSESSMENT

Resistance to water and water vapour - the Product will resist the passage of moisture into the structure (see section 2.4).

Bond strength - the Product will bond to a suitably prepared substrate with a bond strength ≥ 0.8 MPa (see section 2.4).

Durability - under normal conditions of use the Product will provide an effective barrier to the transmission of liquid water for the life of the building to which it is applied (see section 2.4).

CE marking - the component manufacturers have taken responsibility for the CE marking of the components used in the Product in accordance with all relevant harmonised European Standards. An asterisk (*) appearing in this Agrément indicates that data shown is given in the manufacturer's Declaration of Performance (DoP).

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CHAPTER 1 - GENERAL CONSIDERATIONS

1.1 - CONDITIONS OF USE

1.1.1 Design considerations
See section 2.1.

1.1.2 Application
The assessment of the Product relates to its' use in accordance with this Agrément and the Agrément holder's requirements.

1.1.3 Assessment
Kiwa Ltd. has assessed the Product in combination with its' relevant DoPs and factory and site visits. Also, the NHBC Standards have been taken into consideration. Factory Production Control has been assessed.

1.1.4 Installation
It is recommended that the quality of installation and workmanship is controlled by (a) competent person(s). Such person(s) shall be either a qualified employee of the Consulting Engineer or an employee of the installing contractor. The Product shall be installed strictly in accordance with this Agrément and with the Agrément holder's requirements by Newton Registered Contractors and those trained by the Agrément holder.

1.1.5 Geographical scope
The validity of this document is limited to England, Wales, Scotland and Northern Ireland, with due regard to chapter 3 of this Agrément (CDM, national Building Regulations and Third Party Acceptance).

1.1.6 Validity
The purpose of this BDA Agrément® is to provide for well-founded confidence to apply the Product within the Scope described. The validity of this Agrément is three years after the issue date, and as published on www.kiwa.co.uk/bda. After this, the validity of the Agrément can be extended every three years after a positive review.

1.2 - INITIAL FACTORY PRODUCTION CONTROL (FPC)

- Technical Assessment Body Kiwa N.V. represented by Kiwa Ltd. has determined that the Agrément holder has fulfilled all provisions of the specifications described in this Agrément in respect of the Product
- The initial FPC audit demonstrated that the Agrément holder has a satisfactory Quality Management Product (QMS) and is committed to continuously improving their FPC operations.
- A detailed Production Quality Specification (PQS) has been compiled to ensure traceability and compliance under the terms of this Agrément.

1.3 - QUALITY MANAGEMENT SYSTEM (QMS)

- The Agrément holder:
  - has an effective and well maintained QMS in operation which covers the necessary clauses required for BDA Agrément®.
  - is committed to continually improving their FPC, QMS and associated procedures.
- Document control and production line procedures were deemed satisfactory, with sufficient evidence provided in support of BDA Agrément® requirements.

1.4 - ANNUAL VERIFICATION PROCEDURE - CONTINUOUS SURVEILLANCE

In order to demonstrate that the FPC is in conformity with the requirements of the technical specification described in this Agrément, the continuous surveillance, assessment and approval of the FPC will be done in a frequency of not less than once per year by Kiwa Ltd.

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CHAPTER 2 - TECHNICAL ASSESSMENT

2.1 - POINTS OF ATTENTION TO THE SPECIFIER

2.1.1 Delivery, transport and site handling
The product is supplied in bags and containers as a two-component system, multiple quantities can be palletised for shipment. Further information is given in section 2.3.2 of this Agrément.

2.1.2 Permitted applications
The Product is satisfactory for use as a fully bonded Type A waterproofing protection as defined in BS 8102 for the waterproofing of new or existing structures.

The Product can be used in situations where there is a positive water pressure up to 10 bar or a negative water pressure below 1.5 bar.

Due consideration should be given to the examination and repair of cracks and joints in the substrate as appropriate prior to application of the Product.

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, as:

- waterproofing of concrete walls
- waterproofing of internal or external concrete floors
- a waterproofing product, e.g. reservoirs, tanks, pools
- waterproofing of covered/protected/buried concrete decks

The Agrément holder's advice should be sought in case of underground basement waterproofing as the Product may need to be used in combination with other products to achieve the desired environmental grade.

On NHBC sites, additional waterproofing measures may be required as detailed in Chapter 5.4 of NHBC Standards.

2.1.3 Application rate & coverage
When mixed, the Product is thixotropic. It can be applied by hand or airless spray, providing an even finish with no sagging adhesion to prepared concrete and masonry substrates, even in vertical and horizontal (overhead) situations. The Product hydrates to form a durable, highly alkaline, permanently elastomeric coating which protects the substrate from water penetration. It is non-hazardous and suited for application in confined spaces.

2.1.4 Product characteristics

Table 1

Feature	Result	Units
Form - Two components	Part A liquid + Part B powder	-
Colour	Grey	-
Mixed density	1.6	g/cm^3
Pack size	30	kg
Yield per kg	0.63	Litres
Shelf life in dry, frost free conditions with unopened bags at 20 ºC	12	Months
Working (Pot) life @ 20 ºC	Approximately 45 minutes	-
Finishing time	Within 10 minutes of placing	-
Application rate - in one or two coats @ 2 mm total thickness	3.2	kg/m^2
Substrate application temperature	+5 to +30	°C
Service temperature	-15 to +80	°C
Odour	Low - Characterised as polymeric	-
VOC content - Part A only (none when cured)	<1.76	g/l

2.1.5 Curing times

Table 2

Curing Temperature	Ready for next coat (hours)	To not be adulterated by rain (hours)	Ready for temporary protection boards (hours)	Ready for flood/hosepipe test (days)	Fully cured (days)
5°C	8	5	72	7	28
10°C	7	4	72	7	28
15°C	6	3	72	7	28
20°C	5	2.5	48	7	28
25°C	3	2	48	7	28

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2.2 - EXAMPLES OF DETAILS

Figure 1 - Typical concrete joint detail

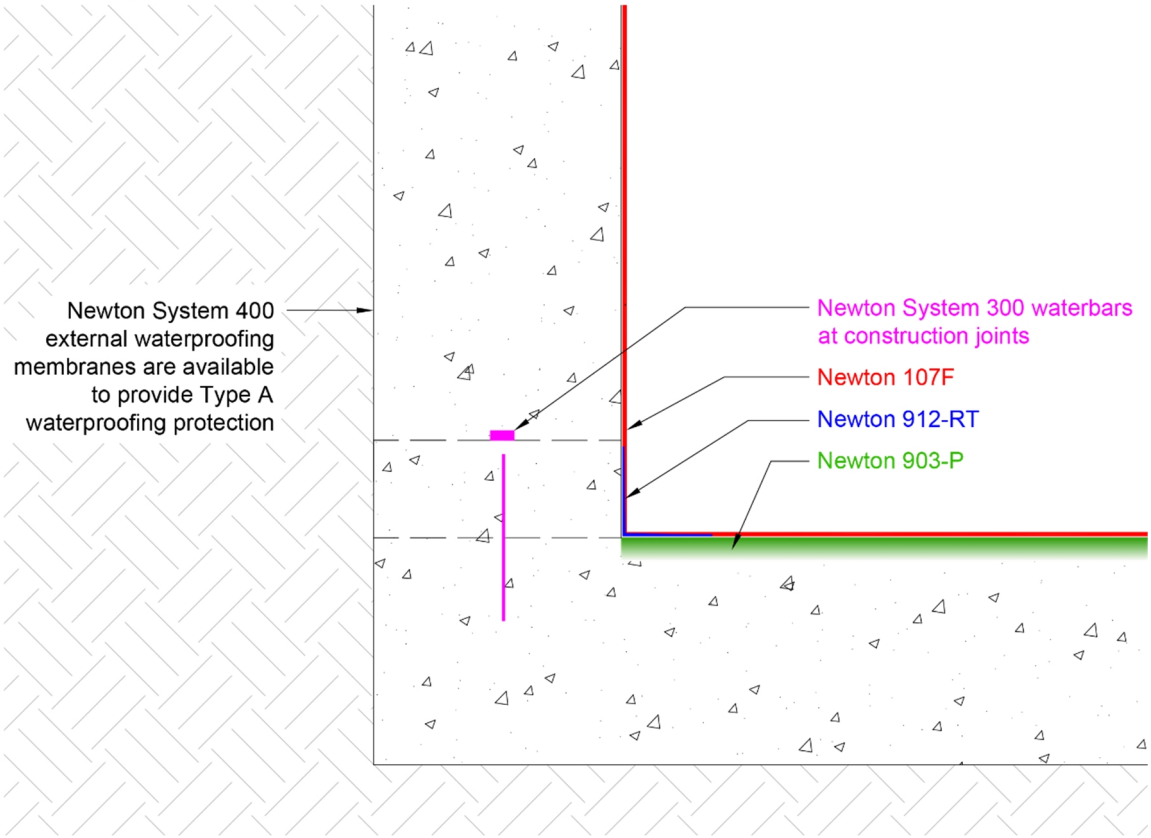
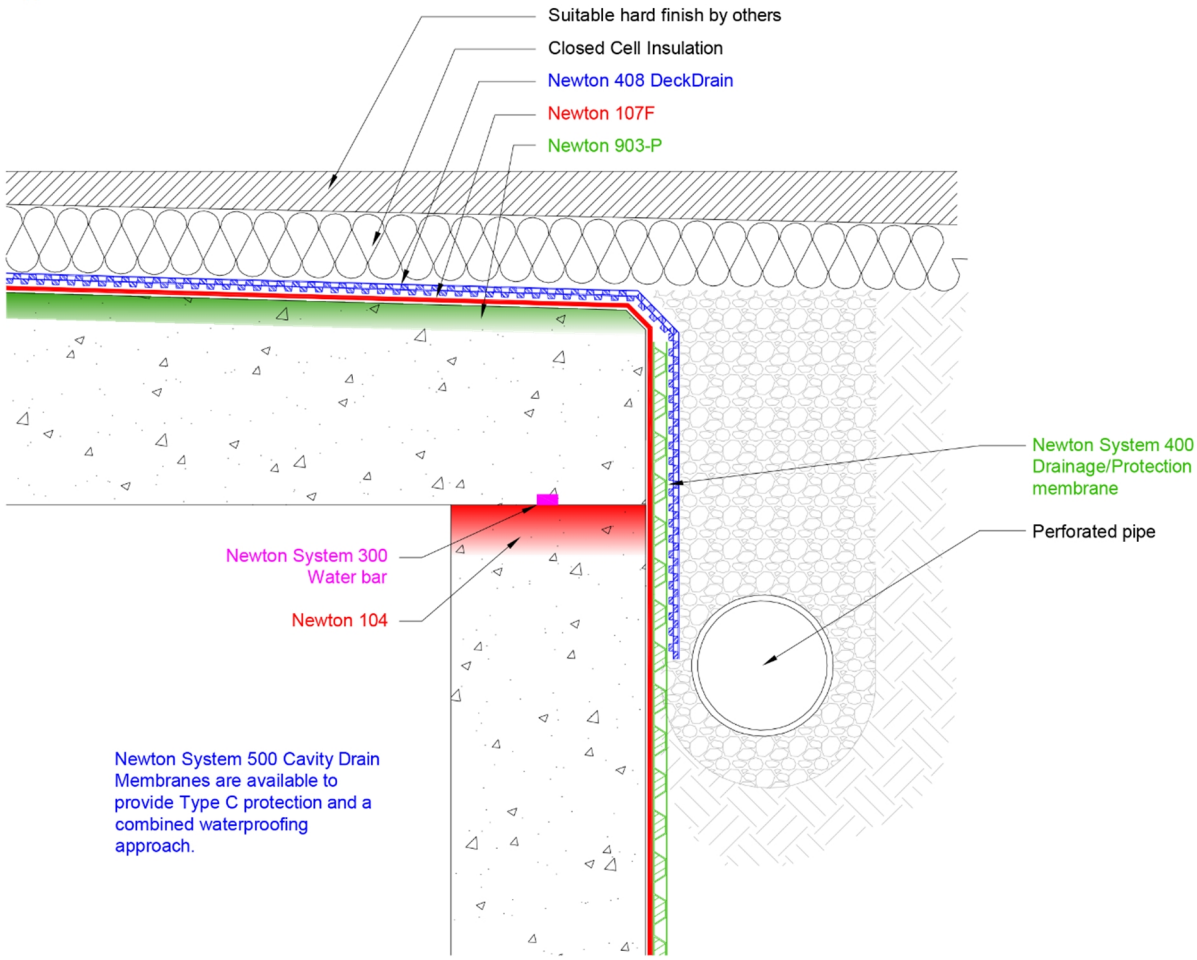


Figure 2 - Typical down-stand detail



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2.3 - INSTALLATION

2.3.1 General
The Product shall be installed strictly in accordance with this Agrément and with the Agrément holder's requirements by Newton Registered Contractors and those trained by the Agrément holder.

The Product shall be applied strictly in accordance with the instructions of the Agrément holder and the requirements of this Agrément. Workmanship should comply with BS 8000-0, BS 8000-3 and BS 8000-4.

The Product can be used in situations where there is a positive water pressure up to 10 bar or a negative water pressure below 1.5 bar.

2.3.2 Delivery and site handling
The liquid component (Part A) is supplied in 15 kg plastic containers and the pre-bagged mortar (Part B) is supplied in 15 kg bags.

Both components (Part A & B) should be stored in a suitably dry area away from moisture or heat exposure.

2.3.3 Substrate preparation
The Product can be applied in a variety of substrates which include:
- Concrete
- Brickwork
- Blockwork
- as well as the interface of these to each other

A trained and approved installer will determine the most appropriate preparation on a case by case basis, based on site investigations.

On horizontal surfaces the laitance must be removed to expose hard, dense and clean concrete; this generally requires at least 1 mm of surface material to be removed by vacuum blasting or grinding. Preparation of the substrate must be by, or those trained by, independent specialist preparation contractors. An inspection must be made of the prepared substrate prior to the application of the Product. If the substrate preparation is inadequate then the Product must not be applied until the substrate is properly prepared.

For all other applications preparation of the substrate must be by water jet blasting to remove release agents and clean the surface down. An inspection must be made of the prepared substrate prior to the application of the Product. If the substrate preparation is inadequate then the Product must not be applied until the substrate is prepared correctly.

To vertical concrete, jet-washing should be used to remove the laitance and any release agents.

To brick and block this could be as little as jet-washing but as much as grit-blasting or scabbling.

2.3.4 Joints and cracks
Prior to application of the Product the substrate must be examined for the presence of joints and cracks; remedial work must be done to prepare the substrate in advance of the application of the Product. Refer to the Agrément holder for further advice.

Joints
Over static joints, including day joints, assume that some shrinkage may still occur; 25mm wide masking tape must be applied over the joint to delaminate the Product from the substrate joint. Newton 912-RT tape must be applied to the underside of the Product to give strength over the now delaminated joint.

With regards to movement joints the Product is applied up to the vertical edge of the joint to level it out and to ensure that the substrate is covered with a consistent film thickness. Newton 106 FlexProof flexible mastic is then applied to the dressed joint to seal it and to compensate for any subsequent differential movement.

Cracks
If the crack is dead, fill level with the top of the substrate so that the Product can be applied to a consistent film thickness, which reduces the risk of differential curing and the potential for cracking.

Live and dynamic cracks are cut out with a suitable masonry power saw or dove-tailed router and the Product is applied up to the vertical edge of the crack to level it out and to ensure that the substrate is covered with a consistent film thickness. Newton 106 FlexProof flexible mastic is then applied to the dressed crack to seal it and to compensate for any subsequent differential movement.

2.3.5 Application
The Product can be applied by hand (roller, brush, squeegee or trowel) or by airless spray application for larger areas.

Due consideration should be given to the following:
- The Product should be applied to a total thickness of 2.0 mm
- Walls and soffit application is by two coats, each of 1.6 kg/m^2
- Horizontal surface application is by two coats, each of 1.6 kg/m^2 or by a single coat of 3.2 kg/m^2
- At a thickness of 2.0 mm, a 30 kg composite pack covers a total surface area of 9.4 m^2

2.3.6 Conditions for use
The Product may be installed under most normal site conditions. External application should be at a minimum substrate temperature of 5 ºC and rising. Application should not be attempted during rain and due consideration should be given to local weather and curing times stated in Table 2 of this Agrément.

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2.4 - INDEPENDENTLY ASSESSED PRODUCT CHARACTERISTICS

Resistance to water and water vapour - when applied to a concrete substrate, the Product will resist the passage of moisture into the structure.

Bond strength - the Product will bond to the suitably prepared substrate with a bond strength ≥ 0.8 MPa.

Durability - under normal conditions of use, the Product will provide an effective barrier to the transmission of liquid water for the life of the building to which it is applied.

Cured performance characteristics

Table 3

Cured Performance	Result	Units	Test Method
Colour	Grey	-	-
Finished applied thickness	2.00	mm	-
Bond strength (adhesion to concrete)	≥0.8 *	MPa	BS EN 1542
Mean tensile strength	0.5	MPa	BS 903-A2
Mean elongation	126	%	BS 903-A2
Loading capability - 28 days	8 to 10	MPa	BS 4551
Hardness	84.0	Shore A	BS EN ISO 868
Water vapour diffusion resistance - S_D value	1.55	m	BS EN ISO 7783-2
Water vapour diffusion resistance - μ value	775	μ	Calculation from SD value
Water vapour diffusion resistance	7.75	MNs/g	Calculation from SD value
Water resistance - Positive	10.0	bar	DIN 1048
Water resistance - Negative	1.5	bar	DIN 1048
Reaction to fire classification	B-s1, d0 *	-	BS EN 13501-1
UV Resistance - Stable but will discolour	50	Years	UNI EN ISO 11507

2.5 - ANCILLARY ITEMS

Note:
Ancillary items detailed in this section may be used in conjunction with the Product but fall outside the scope of this Agrément:

- Newton 912-RT - reinforcement tape for static joints, construction joints and general detailing such as penetrations
- Newton 903-P - primer for concrete for improved adhesion
- Newton 905-CM - water based curing compound used to prevent accelerated drying during hot or very windy conditions
- Newton 106 FlexProof - movement joint detail
- Newton System 400 - drainage membranes
- Newton System 300 - waterbars
- Newton 203-RM - repair mortar
- Newton 908 Liquabond - acrylic bonding agent and admixture
- Newton 103-S - high performance cementitious waterproofing membrane
- Newton 313-WP - fast acting leak sealing water plug

Refer to the Agrément holder for the suitability of any given waterproofing design.

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CHAPTER 3 - CDM, NATIONAL BUILDING REGULATIONS AND THIRD PARTY ACCEPTANCE

3.1 - THE CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015 AND THE CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS (NORTHERN IRELAND) 2016.

Information in this Agrément may assist the client, Principal Designer/CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

3.2 - NATIONAL BUILDING REGULATIONS

In the opinion of Kiwa Ltd., the Product, if installed and used in accordance with Chapter 2 of this Agrément, can satisfy or contribute to satisfying the relevant requirements of the following national Building Regulations.

3.2.1 - REQUIREMENTS: THE BUILDING REGULATIONS 2010 AND SUBSEQUENT AMENDMENTS

- B3 internal fire spread (structure) - the Product has a European Classification B-s1, d0 in accordance with BS EN 13501-1; see section 2.4 of this Agrément.
- B4 external fire spread - the Product has a European Classification B-s1, d0 in accordance with BS EN 13501-1; see section 2.4 of this Agrément.
- C2(a)(b) Resistance to moisture - correct use of the Product satisfies the requirement of this Regulation; see section 2.4 of this Agrément.
- Regulation 7 Materials and workmanship - the Product is manufactured from suitably safe and durable materials for the application and can be installed to give a satisfactory performance, see section 2.1 of this Agrément.

3.2.2 - REQUIREMENTS: THE BUILDING (AMENDMENT) REGULATIONS 2014 (WALES) AND SUBSEQUENT AMENDMENTS

- B3 internal fire spread (structure) - the Product has a European Classification B-s1, d0 in accordance with BS EN 13501-1; see section 2.4 of this Agrément.
- B4 external fire spread - the Product has a European Classification B-s1, d0 in accordance with BS EN 13501-1; see section 2.4 of this Agrément.
- C2(a)(b) Resistance to moisture - correct use of the Product satisfies the requirement of this Regulation; see section 2.4 of this Agrément.
- Regulation 7 Materials and workmanship - the Product is manufactured from suitably safe and durable materials for the application and can be installed to give a satisfactory performance, see section 2.1 of this Agrément.

3.2.3 - REQUIREMENTS: THE BUILDING (SCOTLAND) REGULATIONS 2004 AND SUBSEQUENT AMENDMENTS

Regulations 8 (1)(2) Durability of materials and workmanship

- The Product can contribute to a construction that satisfies this Regulation; see section 2.1 of this Agrément.

Regulation 9 Building Standards - Construction

- 2.7 (fire spread on external walls) - the Product can contribute to a construction that satisfies the requirement of this provision; see section 2.4 of this Agrément.
- The Product can provide an effective barrier to liquid water and water vapour regarding sections 3.3 (flooding and ground water), 3.4 (moisture from the ground) and 3.10 (precipitation); see section 2.4 of this Agrément.
- 7.1(a) Statement of sustainability - 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; see section 2.1 of this Agrément.

Regulation 12 Building Standards - Conversions

- All comments given under Regulation 9 also apply to this Regulation, with reference to Schedule 6 of The Building (Scotland) Regulations 2004 and subsequent amendments, clause 0.12 of the Technical Handbook (Domestic) and clause 0.12 of the Technical Handbook (Non-Domestic).

3.2.4 - REQUIREMENTS: THE BUILDING REGULATIONS (NORTHERN IRELAND) 2012 AND SUBSEQUENT AMENDMENTS

- 23(a)(i)(iii)(b) Fitness of materials and workmanship - the Product is manufactured from materials which are considered to be suitably safe and acceptable for use as described in sections 2.1 and 2.3 of this Agrément.
- 28 Resistance to moisture and weather - the Product can be installed so as to prevent any harmful effect on the building or the health of the occupants caused by the passage of moisture to any part of the building from (a) the ground and (b) the weather; see section 2.4 of this Agrément.
- 35 Internal fire spread (structure) - the Product can contribute to a construction that satisfies the requirement of this provision; see section 2.4 of this Agrément.
- 36 External fire spread (structure) - the Product can contribute to a construction that satisfies the requirement of this provision; see section 2.4 of this Agrément.

3.3 - THIRD PARTY ACCEPTANCE

NHBC - In the opinion of Kiwa Ltd., the Product, if installed, used and maintained in accordance with this Agrément, can satisfy or contribute to satisfying the relevant requirements in relation to NHBC Standards, Chapter 5.1 Substructure and ground bearing floors and Chapter 5.4 Waterproofing of basements and other below ground structures.

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CHAPTER 4 - SOURCES

- BS EN 13501-1:2018 Fire classification of construction products and building elements. Classification using data from reaction to fire tests
- BS 8102: 2009 Code of practice for protection of below ground structures against water from the 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
- NHBC Standards 2020 Chapter 2.1 The Standards and Technical Requirements, Chapter 5.1 Substructure and ground bearing floors and Chapter 5.4 Waterproofing of basements and other below ground structures

Remark: apart from these sources confidential reports have been assessed; these reports are in the possession of Kiwa Ltd. and kept in the Technical Assessment File of this Agrément; the Installation Guides are current at the time of publication and may be subject to change, the Agrément holder should be contacted for clarification of revision.

CHAPTER 5 - AMENDMENT HISTORY

Revision	Amendment Description	Amended By	Approved By	Date
C	Reaction to fire classification amended from European Classification A2-s1, d0 to B-s1, d0	C. Devine	C. Vurley	August 2020

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