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BAB-18-067-P-A-UK
BDA Agrément®
Newton Waterproofing
Newton HydroBond System
Newton HydroBond-LM

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SCOPE

Newton HydroBond-LM (hereinafter the "Product") is used as a cold-applied continuous waterproofing barrier membrane for application to the outside of the walls of reinforced concrete, blockwork or Insulated Concrete Formwork (ICF) earth retained structures (ranging from domestic basements to large civil engineering projects). Where shuttering (temporary formwork) is to be removed as part of a project specific design, such walls can be subsequently waterproofed with the Product.

DESCRIPTION

The Product is available in two variants; being either Newton 108 HydroBond-LM or Newton 109-LM depending on the desired method of application (but generically referred to as "the Product" unless a more specific reference is appropriate).

PRODUCT ILLUSTRATION

THIRD-PARTY ACCEPTANCE

NHBC - For detailed information see section 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 document 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, Quality Management System and the Annual Verification procedure;
- Points of attention for the Specifier and examples of details;
- Installation;
- Independently assessed Product characteristics and other information;
- 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

Watertightness - the Product will resist the penetration of water from the ground. See section 2.1.10.

Resistance to damage - the Product must not be left exposed in service as it has no inherent properties in respect of resistance to damage. See section 2.1.10.

Behaviour in relation to fire - the Product will not diminish the fire performance of earth retained concrete structures. See section 2.1.10.

Resistance to Radon gas - the Product can be used to manage Radon gas in respect of gas-contaminated land. See section 2.1.10.

Durability - the Product will provide a durable waterproof barrier membrane for the lifetime of the building; the expected lifespan of the building itself should be at least 60 years. See section 2.1.8.

CE marking - The Agrément holder has taken responsibility for CE marking the Product in accordance with all relevant harmonised European Product Standards. An asterisk (*) appearing in this Agrément indicates that data shown is given in the Product 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, test reports, technical literature and factory and site visits. Also, the NHBC Standards have been taken into consideration. Factory Production Control has been assessed.

1.1.4 Installation supervision
The quality of installation and workmanship must be controlled by a competent person who must be an employee of the installation company.

The Product must be installed strictly in accordance with this Agrément and the Agrément holder's requirements.

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 this Agrément can be extended every three years after a positive review.

1.2 - INITIAL FACTORY PRODUCTION CONTROL (FPC)

- 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 System (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

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 at 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 Design responsibility
A Specifier may undertake a project specific design in which case it is recommended that the Specifier co-operates closely with the Agrément holder. The Specifier or installing contractor is responsible for the final as-built design.

In circumstances where the Agrément holder generates the final project specific design, the Agrément holder retains full design responsibility unless the design is subsequently modified by others.

2.1.2 Applied building physics (heat, air, moisture)
The physical behaviour of the building incorporating the Product shall be verified as suitable by a competent specialist, who can be either a qualified employee of the Agrément holder or a qualified consultant. The Specialist will check the physical behaviour of the waterproofing design and if necessary can offer advice in respect of improvements to achieve the final specification. It is recommended that the Specialist co-operates closely with the Agrément holder.

2.1.3 General design considerations
The Product cures to give a continuous tough rubber-like, waterproofing coating to provide a fully bonded Type A membrane when classified to BS 8102. This contributes to provide waterproofing protection Grades 1 and 2; and Grade 3 when part of a combined waterproofing solution.

A project specific design must be undertaken by a Certificated Surveyor in Structural Waterproofing (CSSW) in accordance with BS 8102.

The Product must be permanently protected prior to any back-filling operations (using protection boards, rigid insulation boards or Newton 410 Geodrain).

2.1.4 Project specific design considerations
A pre-installation survey or full design drawings are required to allow determination of the project specific design.

2.1.5 Permitted applications
Only applications according to the specifications as given in this Agrément are allowed; in each case the Specifier will have to cooperate closely with the Agrément holder.

The Product is designed for post-application to concrete, blockwork and ICF and may be designed for application after shuttering (temporary formwork) has been removed or where walls are built from the raft foundation.

2.1.6 Installer competence level
See 2.3.1.

2.1.7 Delivery, storage and site handling
See 2.3.2.

2.1.8 Durability
The Product will provide a durable waterproof barrier membrane for the lifetime of the building; the expected lifespan of the building itself should be at least 60 years.

2.1.9 Maintenance and repair
The Product must be fully protected in normal service use therefore no maintenance is required. For advice in respect of any repair and maintenance concerns, consult the Agrément holder.

2.1.10 Performance factors in relation to the Major Points of Assessment
Watertightness - the Product will resist the penetration of water from the ground (see section 2.4).

Resistance to damage - the Product must not be left exposed in service as it has no inherent properties in respect of resistance to damage. The Product is suitable for use under normal site conditions, prior to confinement. Temporary protection must be applied where there is heavy plant movement, storage of materials or aggressive site activity (hot works etc.) The Product must be permanently protected prior to any back-filling operations (using protection boards, rigid insulation boards or Newton 410 Geodrain).

Behaviour in relation to fire - the Product will not diminish the fire performance of earth retained concrete structures and can contribute to meeting the requirements of the national Building Regulations. The use of the Product will not affect the fire rating of walls when assessed in accordance with BS 476-3.

Resistance to Radon gas - the Product can be used to manage Radon gas in respect of gas-contaminated land. The Product can provide resistance to Radon gas and should be part of a project specific design installed in accordance with BS 8485.

Buildings in areas of risk from Radon should be constructed in accordance with the recommendations of BRE report BR211: Radon: Guidance on protective measures for new buildings.

Buildings on gas-contaminated land should be constructed in accordance with the recommendations of:
- BRE report BR212: Construction of new building on gas-contaminated land;
- BRE report BR414: Protective measures for housing on gas-contaminated land.

If resistance to Radon gas is a requirement of the project specific design, please consult the Agrément holder for advice.

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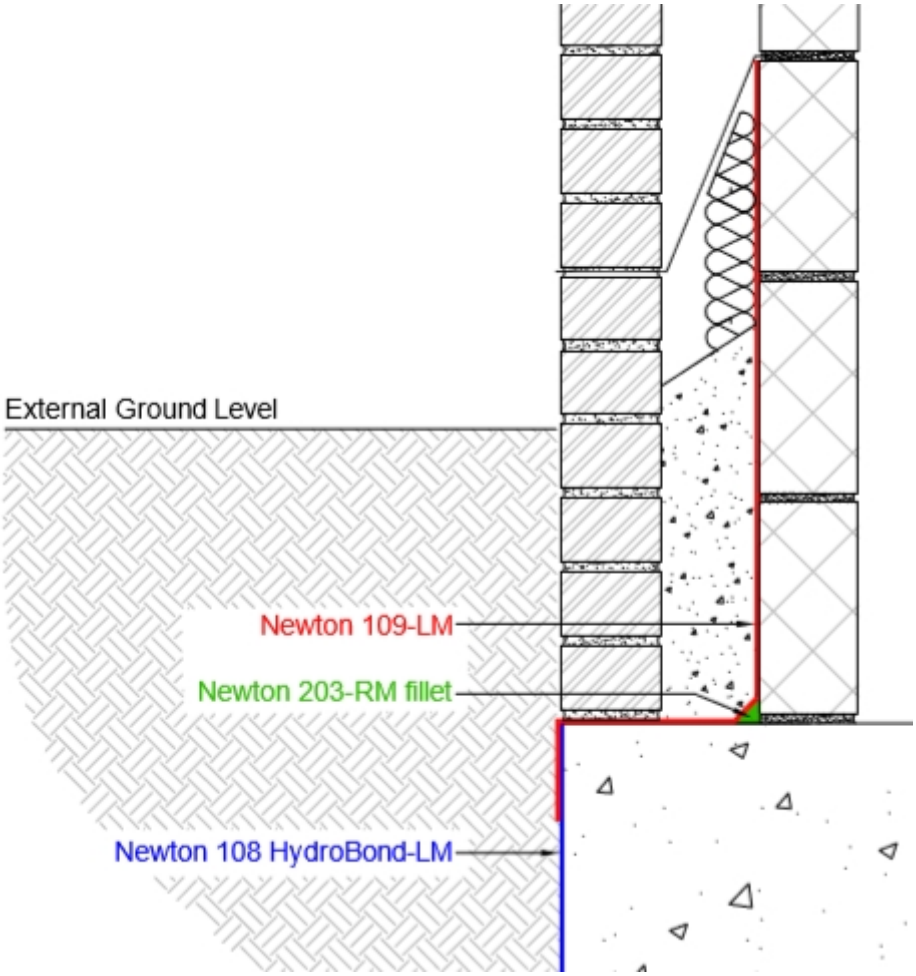
2.2 - EXAMPLES OF DETAILS

Figure 1 - typical termination to above ground



2.3 - INSTALLATION

2.3.1 Installer competence level
The Product shall be installed strictly in accordance with the instructions of the Agrément holder and the requirements of this Agrément. Installation shall be by contractors with employees trained and approved by the Agrément holder

2.3.2 Delivery, storage and site handling
The Product is delivered to site in storage containers, palletised and packaged for delivery as necessary. The Product should be handled with care to avoid damage and should be kept in dry frost-free conditions, stored off the floor in ventilated areas, and should not be exposed to direct sunlight for prolonged periods. Do not use the Product if the container is damaged.

2.3.3 General
108 HydroBond-LM must be applied with an industrial mechanical spray equipment; 109-LM can be applied by a hand-held airless sprayer, roller or brush.

2.3.4 Installation - pre-installation requirements
All surfaces to be waterproofed shall be structurally stable, clean, dry and free from release agents, dust, laitance, oils, paints or other forms of contamination. Holes and voids must be filled with a suitable non-shrink mortar and sharp projections must be removed.

2.3.5 Preparation
Prior to application, the weather conditions must be assessed to determine whether work should proceed or not:

- Newton 108 HydroBond-LM must be applied at an ambient temperature of 3 ˚C and rising;
- Newton 109-LM must be applied at an ambient temperature of 5 ˚C and rising;
- Application must not be undertaken if precipitation is expected within the next hour;
- When spraying the Product during windy conditions special care must be given to limit spray haze and measures should be taken to avoid contamination of adjacent surfaces.

2.3.6 General procedure - outline of key elements of the installation procedure

- All detailing work must be completed prior to the application to large surface areas;
- Application of Newton 108 HydroBond-LM should commence at the lowest level of the surface to be treated.

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2.4 - INDEPENDENTLY ASSESSED PRODUCT CHARACTERISTICS

Criteria	Newton 108 HydroBond-LM
Installation temperature	+ 3 to + 35 °C
Service temperature	- 15 to + 40 °C
Identification properties	
Average thickness, as applied to main concrete wall sections	1.0 mm (application @ 1.6 L/m^2)
Average thickness, as applied to blockwork and ICF wall sections	2.0 mm (application @ 3.2 L/m^2)
Average thickness, as applied to all other conditions (e.g. joints, changes of direction etc.)	2.0 mm (application @ 3.2 L/m^2)
Reaction to fire classification	
Reaction to fire classification BS EN 13501-1	Euroclass E *
Moisture control	
Watertightness according to BS EN 15814	class W2B * (watertight)
Criteria	**Newton 109-LM**
Installation temperature	+ 5 to + 35 °C
Service temperature	- 15 to + 40 °C
Identification properties	
Average thickness, as applied to main concrete wall sections	1.0 mm (application @ 1.6 L/m^2)
Average thickness, as applied to blockwork and ICF wall sections	2.0 mm (application @ 3.2 L/m^2)
Average thickness, as applied to all other conditions (e.g. joints, changes of direction etc.)	2.0 mm (application @ 3.2 L/m^2)
Reaction to fire classification	
Reaction to fire classification BS EN 13501-1	Euroclass E *
Moisture control	
Watertightness according to BS EN 15814	class W2B * (watertight)
Criteria	**The Product**
Radon diffusion coefficient in accordance with method K124/02/95, method C, ISO/DIS 11665-13	
Newton HydroBond-LM Radon diffusion coefficient D (m^2/s) without joint	$2{,}1.10^{-11}$

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 104 - optional detailing accessory - crystalline waterproofing powder;
- Newton 106 FlexProof-X1 - optional detailing accessory - paste for repairs & detailing;
- Newton 106 FlexProof NV - optional detailing accessory for movement joints;
- Newton 106 FlexProof Detailing Paste - optional detailing accessory;
- Newton 203-RM - optional detailing accessory - fast setting and curing mortar to quickly form 45° angled fillets at junctions between walls and floors;
- Newton 300 System Waterbars - generic reference to another Newton product group;
- Newton 306 SwellMastic - optional detailing accessory;
- Newton 307 PipeSeal - wall collar;
- Newton 309-M - contact adhesive - optional detailing accessory;
- Newton 314-BP - optional detailing accessory - bentonite powder - hydrophilic detailing powder for sealing the edges of 403 HydroBond to vertical surfaces;
- Newton 408 DeckDrain - drainage membrane to move water around the structure on horizontal sites;
- Newton 410 GeoDrain - drainage membrane to move water around the structure on sloping sites;
- Newton 901-P - low viscosity pre-primer for concrete and screed;
- Newton 902-P - primer for use over 901-P;
- Newton 908 LiquaBond - waterproofing accessory, densifier and bonding admixture for screeds and render;
- Newton 914-RT - reinforcement of the membrane at joints and around protrusions;
- Newton GeoTex - filtration textile usually used when welded to the Newton 410 GeoDrain, but sometimes used loose in its own right;
- Newton PipeCollar - optional detailing accessory - fabric reinforcement collar for 110 mm diameter pipes;
- Newton Fibran XPS 500-C - insulated protection and drainage board;
- Expansion joint board - generic reference to ground workers detailing accessory;
- Protection board - generic reference to a common component used on site - specification and use will depend on the project specific 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 - ENGLAND
REQUIREMENTS: THE BUILDING REGULATIONS 2010 AND SUBSEQUENT AMENDMENTS

- C2 Resistance to moisture - the Product can contribute to satisfying this Regulation.
- Regulation 7 Materials and workmanship - the Product is manufactured from suitably safe and durable materials for its application and can be installed to give a satisfactory performance.

3.2.2 - WALES
REQUIREMENTS: THE BUILDING REGULATIONS 2010 AND SUBSEQUENT AMENDMENTS

- C2 Resistance to moisture - the Product can contribute to satisfying this Regulation.
- Regulation 7 Materials and workmanship - the Product is manufactured from suitably safe and durable materials for its application and can be installed to give a satisfactory performance.

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

3.2.3.1 Regulations 8 (1)(2) Fitness and durability of materials and workmanship

- The Product is manufactured from acceptable materials and is considered to be adequately resistant to deterioration and wear under normal service conditions, provided it is installed in accordance with the requirements of this Agrément.

3.2.3.2 Regulation 9 Building Standards - Construction

- 3.4 Moisture from the ground - the Product can contribute to satisfying this Regulation.
- 3.15 Condensation - the Product can be designed and constructed to inhibit surface or interstitial condensation.
- 7.1(a)(b) Statement of Sustainability - the material of the Product can contribute to satisfying the relevant Requirements of Regulation 9, Standards 1-6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this standard; in addition, the Product can contribute to a construction meeting a higher level of sustainability as defined in this Standard.

3.2.3.3 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 - NORTHERN IRELAND
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 this Agrément.
- 27 Subsoil drainage - the Product can contribute to satisfying this Regulation.
- 28 Resistance to moisture and weather - the Product can contribute to satisfying this Regulation.
- 29 Condensation - the Product can be designed and constructed to inhibit surface or interstitial condensation.

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, Chapters 5.1 and 5.4.

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CHAPTER 4 - SOURCES

- BS EN 1504-2:2004 Products and systems for the protection and repair of concrete structures - Definitions, requirements, quality control and evaluation of conformity - Part 2: Surface protection systems for concrete
- BS EN 13501-1-2007+A1-2009 Fire classification of construction products and building elements. Classification using test data from reaction to fire tests
- BS EN 13967:2012+A1:2017 Flexible sheets for waterproofing. Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet. Definitions and characteristics
- BS EN 15814: 2011 + A2:2014 Polymer modified bituminous thick coatings for waterproofing. Definitions and requirements
- BS EN 15820:2011 Polymer modified bituminous thick coatings for waterproofing — Determination of watertightness
- BS ISO 1817:2015 Rubber, vulcanized – Determination of the effect of liquids
- BS ISO 3374:2000 Reinforcement products. Mats and fabrics. Determination of mass per unit area
- BS ISO 15105-1:2007 Plastics - Film and sheeting -- Determination of gas-transmission rate -- Part 1: Differential-pressure methods
- BS 8102:2009 Code of practice for protection of below ground structures against water from the ground
- BS 8485:2015 + A1:2019 Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings
- ISO/DIS 11665-10 Measurement of radioactivity in the environment - Air: radon-222 - Part 10: Determination of diffusion coefficient in waterproof materials using activity concentration measurement
- ISO/TS 11665-13:2016 Measurement of radioactivity in the environment - Air: radon-222 - Part 13: Determination of the diffusion coefficient in waterproof materials: membrane two-side activity concentration test method
- EOTA TR 007 Determination of the resistance to static indentation
- NHBC Standards 2019 Chapter 2.1 The Standards and Technical Requirements and Chapters 5.1 Substructure and ground bearing floors and 5.4 Waterproofing of basements and other below ground structures

Remark: apart from these sources confidential reports may also have been assessed; any relevant 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
-	First Issue	C Vurley	C Forshaw	August 2019

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