System 100

NEWTON 108 HYDROBOND-LM

Seamless Rubber Waterproofing Membrane

NEWTON WATERPROOFING

Rev 5.3 - 26 November 2018

PRODUCT CODE - 108-LM & 108-LM-1

NEWTON SYSTEM 100 - LIQUID WATERPROOFING MEMBRANES

INTRODUCTION

Newton 108 HydroBond-LM is a highly radon resistant, cold and spray-applied seamless rubber waterproofing membrane for the external waterproofing of basements (including covered decks) and foundation walls. Normally specified as part of our HydroBond® System in conjunction with Newton 403 HydroBond®, the membrane can also be used on its own, terminating to raft or strip foundations. Newton 108 HydroBond-LM is very quick to apply, at up to 1000m² per day, and is not subject to the delays normally associated with liquid membranes as it can be applied in cooler and damper conditions, and without a primer. Newton 108 HydroBond-LM is extremely puncture resistant, with high elasticity and a 95% recovery memory. The membrane becomes fully engaged into the concrete surface to prevent water tracking and is suitable for all below-ground and earth-retained structures, ranging from domestic basements to the largest civil engineering projects.

BDA Expert Centre
BAB 17-031/04/A

Newton 108 HydroBond-LM can be used together with Newton 403 HydroBond to provide a complete waterproof envelope to the structure, forming a Type A (barrier) waterproofing solution suitable for Grades 1, 2 and 3 as defined by BS 8102:2009. Where space is tight, Newton 109-LM can be applied by roller, brush or small airless spray machine.

The Newton HydroBond® System is supported by BDA Certificate BAB 17-031/04/A and is accepted by the NHBC as a suitable waterproofing system for Type A Waterproofing to Grades 1, 2 & 3 - BS 8102:2009.

APPLICATION

PROPERTIES

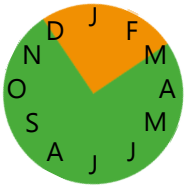
H - Hardness and Durability; E - Elasticity and Flexibility; V - Vapour Permeability; C - Curing and Drying; W - Working Time; U - UV Stability

PACKAGING

Single component plus catalyst

COVERAGE

OUTDOOR SEASON



KEY BENEFITS

- Cold applied, fully-bonded seamless membrane
- Very elastic with no shrinkage
- No primer required
- Very quick to apply - up to 1000m² per day
- Cost efficient - The low price of the membrane, coupled with high application rates = a very low installed rate per square metre
- Solvent-free, non-toxic and odourless
- Non-flammable - No VOCs
- Chemically resistant
- Highly radon resistent

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TECHNICAL DATA

Features	Result	Units
Form	Liquid	
Colour	Brown (in container)	
Density/Specific Gravity	1.1	
Packaging – Drum	200	Litres
Packaging – IBC	1000	Litres
Shelf life	12	Months
Pot life	N/A	
Application rate – RC walls - Waterproofing only	1.6	Litres/m^2
Application rate – Joints in concrete walls – band of 250 mm	3.2	Litres/m^2
Application rate – Block and ICF walls	3.2	Litres/m^2
Application rate – Radon barrier and	3.2	Litres/m^2
Application method	Specialist machine	
Application temperature	+3 to +35	ºC
Service temperature	-15 to +40	ºC
Odour	None	
VOC	0	%
Viscosity – SSF @ 25ºC	15 – 20 seconds	
pH	11 -13	

Curing	Result	Units
Ready for next coat (over joints)	30	Minutes
To not be adulterated by rain	2	Minutes
Ready for temporary foot traffic/protection boards	30	Minutes
Fully cured	30	Minutes

Cured Performance	Result	Units	Test Method
Colour	Black		
Membrane thickness - RC walls	1.0	mm	
Membrane thickness - RC joints	2.0	mm	
Membrane thickness - Radon barrier and Block & ICF walls	2.0	mm	
Membrane thickness - Horizontal RC elements	3.0	mm	
Density/Specific gravity (no reinforcement)	1.1		
Softening temperature	> 130ºC		Ring & Ball
Adhesion to concrete	0.62	N/mm^2	DIN 53232
Tensile strength & elongation at break (reinforced)	0.68	N/mm^2	EN ISO 527-3:1995
Tensile strength & elongation at break (reinforced) (aged)	0.58	N/mm^2	EN ISO 527-3:1995
Loading capability (no reinforcement) - Class 1	0.06	MN/mm^2	EN 15815
Resistance to static indentation (reinforced)	250	N	EOTA TR007:2004
Crack bridging ability (no reinforcement) - Class CB2	≥2	mm	
Resistance to fatigue movement - 1000 actions @ -10ºC	Pass		EOTA TR008:2004
Dimensional stability at high temperature - no dripping	≥70	ºC	EN 15818
Low temperature flexibility @ -10ºC	Pass		DIN 52123
Flexibility at low temperature @ 0ºC	Pass		EN 15813
Water vapour diffusion resistance – S_d value	72.4	m	BS EN 1931
Water vapour diffusion resistance - μ value	36200	μ	Calculation from S_d value
Water vapour diffusion resistance	362	MNs/g	Calculation from S_d value
Water tightness	7	bar	ISO=DIS 7031
Water resistance - 21 days at 21ºC	Watertight		EN 15817
Impact resistance after UV-ageing - 1000h - 10 mm	Pass		EN 12691:2001
Radon gas diffusion resistance (2 mm membrane)	2.4×10^{-11}	M^2/s	K124/02/95
Reaction to fire classification	Euroclass B2		DIN 4102-1

The above data, even if carried out according to regulated tests are indicative and they may change when specific site conditions vary.

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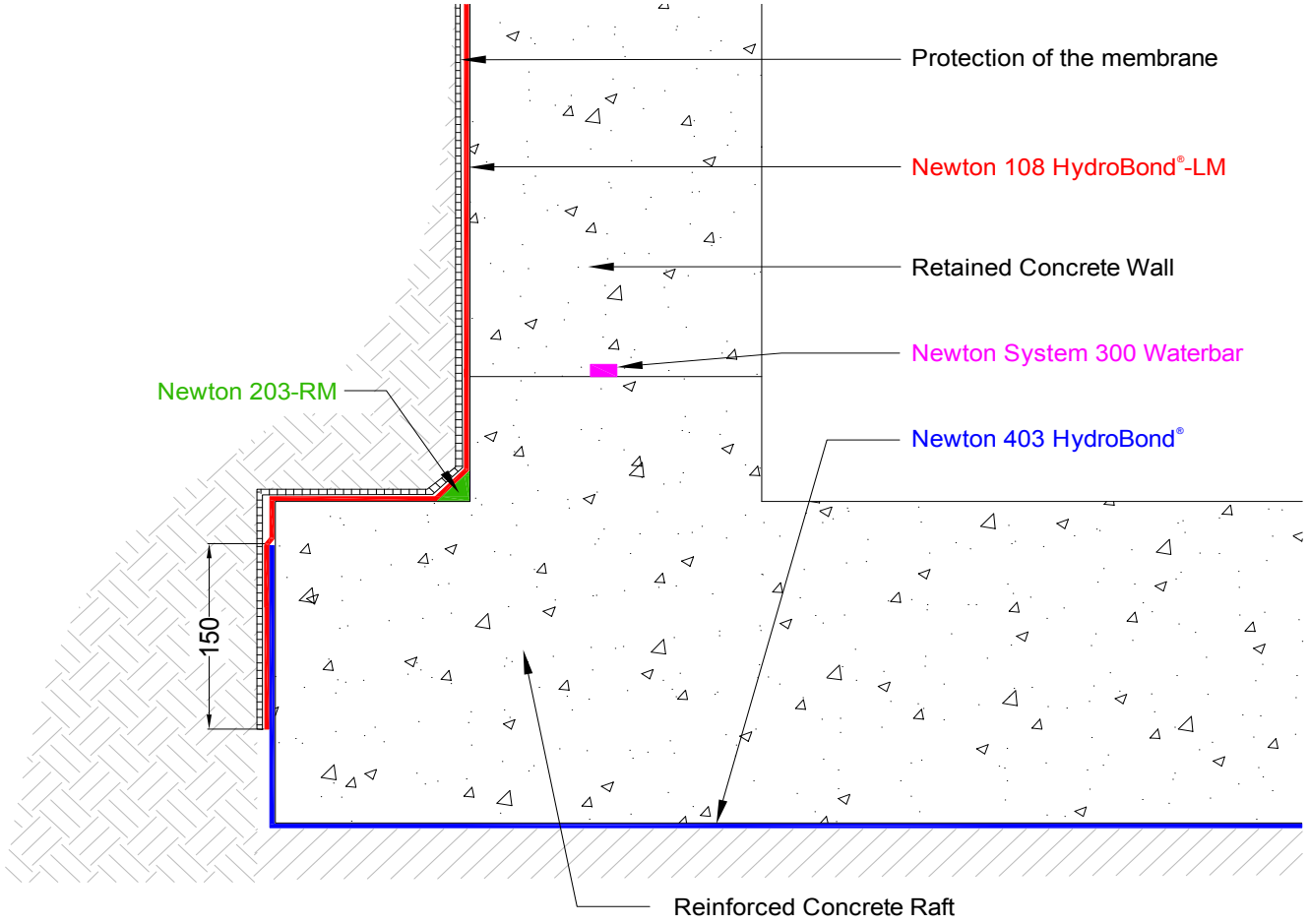
TYPICAL DETAIL

Full HydroBond System showing Newton 403 HydroBond below the RC raft and Newton 108 HydroBond-LM to the outside of the exposed RC wall, lapping over the 403 HydroBond at the toe. The building is fully encapsulated by the membrane which is very resistant to puncture. Newton 108 HydroBond-LM is fully and monolithically adhered to the concrete so that if defects did occur, water cannot track to the joints.



TYPICAL APPLICATIONS

- Waterproofing and radon protection of basement walls as part of the Newton HydroBond System
- Standalone waterproofing and radon membrane for basements, foundation and earth-retained walls

SUITABLE SUBSTRATES

Correctly prepared substrates of:

- Concrete of at least 20 kN*
- Screed*
- Concrete block walls with flush pointing
- Insulated formwork walls (ICF)
- Newton 908 LiquaBond screed

SUITABLE SURFACES

- Walls - Positive pressure
- Covered and loaded decks - Positive pressure

*Priming required to horizontal surfaces

METHOD OF APPLICATION

Newton 108 HydroBond-LM can only be sprayed with a specialist spray machine. A nationwide network of trained applicators is in place.

SPECIALIST TOOLS REQUIRED

No specialist tools are required apart from the spraying machine mentioned above.

SPECIFICATION

Newton Waterproofing Systems are in partnership with RIBA NBS who publish details of our products and systems within their specification clause library to allow Architects ease of specification through their NBS Plus interface. NBS clauses can be accessed via the technical resources area of the web site where a live NBS Feed is available at NBS Plus Live Feed

Our website has a wide choice of downloadable Technical Drawings, and a large selection are also available either via FastrackCAD, or as BIM objects on the National BIM Library and/or BIMobject.com

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TRAINING AND COMPETENCY OF THE USER

Newton 108 HydroBond-LM should be installed by those with an understanding of the requirement to waterproof retained structures and the knowledge and training to use the product as part of a coordinated approach to the waterproofing of the structure. In most cases, this will require further waterproofing products in order to achieve the required habitable grade defined by BS 8102:2009.

Newton 108 HydroBond-LM can only be sprayed by those who have access to a suitable spraying machine and have been trained in the use of the machine and how to spray the product correctly.

Newton NSBC contractors are trained by Newton Waterproofing Systems in the correct specification and installation of Newton waterproofing products and will provide the client with a meaningful insurance-backed guarantee for the waterproofing system.

LIFE EXPECTANCY

When specified, installed and protected in accordance with the Data Sheet, fully and permanently isolated from UV light and physical damage or wearing, and only to those substrates confirmed within, Newton 108 HydroBond-LM has a service life that can be equal to the design life of the structure.

The membrane is not hard wearing and should be protected during backfilling.

APPLICATION RATE - RC WALLS

Joints - The membrane is applied to a total thickness of 2.0 mm, requiring an application rate of 3.2 litres/m^2.

Bed in a band of Newton 914-RT reinforcement tape during the joint application.

Changes in direction - The membrane is applied to a total thickness of 2.0 mm, which requires an application rate of 3.2 litres/m^2.

Internal changes of direction require a 25 mm x 25 mm smoothing fillet of Newton 203-RM.

Main wall sections - The membrane is applied to a total thickness of 1.0 mm, which requires an application rate of 1.6 litres/m^2.

APPLICATION RATE - BLOCK & ICF WALLS

The membrane is applied to a total thickness of 2.0 mm, which requires an application rate of 3.2 litres/m^2.

APPLICATION RATE - RADON BARRIER

Minimum total thickness of 2.0 mm, which requires an application rate of 3.6 litres/m^2.

APPLICATION RATE - DECKS

Minimum total thickness of 3.0 mm, which requires an application rate of 4.8 litres/m^2.

ANCILLARY PRODUCTS

- Newton 403 HydroBond - Self healing and fully-bonded sheet membrane that with Newton 108 HydroBond-LM and Newton 109-LM forms the Agrément certified HydroBond System
- Newton 109-LM - Paint-applied variant that does not require the specialist spraying machine. Can be applied by brush, roller or standard airless spraying machine. Also used for detailing such as at termination to DPC as the product is UV-stable
- Newton 914-RT - Strengthening tape for changes in direction and joints
- Newton 410 GeoDrain - Protection board or drainage membrane for sloping sites
- Newton 408 DeckDrain - Drainage membrane for the removal of water from horizontal sections or decks to suitable drainage. Can also be used as protection board and as a drainage membrane for sloping sites.
- Newton GeoTex - Non-woven geotextile filter layer for protecting the membrane when applied to covered and loaded decks
- Newton PipeCollar - Flexible preformed collar for sealing pipe protrusions to the membrane

CONSTRUCTION - CONCRETE WALLS

Concrete walls should be constructed to BS EN 1992-3, with the intention of providing a Type B form of waterproofing as described within BS 8102:2009. Joints should be designed out where possible and where unavoidable, they should be waterproofed with Newton 315 Polymer-Waterbar or by a proprietary shrinkage joint sealing system.

CONSTRUCTION - COVERED DECKS

Concrete decks should also be constructed to the same standard, and as a continuation of the concrete walls.

If other means of construction are used, such as precast beams or block and beam, a structural concrete slab must be placed over the precast elements, isolated by a slip membrane to ensure that movement is not transferred to the waterproofing.

The deck should be constructed to adequate falls so that water drains away from the deck and is collected by a perforated pipe or similar. If a screed is required to form the fall, this must be sand/cement with Newton 908 LiquaBond mixed to the gauging water at 1:2.

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CONSTRUCTION - BLOCK & ICF WALLS

Walls should be designed by a Structural Engineer to withstand the load of the retained earth, as well as the expected water pressure defined by BS 8102:2009. The mortar joints should be pointed flush to the surface of the wall.

SURFACE PREPARATION - CONCRETE

- The surface must be clean, and free from dust, laitance, release agents, oils, paints or other forms of contamination. Jet washing with a mild detergent may be required. If contaminants are still present, more aggressive preparation, such as grit blasting, will be required
- Holes, cracks, voids and honeycombing should be filled and made good with Newton 203-RM
- Pin holes and non-structural cracks that are between 0.5 mm and 2 mm wide, and block walls, should be filled with sand/cement using a bag rubbing technique

Concrete must have reached first stage cure at between 14 and 28 days, depending on the water/cement ratio of the mix.

SURFACE PREPARATION - BLOCK WALLS

- Mortar joints should be flush pointed. If they are not, re-point or apply a smoothing coat of sand/cement render with Newton 908 LiquaBond mixed into the gauging water at a ratio of 1:2
- Large holes or indentations should be filled with Newton 203-RM
- Remove snots
- Blocks with an open surface should be smoothed with sand/cement using a bag rubbing technique

SURFACE PREPARATION - ICF

- Holes, voids and indentations should be filled with Newton 203-RM
- Where the insulation is badly damaged, remove back to good formwork and make good with Newton 203-RM

SURFACE PREPARATION - DECKS

Horizontal elements will require priming with Newton 901-P and/or Newton 902-P primers. Please refer to the preparation requirements within these two documents.

PRIMING

Newton 108 HydroBond-LM does not require a primer unless applied to horizontal surfaces. With porous substrate, the operative may apply a mist coat of the product without the salt catalyst to seal the surface prior to the main application.

JOINTS & CHANGES OF DIRECTION

- Reinforce static joints with Newton 914-RT
- Apply over shrinkage joints, using 25 mm wide masking tape to create delamination
- With movement joints, lap the 108-LM into the joint and then use our standard Newton 106 FlexProof movement joint detail. Please speak to our Technical Department if you require assistance on the correct specification to joints
- Internal changes of direction require a smoothing fillet of 25 mm x 25 mm. Consider using Newton 203-RM for the smoothing fillet as the fillet will be cured ready for application in 15-30 minutes

MIXING & STIRRING

Newton 108 HydroBond-LM does not require mixing or stirring.

APPLICATION

Trained operatives will apply the correct thickness of material by spraying with the specialist spraying machine.

LAPPING TO NEWTON 403 HYDROBOND

When used in conjunction with Newton 403 HydroBond or 403 HydroBond-GB as a full HydroBond System, Overlap by a minimum of 150 mm as shown on the detail on page 3.

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CURING

The product forms an instantly set rubber membrane that is dry to the touch within seconds of application. There are no curing requirements.

POT LIFE & FURTHER USE

Unused product remains in the storage container and so has no pot life.

If the container is sealed, the product has a useful life of up to 3 months.

CLEANING

The machine is cleaned by the trained operatives ready for next use.

Tools can be cleaned with water immediately after use.

PROTECTION OF THE MEMBRANE

Newton 108 HydroBond-LM should be protected during the backfilling operation. This can be achieved with Newton Fibran XPS 500-C or protection boards. Alternatively, Newton 410 GeoDrain can be used as a drainage and protection layer.

To horizontal surfaces, the membrane must be both protected and loaded:

- Protect with Newton GeoTex geotextile
- Drain with Newton 408 DeckDrain
- Load with earth or floor finish

If screed or concrete is to be placed above the membrane, 100% broadcast a tack-coat of Newton 109-LM with dry-kiln sand, even if a DPM is used.

LIMITATIONS

The product is not seasonal, but careful planning is required for use in the winter.

Regardless of the time of year, do not apply prior to rain - please see information within the curing table on page 2.

- Do not apply at temperatures lower than +3°C or higher than +35°C
- Always use the correct preparation and priming of the support substrate as directed above
- Newton 108 HydroBond-LM is sprayed by a large specialist spraying machine. In some cases it may not be possible to site the machine close enough to the working area
- Delivery to site and setting up of the machine can be costly for application to areas below 250 m^2

COLOUR

Brown in container. Black when cured.

STORAGE

Store in dry conditions at temperatures between +5°C and +25°C with containers fully sealed. Do not expose to freezing conditions.

If these conditions are maintained and the product packaging is unopened, then a shelf life of up to 12 months can be expected.

HEALTH & SAFETY

Use appropriate PPE for the environment the system is installed within. Use products only as stated within this Data Sheet and MSDS.

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