

HydroBond SA[®]

Type A - Self-Adhesive Waterproofing Membrane

Revision: 2.2 - 30th January 2023
Code: 401M

INTRODUCTION

[Newton HydroBond SA](#) is a high performance, self-adhesive membrane for the external waterproofing of below-ground structures such as basements, water holding tanks and culverts. A composite of cross-orientated HDPE and bitumen polymer adhesive, the membrane is post-applied to concrete after removal of formwork, or to built walls such as block or ICF. The membrane is flexible and durable and exhibits high resistance to impact, tear, puncture and settlement.

This combination of high strength and high flexibility results in excellent crack-bridging capability at places where cracks will occur within the concrete. The bitumen polymer adhesive provides a very high strength bond to the substrate at temperatures as low as 5°C with exceptional peel adhesion qualities, so preventing the migration of water between correctly prepared substrate and the membrane. The product has been tested for water tightness at the laps as per the requirements of BS8102:2022 section 8.2.2 and can be considered fully bonded as per figure 9 of the British Standard.

Newton HydroBond SA overlaps with the pre-applied HydroBond membranes installed below the concrete raft to provide a complete waterproof envelope to the structure to achieve Type A (barrier) waterproofing suitable for Grades 1a, 1b, 2 and 3 as defined by BS 8102:2022. The membrane is suitable for all below-ground and earth-retained structures from domestic basements to the largest civil engineering projects. Where additional protection against ground gasses is required, [Newton HydroBond SAGM](#) should be used.

Newton HydroBond SA can be used alongside other Newton products to provide a coordinated and combined approach to the waterproofing of the whole structure that includes protection against water penetrating through construction joints, through and around service entries and to movement joints.

Correctly protected, the [Newton HydroBond System](#) will provide, under normal service conditions, a durable waterproof barrier for the life of the building to which it is installed.

KEY BENEFITS

- Type A (barrier) waterproofing membrane
- Resistant to aggressive ground water chemicals
- Tough and durable
- Dimensionally stable and flexible for easy detailing
- Quick and simple to install - no jointing tapes

TYPICAL APPLICATIONS

- Post-applied sheet waterproofing to retaining walls of below ground structures
- Used in conjunction with Newton HydroBond pre-applied membranes to provide continuous Type A waterproofing around the whole structure

SUITABLE SUBSTRATE

- Reinforced concrete
- Correctly prepared walls of block and Insulated Concrete Form-Work (ICF)
- Prepared steel

SPECIFICATION

Newton Waterproofing Systems work in partnership with RIBA NBS and [NBS Source](#), which integrates into project workflows, providing all product data from Newton's NBS BIM Objects, NBS Plus Clauses and RIBA Product Selector into one single source of product information.

NBS Source also hosts a large selection of Newton [case studies](#), as well as product [literature and certifications](#). A wide range of drawings are available [on our website](#).



TRAINING AND COMPETENCY OF THE USER

Newton HydroBond SA 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, which in many cases will require further waterproofing products so as to achieve the required habitable grade as defined by BS 8102:2022. [Newton Specialist Contractors \(NSBCs\)](#) 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.

TECHNICAL DATA

Performance	HydroBond SA		Units
Colour	Black		
Material	Cross-linked HDPE/bitumen adhesive		
Width	1.05		m
Length	19.05		m
Area	20.06		m ²
Thickness	1.50		mm
Density	1650		g/m ²
Packaged weight	33.0		kg
Shelf life	12		Months
Application temperature	+5 to +45		°C

Installed Performance	Result	Units	Test Method
Elongation at break (Machine)	≥ 130	%	DIN EN 12311-2
Elongation at break (Traverse)	≥ 130	%	DIN EN 12311-2
Tensile strength (Machine)	≥ 2.5	N/50 mm	BS EN 12311-2
Tensile strength (Traverse)	≥ 2.5	N/50 mm	BS EN 12311-2
Water tightness - 60 kPa for 24 h	Pass		BS EN 1928 – Method A
Resistance to static loading - 20 kg load	Pass		BS EN 12730
Resistance to tear - Nail shank (Machine)	≥ 100	N	EN 12310-1
Resistance to tear - Nail shank (Traverse)	≥ 100	N	EN 12310-1
Durability of water tightness against ageing	Pass		EN 1847 Method A 60 kPa
Durability of water tightness against chemicals	Pass		EN 1847 Method A 60 kPa
Water vapour transmission	0.09	g/(m ² /24h)	EN 1931
Water vapour diffusion resistance – S _d value	110	m	Calculated from μ-value
Water vapour diffusion resistance – μ value	220,000	μ	EN 1931
Water vapour diffusion resistance	73333	MNs/g	Calculated from μ-value
Radon gas diffusion resistance	7.5 x 10 ⁻¹²	m ² /s	K124/0295
Resistance to fire	Euroclass F		BS EN 13501-1
Water tightness of joint seams against water in liquid phase. Joint seam positioned centrally under a pressure cylinder Ø 30 cm: - Water pressure: 100 kPa (1 bar) - Test period: 72 hours	Side lap: Tight		DIN EN 1928 procedure A
	End lap: Tight		DIN EN 1928 procedure A
Lateral water migration. Damaged area positioned centrally under a pressure cylinder Ø 100 mm; Test on composite body: - Substrate: Concrete C 30/37 (28 d) - Water pressure: 500 kPa - Test duration: 7 days	Primed concrete - Watertight. No lateral migration into the boundary layer: tight		DIN EN 1928 procedure A
	Without primer - Watertight. No lateral migration into the boundary layer: tight		DIN EN 1928 procedure A

FULLY BONDED MEMBRANES

Type A (barrier) protection membranes should be designed and installed to try to overcome defects as outlined in BS 8102:2022 Section 4.3.2 'Defects and remedial measures'. The requirements for the specific properties of the Type A barrier membrane are outlined in Section 8 of the British Standard, on 'Type A (barrier) protection', including Table 3 – 'Waterproofing barriers'.

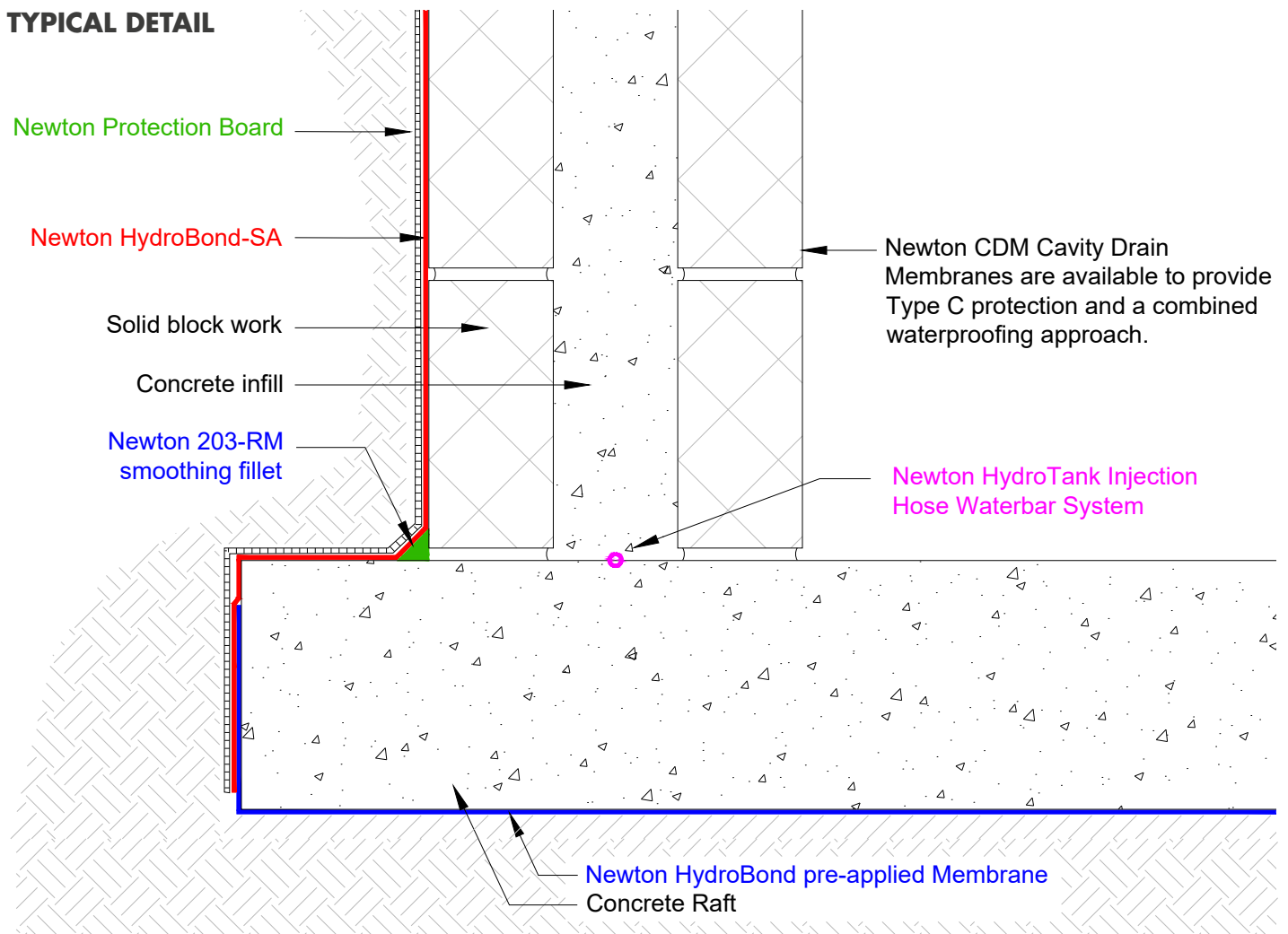
EXTERNAL pre- and post-applied membranes are resisting a positive hydrostatic head, therefore it is essential that these systems form a full homogenous tank around the structure. Consequently, the membrane itself and all edge and end laps should be tested for resistance to water pressure.

The membrane should also be fully bonded to prevent water entering from a defect and tracking between the membrane and the structure; also known as lateral migration of water from a defect as per BS 8102:2022, Figure 9 – 'Effect of bonded or partially bonded barriers'.

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TYPICAL DETAIL



This can be tested by BS EN 1928, Method A. The level of full bond and suitability of use is relevant to both the water depth/pressure tested for both lateral migration and watertightness of the membrane and the laps.

INTERNAL post applied membranes are resisting a negative hydrostatic head, therefore have to form a full homogenous tank that will achieve a sound enough bond to the structure to withstand counterthrust water pressure without the need for a loading structure.

This can be tested to DIN 1048/BS EN 1542 and the level of full bond and suitability of use is relevant to both the water depth/pressure tested for both lateral migration and watertightness of the membrane and the laps.

REQUIRED ANCILLARIES

- [Newton HydroBond SA LT Primer](#) - 5 litres - Purchase code: 401-P5. Bitumen-based primer used to enhance bond and to seal porous substrate prior to the application of the self-adhesive membrane. Suitable for use in cooler and damp conditions
- Newton HydroBond SA Reinforcing Strip - 300 mm x 20 m roll - Reinforces the wall-to-foundation joint and provides enhanced impact and damage protection at external corners

SYSTEM ANCILLARY PRODUCTS

- [Newton Pipe Collar](#) - Flexible preformed collar for sealing pipe protrusions
- [HydroSeal 203-RM](#) - Fast-curing repair mortar to fill voids and cracks and to create smoothing fillets
- [Hauff-Technik](#) - Full range of products for the sealing of pipes services

SPECIALIST TOOLS REQUIRED

No specialist tools needed.

STORAGE

Store in dry conditions at temperatures between +5°C and +45°C. Do not expose to freezing conditions. Do not allow to freeze.

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PURCHASE CODES

Product	Purchase Code
• HydroBond SA	401M
• HydroBond SAGM	401GM
• HydroBond SA Primer	401P
• HydroBond SA Reinforcing Strip	401-RS
• HydroBond 403 Plus	HB-2
• HydroBond 403 Plus GB	HBGB
• HydroBond 402 CCS-M	402
• HydroBond 2K-Flex	HB-2K
• HydroBond 109-LM	109
• HydroBond 410 GeoDrain	M18
• HydroBond Protection Board	HBPB
• HydroSeal 203-RM	203-RM
• Pipe Collar	A35

SYSTEM PRODUCTS

- [HydroBond 403 Plus & HydroBond 403 Plus GB](#) - Self-healing and fully-bonded, pre-applied sheet membranes. GB is the gas variant.
- [HydroBond 402 CCS-M](#) - Fully-bonded, pre-applied sheet membrane
- [HydroBond 109-LM](#) - UV-table, single component liquid bitumen that is also a radon barrier
- [HydroBond 410 GeoDrain](#) - Protection board or drainage membrane for sloping sites
- [HydroBond 2K-Flex](#) - Bitumastic paste that cures quickly to form a thick, flexible, membrane
- HydroBond Protection Board

LIFE EXPECTANCY

Newton HydroBond SA will provide, under normal service conditions, a durable waterproof covering for the life of the building to which it is installed. Please note that this is not the guarantee. The waterproofing guarantee is provided by the specialist waterproofing contractor who installs the product. Product clauses can be accessed via the product page on the Newton website.

LIMITATIONS

- Do not apply at temperatures lower than +5°C or higher than +45°C

SURFACE PREPARATION - GENERALLY

Application should not be carried out under wet conditions or onto damp substrates. Note that condensation can occur on a cold substrate even in dry conditions. Ensure all previously applied coatings are compatible and are fully cured. Certain coatings may not require priming, such as where block or ICF walls have been prepared with HydroBond 2K-Flex.

Concrete walls

- Power wash with a commercial power washer to remove surface contaminants such as release agents
- Fill/repair concrete defects such as honeycombing, cracks and holes with HydroSeal 203-RM

Concrete foundation

Where the self-adhesive membrane laps to or terminates to the horizontal toe of the foundation:

- Remove surface laitance by grinding or grit-blasting
- Remove all dust by vacuum and wipe with a damp cloth

Block walls

- Remove mortar snots. Clean with stiff brush to remove surface dirt and debris
- If not flush pointed, smooth with a 2 mm (dry) coat of HydroBond 2K-Flex

ICF walls

- Smooth and fill joints and surface damage with a 2 mm (dry) coat of HydroBond 2K-Flex

TREATMENT OF ANGLES

- Fillets should be installed at internal angles to avoid the membrane bridging the surfaces and forming voids beneath the membrane
- Fillets can be made with HydroSeal 203-RM, mixed 2:1 with sand
- External angles should be chamfered
- All internal and external angles should be reinforced with Newton HydroBond Reinforcing Strip, 300mm wide, centred along the corner angle

PRIMING

Unless smoothed with HydroBond 2K-Flex as described above, all substrate should be primed before application of the self-adhesive membrane with Newton HydroBond SA LT Primer. Purchase code 401-P5, sold in 5 litre containers.

Newton HydroBond SA LT Primer is moisture-tolerant, allowing it to be used on green concrete or damp-to-touch substrates. It can be applied at low temperatures and is quick drying. Allowing early application reduces delays to the building programme, even in marginal weather conditions.

Priming will help bind any remaining surface dust and will help stabilise a friable and powdery surface.

Apply one even coat of primer by brush. Application rate:

- Concrete: 6-8m²/litre
- Lightweight concrete block: 6-8m²/litre

Only prime an area that can be covered with membrane during the working day. Application of the membrane should commence as soon as the primer is dry.

APPLICATION NOTES

NOTE: Application is a two-person operation.

The self-adhesive membrane has a paper backing that must be removed to expose the adhesive surface.

At the edge and ends of the membrane is a polythene strip that must be removed to expose the adhesive at the selvage edge to adhere laps of the membrane.

When bonding the membrane to the surface, care should be taken to avoid forming air pockets beneath the membrane. This can be achieved by applying pressure from the centre towards the edges.

- Edge overlaps should be at least 50 mm and at least 100 mm to the end laps
- Ensure the laps are dust-free
- Membrane and laps should be firmly pressed to ensure optimum adhesion. A wooden roller is recommended to ensure firm and even pressure is applied to the whole membrane surface.
- End-of-roll overlaps of adjacent lengths should be staggered to avoid them being side by side on adjoining rolls, causing a four fold overlap

APPLICATION

- Start by securing the end of the membrane at the top of the vertical surface. The precise method will depend on site conditions, including the height of the surface, accessibility, and the construction detail
- A scaffolding tower may have to be used to support the applicators and the roll of membrane
- The top of the vertical membrane should be linked to any other waterproof installation which may already exist or will be installed
- It may also be necessary to mechanically fix the membrane at the top. Do this by either "chasing" the top edge into the substrate or by nailing a wooden batten across its width
- Position the roll at the top of the vertical surface and unwind about one metre.
- Peel back the first 500mm of release paper, fold it down, then press the exposed self adhesive compound onto the previously primed surface to achieve a strong bond

- Slowly unwind and lower the roll of membrane towards the ground until the sheet is hanging vertically against the surface
- Take hold of the release paper that was folded back in both hands on either side of the membrane and slowly but firmly pull it downwards. It is preferable for the release paper to be wound around a wooden pole as this will make it easier for an even tension to be applied and to gather the paper up as it is removed
- As the release paper is peeled away, the self adhesive compound should be pressed firmly against the surface working from the centre of the membrane outwards to avoid trapping air.
- If an end of roll overlap joint has to be formed (on a high structure), the end-lap dimensions should be in accordance with the specified minimum. The overlap joint should be formed by lapping the end of the first (highest) roll on top of the second (lowest) roll and carefully pressed down using a hand roller
- Extra mechanical fixing is not necessary because of the adhesive strength of an overlap joint
- Once the first width has been applied, the next width is applied adjacent to it in exactly the same way, with a side-lap joint of the membrane alongside

LAPPING TO PRE-APPLIED MEMBRANES

Newton HydroBond SA is lapped to Newton HydroBond System pre-applied membranes by 100 mm.



Ensure that the surface of the membrane to be lapped to is clean and dry.

PROTECTION OF THE MEMBRANE

- Newton drainage membrane, [HydroBond 410](#)

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		<p>Newton Waterproofing Systems Newton House 17-20 Sovereign Way Tonbridge Kent TN9 1RH</p>	<p>401M BS EN 13967:2012 1213 Flexible sheets for waterproofing. Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheets</p>	
Essential characteristics to BS EN 13967:2012	Test Standard & Conditions		Result	Unit of measure
Water tightness	<p>BS EN 1928 Method A Water pressure: 2 bar Test period: 24 hrs</p>		Watertight	
Durability	<p>EN 1847 Method A Watertightness after artificial ageing Watertightness after exposure to chemicals</p>		Watertight	
Dangerous substances			NPD	
Reaction to fire	13501-1:2019-05		Euroclass F	

Newton Waterproofing Systems reserve the right to update product literature at any time. Please always refer to our [website](http://www.newtonwaterproofing.co.uk) for the latest versions.