

HydroBond 2K-Flex

Thick, Bitumen Waterproof Coating

Revision: 2.7 - 5th December 2023
Code: HB-2K

INTRODUCTION

Newton HydroBond 2K-Flex is a radon gas certified, flexible, two-component, cold-applied, seamless bitumen/rubber waterproofing membrane used primarily for the external waterproofing of earth-retaining structures such as basements and foundation walls. Polymer modified and polystyrene filled, Newton HydroBond 2K-Flex forms a thick, highly flexible barrier to water ingress that can be applied to thicknesses of 8 mm and is able to fill voids, cracks and joints of up to 5 mm.

The product is solvent-free and environmentally friendly, consisting of a bitumen emulsion and a reactive powder. The chemical reaction of these components, following mixing, achieves quick rain-fastness and an accelerated drying process to produce a firm, yet still highly flexible coating. The paste-like and stable consistency of the material enables application of high layer thicknesses, which is especially beneficial for the waterproofing of irregular substrate.

Applied by trowel or by airless spray machine, the coating is highly flexible, crack-bridging and resistant to any aggressive substances occurring in natural soil and is suitable for waterproofing to DIN 18533 W1-E, W2.1-E, W3-E and W4-E. Newton HydroBond 2K-Flex is also a constituent product of the [Newton HydroBond System](#)® for Type A Waterproofing to Grades 1a, 1b, 2 and 3 - BS 8102:2022.

APPLICATION



PROPERTIES

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



PACKAGING

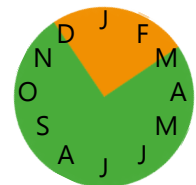


Two components within one package

COVERAGE



OUTDOOR SEASON



KEY BENEFITS

- Thick coating, fully-bonded seamless waterproofing membrane with excellent crack bridging capabilities
- Particularly easy trowel application due to low material weight
- Fast reaction time due to the special powder catalyst
- Highly flexible with 2 mm crack bridging due to high-quality polystyrene and polymer modification
- Quick-drying and rain-fast after a short period
- Solvent-free, non-toxic and odourless
- Non-flammable - No VOCs
- Radon gas resistance
- Sprayable with suitable equipment
- Adheres insulating panels to concrete, masonry and thoroughly dried thick bituminous coatings



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TECHNICAL DATA - HydroBond 2K-Flex

Features	Result	Units
Form	Bituminous paste	
Colour	Black	
Density / Specific gravity	0.72	
Packaging - Bucket	30	Litres
Shelf life	12	Months
Pot life	90	Minutes
Application rate in 2 coats - DIN 18195 - W2.1-E - Water pressure \leq 3 m	5.6	Litres/m ²
Application method	Trowel & airless spray	
Application temperature	+5 to +30	°C
Service temperature	-15 to +70	°C
VOC	0	%
Viscosity	Thick paste	
pH	11 - 11.5	

Cured Performance	Result	Units	Test Method
Colour	Black		
Membrane thickness - 2 coats	4.0	mm	
Compressive strength - Class C2A	0.30	MN/mm ²	EN 15815
Crack bridging ability (no reinforcement) - Class CB2	\geq 2	mm	EN 15812
Resistance to fatigue movement - 1000 actions @ -10°C	Pass		EOTA TR008:2004
Dimensional stability at high temperature - no sliding	Pass		EN 15818
Flexibility at low temperature	Pass		EN 15813
Water vapour diffusion resistance – Sd value	26.3	m	BS EN 1931
Water vapour diffusion resistance - μ value	6575	μ	Calculation from Sd value
Water vapour diffusion resistance	132	MNs/g	Calculation from Sd value
Water tightness - W2A	0.075	N/mm ²	EN 15820
Water resistance - 21 days at 21°C	Watertight		EN 15817
Durability of watertightness and fire behaviour	Pass		EN 15814:2011+A2:2014
Radon gas diffusion resistance (4 mm membrane)	1.13×10^{-12}	m ² /s	K124/0295
Reaction to fire classification (Euroclass)	E		EN 13501-1

TECHNICAL DATA - HydroBond 2K-Flex Primer

Features	Result	Units
Form	Bituminous emulsion	
Colour	Black-brown	
Density / Specific gravity	1.00	
Packaging	10	Litres
Shelf life	12	Months
Pot life	N/A	Minutes
Application rate in 1 coat	0.2	Litres/m ²
Application method	Brush & airless spray	
Application temperature	+5 to +30	°C

TECHNICAL DATA - HydroBond 2K-Flex Mesh

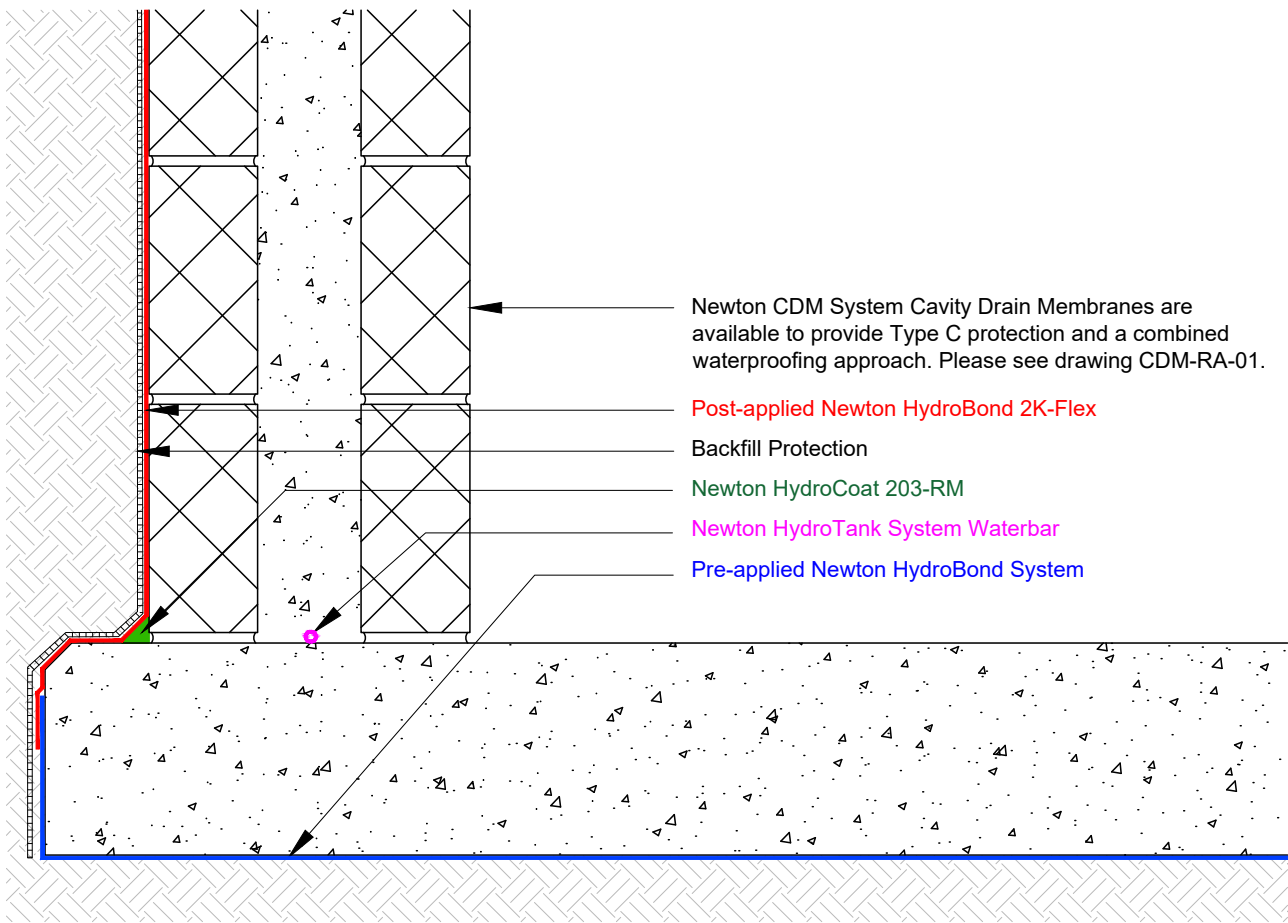
Features	Result	Units
Form	Woven fibre-glass mesh	
Colour	White	
Length	50	m
Width	1	m
Weight	160	g/m ²

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

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TYPICAL DETAIL



Newton CDM System Cavity Drain Membranes are available to provide Type C protection and a combined waterproofing approach. Please see drawing CDM-RA-01.

Post-applied Newton HydroBond 2K-Flex

Backfill Protection

Newton HydroCoat 203-RM

Newton HydroTank System Waterbar

Pre-applied Newton HydroBond System

TYPICAL APPLICATIONS

- Continuous Type A waterproofing and radon protection of retained structures, together with [Newton HydroBond®](#) pre-applied membranes
- Type A waterproofing and radon membrane for basement, foundations and earth-retained walls
- Smoothing of irregular surfaces prior to application of Newton HydroBond SA and HydroBond SAGM

SUITABLE SURFACES

- Walls - Positive pressure side
- Foundation toe

SUITABLE SUBSTRATES

Correctly prepared substrates of:

- Concrete of at least 20 kN
- Concrete block walls with flush pointing
- ICF. Please see caveats listed within the LIMITATIONS section on page 6

METHOD OF APPLICATION

- Airless Spray
- Trowel

REQUIRED ANCILLARY PRODUCTS

- Newton HydroBond 2K-Flex Primer - Bonding agent that also lowers porosity of concrete and masonry substrates.
- Newton HydroBond 2K-Flex Mesh - 160g/m² reinforcing mesh which is made from woven fibreglass yarns and coated with an alkaline resistant latex which prevents the alkaline present in cement from degrading the glass fibre.

SYSTEM PRODUCTS

- [HydroBond Plus & HydroBond 403 Plus GB](#) - Self healing and fully-bonded, pre-applied sheet membranes. GB is the gas variant
- [HydroBond 402-CCSM](#) - Fully-bonded, pre-applied sheet membrane
- [HydroBond SA and SAGM](#) - Post applied, self-adhesive sheet membranes. GM is the gas variant
- [HydroBond 109-LM](#) - UV-stable, single component liquid bitumen. Used for detailing.
- [HydroBond 410 GeoDrain](#) - Protection board or drainage membrane for sloping sites
- [HydroBond Protection Board](#)

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SYSTEM ANCILLARY PRODUCTS

- [Newton PipeCollar](#) - Flexible preformed collar for sealing pipe protrusions
- [HydroCoat 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, service sleeves and services that pass through the structure

PURCHASE CODES

Product	Purchase Code
• HydroBond 2K-Flex	HB-2K
• HydroBond 2K-Flex Primer	HB-2KP
• HydroBond 2K Flex Mesh	HB-2KM
• HydroBond 403 Plus	HB-2
• HydroBond 403 Plus GB	HBGB
• HydroBond 402-CCSM	402
• HydroBond SA	401M
• HydroBond SAGM	401GM
• HydroBond 109-LM	109
• HydroBond 410 GeoDrain	M18
• HydroBond Protection Board	HBPB
• HydroCoat 203-RM	203-RM
• Pipe Collar	A35

APPLICATION RATE

To comply with DIN 18195, class W2.1-E, the membrane must be of two coats to a total thickness of 4 mm, with the first coat reinforced with mesh. To achieve a 4 mm cured film, a wet application of 5.6 litres/m² is required.

- Two coats
- Total application rate of 5.6 litres/m²

Dry/cured membrane thickness of 4 mm

LIFE EXPECTANCY

When fully covered and protected, Newton HydroBond 2K-Flex will provide, under normal conditions, a durable waterproof covering for the life of the building to which it is installed.

The membrane is not hard wearing and should be protected against damage, especially whilst backfilling.

SPECIFICATION

Newton Waterproofing Systems work in partnership with RIBA NBS who publish our products on [NBS Source](#). The platform integrates seamlessly 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](#).

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'.

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.

TRAINING AND COMPETENCY OF THE USER

Newton HydroBond 2K-Flex should be installed by those with an understanding of the requirement to waterproof the building element to which the product is applied. In addition they must have 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 in order to achieve the required habitable grade defined by BS 8102:2022.

[Newton Specialist Basement Contractors](#) (NSBCs) are trained by Newton Waterproofing Systems in the correct specification and installation of Newton waterproofing and damp proofing products. They will provide the client with a meaningful insurance backed guarantee for the system installed.

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SURFACE PREPARATION

- The surface must be clean and free from dirt, dust oils, paints or other forms of contamination. With reinforced concrete, laitance and release agents should be removed, which will require jet washing to vertical surfaces and grinding/grit blasting to horizontal elements such as at the toe
- Surface irregularities less than 5 mm of depth within the substrate can be filled by firmly applying a scrape coat
- Surface irregularities or mortar joints greater than 5 mm depth should be filled or repaired with Newton HydroCoat 203-RM repair mortar
- The substrate should be absorbent and dry to slightly damp. The surface temperature should be at least 5°C and rising

SMOOTHING FILLET

A smoothing fillet is required at internal changes of direction. This can be pre-formed with Newton HydroCoat 203-RM or can be formed during the application of the first coat by using the paste itself to form the smoothing fillet.

Please note that forming fillets with the Newton HydroBond 2K-Flex may result in increased waiting time between the first and second coat due to the greater thickness of the product at the fillet.

PRIMING

Non-porous substrate such as steel or plastic does not require priming. All porous surfaces such as block and correctly prepared concrete should be primed with Newton HydroBond 2K-Flex Primer.

Application rate is approximately 0.2 l/m², depending on the absorbency of the substrate.

The primer should be dry to the touch before application of Newton HydroBond 2K-Flex.

- The primer is ready to use. Stir for a few seconds
- Apply with brush or roller
- Clean tools with water

Shelf life in the originally sealed container 12 months.

MIXING - GENERAL

Newton HydroBond 2K-Flex is a two-component product that requires homogeneous mixing of the two components. Both components, bitumen paste and reactive powder, are supplied within the same plastic tub in the respectively required quantities.

Newton Waterproofing supply the full range of [Collomix Mixing Equipment](#) that includes Hand-Mixers, Stirrers, Mixing Stands, Buckets, Transport Carts and the Mixer Clean mixing bucket. Newton HydroBond 2K-Flex can be mixed with the DLX and WK stirrers, matched to the Xo 1 or Xo 4 Hand Mixers which are suitable for quantities of up to 65 litres.

MIXING PROCEDURE

- Remove lid from plastic tub
- Take out bag containing the reactive powder
- Lift out the upper compartment to expose the paste
- Remove plastic film
- Slowly stir the paste until it starts to liquify
- Whilst still mixing, slowly add powder until all the powder is added
- Continue to mix until a homogeneous smooth and lump-free consistency is achieved and continue to mix for a full three minutes

APPLICATION

- Newton HydroBond 2K-Flex can be applied by trowel or by airless spray. For information on the machine and configuration, please contact our Training Department.
- Apply scrape coat to fill surface irregularities by scraping the material hard onto the substrate to only leave a surface film whilst filling all irregularities. The first coat can be applied immediately afterwards
- Apply first coat by trowel at approximately 2.8 litres/m²
- Use a 8 mm square notched trowel at a slight application angle to leave ridges of 5.8 to 6.0 mm. Check ridge size with wet-film-gauge
- Smooth with flat edge of trowel to leave a wet film of 2.8 to 3.0 mm
- Lightly bed Newton HydroBond 2K-Flex_Mesh into the wet surface with the edge of the trowel and then fully bed the mesh into the surface
- Allow the first coat to dry ready for the second coat.
- Apply second coat in the same way as the first coat
OR
- Adhere Newton HydroBond-SA or Newton HydroBond-SAGM membranes as a hybrid system to block walls

NOTE: The first coat must be firm enough so as not to be damaged by the application of the second coat or application of the self-adhesive membrane.

LAPPING TO PRE-APPLIED MEMBRANES

When used in conjunction with Newton HydroBond pre-applied membranes as a full HydroBond System, overlap the pre-applied membrane by a minimum of 150 mm.

SPRAYING SPECIFICATION

Newton HydroBond 2K-Flex can be sprayed with Graco GH300 or EH300 spraying machines. For further information on the machine and configuration, please contact our Training Department.

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POT LIFE

Newton HydroBond 2K-Flex has a working pot life of about 90 minutes at 20°C. The mixed product must be used or disposed of.

CLEANING

Thoroughly clean all tools and equipment with water. Hardened material will require a solvent thinner.

PROTECTION OF THE MEMBRANE

When used to waterproof retained walls, Newton HydroBond 2K Flex must be protected prior to back-fill, either with:

- [Newton HydroBond Protection Board](#)
- [Newton CDM Fibran XPS 500-C](#)
- [Newton HydroBond 410 GeoDrain](#)

COLOUR

- In packaging - Brown/Black
- Cured - Black

STORAGE

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

HEALTH & SAFETY

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

LIMITATIONS

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 +5°C or higher than +30°C
- Always use the correct preparation and priming of the support substrate as directed above

LIMITATIONS - ICF

The British Standard (BS 8102:2022) is now asking the waterproofing designer to assess the suitability of materials in basement construction, and the standard considers ICF to be inherently risky and explicitly names ICF as not being suitable.



The issue is whether the material will degrade when in contact with water. Whilst an external waterproofing membrane is used to protect the structure against water ingress, the landmark judgement, *Outwing Vs Thomas Weatherald*, laid in law that it is not reasonable to expect 100% defect free workmanship within the externally applied Type A waterproofing membrane. Therefore we have to assume there will be defects present within the external waterproofing membrane application, which in turn will result in water being in contact with the substrate the waterproofing is applied to.

Newton have asked ICF suppliers if the expanded polystyrene (EPS) ICF is able to be in long-term contact with groundwater without suffering detriment, and we have not received positive confirmation of this, even from those who are prepared to make such statements with regards to their XPS products. XPS insulation is well known for its properties and capabilities in wet ground and is frequently used below ground, beneath basement raft foundations, for example. We would strongly recommend that you seek confirmation in writing from the manufacturer that their ICF product will not degrade when in long-term contact with groundwater prior to continuing with the project.

Newton Waterproofing Systems reserve the right to update product literature at any time. Please always refer to our [website](#) for the latest versions.

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				Newton Waterproofing Systems Newton House 17- 19 Sovereign Way Tonbridge Kent TN9 1RH		404 EN 15814:2011 + A2:2014 1023 + 0432 Polymer modified bituminous thick coatings for waterproofing	
Essential Characteristics		Declared Performance		Test Standard		Harmonised Technical Standard	
Watertightness		Class W2A - ≥ 0.075 N/mm ²		EN 15820		EN 15814:2011 + A2:2014	
Crack bridging		Class CB2 - ≥ 2 mm		EN 15812			
Water resistance		No colouration of the water No detachment from the substrate		EN 15817			
Flexibility at low temperature		No cracking		EN 15813			
Dimensional stability at high temperature		Pass - No sliding		EN 15818			
Durability of watertightness and fire behaviour		Pass		EN 158814:2011+ A2:2014			
Compressive strength		Class C2A - 0.30 MN/mm ²		EN 15815			
Dangerous Substances		NPD					
Reaction to fire		Euroclass E		BS EN 13501-1			