System 500

NEWTON 508

8 mm Cavity Drain Membrane

NEWTON WATERPROOFING

Rev 8.4 - 08 April 2020

PRODUCT CODES - M1, M1R, M2, M2R & M3

PRODUCT OVERVIEW

Newton 508 is a high quality cavity drain waterproofing membrane, which is supplied in a number of variants for use within Newton System 500, our internally applied waterproofing system that includes Newton drainage and pumping systems. Depending on the variant, Newton 508 is suitable for the waterproofing of earth retained walls, vaulted soffits and floors and is guaranteed against deterioration for 30 years, with a life expectancy of the design life of the building (DIN 9001:2000), and supported by BBA Certification Number 94/3010.

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 94/3010

Newton 508 is inert and, therefore, non-polluting to drinking water, highly resistant to water, alkalines, saline solutions and organic acids, and not affected by minerals and hydrocarbons. It is also rot-proof, and resistant to bacteria, fungi and other small organisms. Newton 508R and 508 eco Floor also both exhibit high compressive loading stability.

Newton 508R and 508 eco Floor are also independently tested as an effective barrier to radon ground gases, with Newton 508R also tested as a methane and CO2 barriers, and are the membranes used within our patented combined ground gas and waterproofing system, Newton PAC.

KEY BENEFITS

- Does not require extensive and damaging preparation to the wall surface
- Speed of installation
- Provides vapour control when used with humidity control systems and is capable of delivering an environment to all levels within a Grade 3 environment to BS 8102:2009
- 508R is independently certified as a barrier to hydrocarbon gases, radon and methane
- Resistant to rot, chemically aggressive groundwater, acids and alkalines, efflorescing salts and hydrocarbon contamination

TYPICAL APPLICATIONS

Wall and floor membrane as part of Newton System 500.

SUITABLE SUBSTRATE - WALLS

- Concrete
- Brick
- Concrete block
- ICF - With special longer fixing plugs

SUITABLE SUBSTRATE - SOFFITS

- Concrete - To fall
- Brick - Arched or vaulted

SUITABLE SUBSTRATE - FLOOR

- Concrete raft or slab
- Newton Fibran XPS 500-C closed cell extruded polystyrene insulation (see section on page 5 for further information)

SUITABLE SURFACES

- Walls - 508, 508R & 508 Mesh
- Slab/raft - 508R & 508 *eco* Floor

TRAINING AND COMPETENCY OF THE USER

Newton 508 is a constituent part of Newton System 500, our Type C, internally waterproofing system. Newton recommend that System 500 is installed by Newton NSBC contractors who are trained by Newton in the correct design and installation of the waterproofing system. This is also a requirement of the BBA Certificate.

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NEWTON 508

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TECHNICAL DATA

Features	Result				Units
	508	**508R**	**508** *eco* **Floor**	**508 Mesh**	
Material	HDPE	HDPE	HDPE	HDPE	
Colour	White	White	Black	White	
Density	500	700	800	600	g/m²
Width	2.4	2.07/2.4	2.5	2.0	m
Length	20	20	20	20	m
Area	48	40/48	50	40	m²
Height	8.0	8.0	8.0	7.4	mm
Membrane thickness	0.6	0.8	0.8	0.8	mm
Stud depth	7.4	7.2	7.2	6.6	mm
Vicat softening temperature	126				°C
Packaged weight	24.5	29.40 / 33.82	41.80	26.96	kg
Service temperature	-40 to +80				°C

Installed Performance	Result				Units	Test Method
Compressive strength - Temporary	N/A	280	520	N/A	kPa	EN 25619-2
Compressive strength - Permanent	N/A	7	21	N/A	kPa	EN 25619-1
Thermal conductivity	0.461				W/mK	EN 12667
Colour	White	White	Black	White		
Water vapour resistance – S_d value	>604				m	BS EN 1931
Water vapour resistance – μ value	>1208000				μ	Calculated from S_d value
Water vapour diffusion resistance	>3020				MNs/g	Calculated from S_d value
Resistance to fire - Euroclass	Not tested - F					BS EN 13501-1
Chemical resistance – Excellent	100				%	EN 14030
Oxidation resistance – Excellent	100				%	EN ISO 13438
Radon gas resistance - Membrane*	N/A	3.1×10^{-12}	4.4×10^{-12}	N/A	m²/s	K124/02/95
Radon gas resistance - Joints*	N/A	2.7×10^{-12}	1.6×10^{-12}	N/A	m²/s	K124/02/95
[1]Resistance to liquid hydrocarbons*	N/A	Passed	N/A	N/A		EN 16140:2011
Carbon dioxide permeability*	N/A	1.36×10^{-8}	N/A	N/A	m²/s	See note**
Methane permeability*	N/A	1.42×10^{-8}	N/A	N/A	m²/s	See note**
Carbon dioxide transmission rate	N/A	318	N/A	N/A	ml/(m².d.atm)	ISO 15105-1
Methane transmission rate	N/A	63.1	N/A	N/A	ml/(m².d.atm)	ISO 15105-1

The above data, even if carried out according to regulated tests are indicative and they may change when specific site conditions vary.
[1]After 14 days immersion in petrol and engine oil. *At the time of testing, the membrane was called Newton 508. Product name changed to 508R to reflect the gas and liquid hydrocarbon capabilities. The currently named Newton 508 has not been tested for resistance to gas or liquid hydrocarbons. **The test was carried out in accordance with Vinci In-House Test Procedure TP950/05/13569, issue 1, and Rilem Report 12, Performance Criteria for Concrete Duribility, E & FN Spon, London, UK, pp 226-230. All test certificates are available by request.

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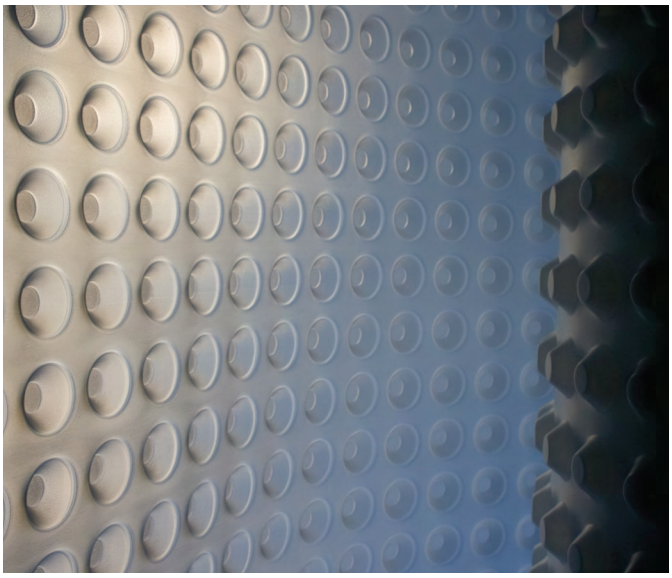
NEWTON 508

8 mm Cavity Drain Membrane

VARIANTS

Newton 508

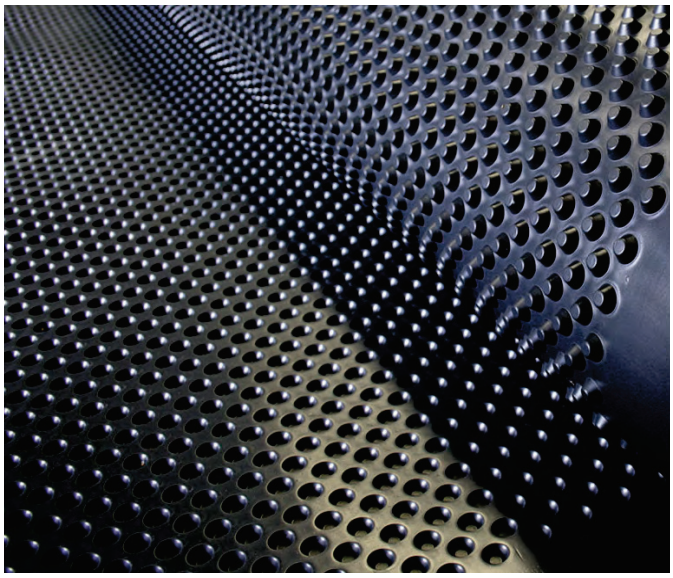


Code: M1

Use: Walls, vaulted and sloping soffits.

Advantages: Lightweight and easier to fit to large or high walls and soffits.

Newton 508 *eco* Floor

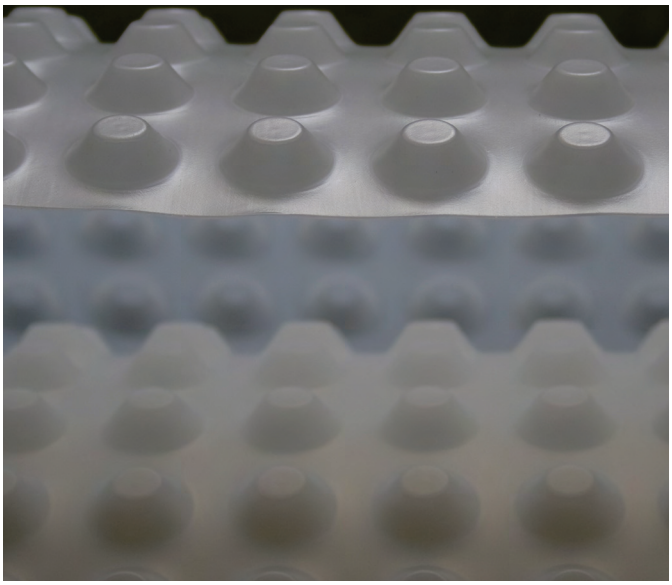


Code: M2

Use: Floors. Used with The Newton PAC System for combined water and gas control.

Advantages: More studs per m^2 results in higher compressive resistance with less loading to the substrate.

Newton 508R

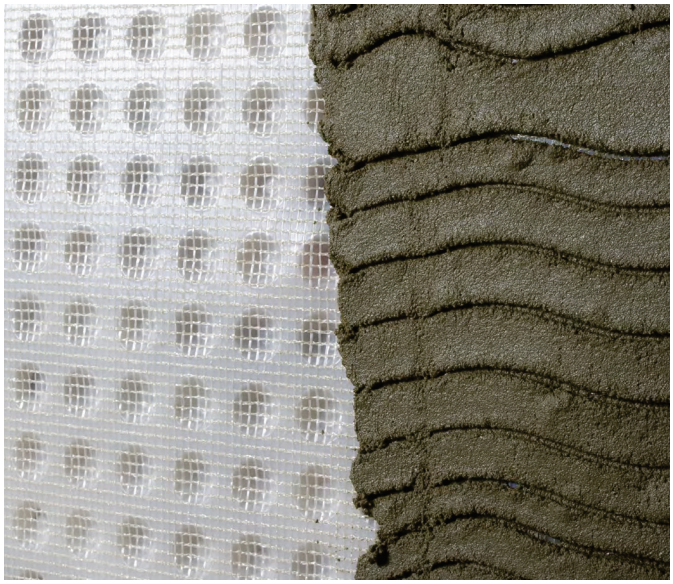


Code: M1R & M2R

Use: Floors, walls, vaulted and sloping soffits. Used with The Newton PAC System for combined water and gas control.

Advantages: Heavier and stronger than Newton 508. Is certified for use as a barrier to ground gases and is suitable to be used where the ground suffers from hydrocarbon contamination.

Newton 508 Mesh



Code: M3

Use: Walls, vaulted and sloping soffits.

Advantages: A strong polyethylene mesh is thermally welded to the face of the membrane during the manufacturing process. The mesh provides a key for plasters and renders.

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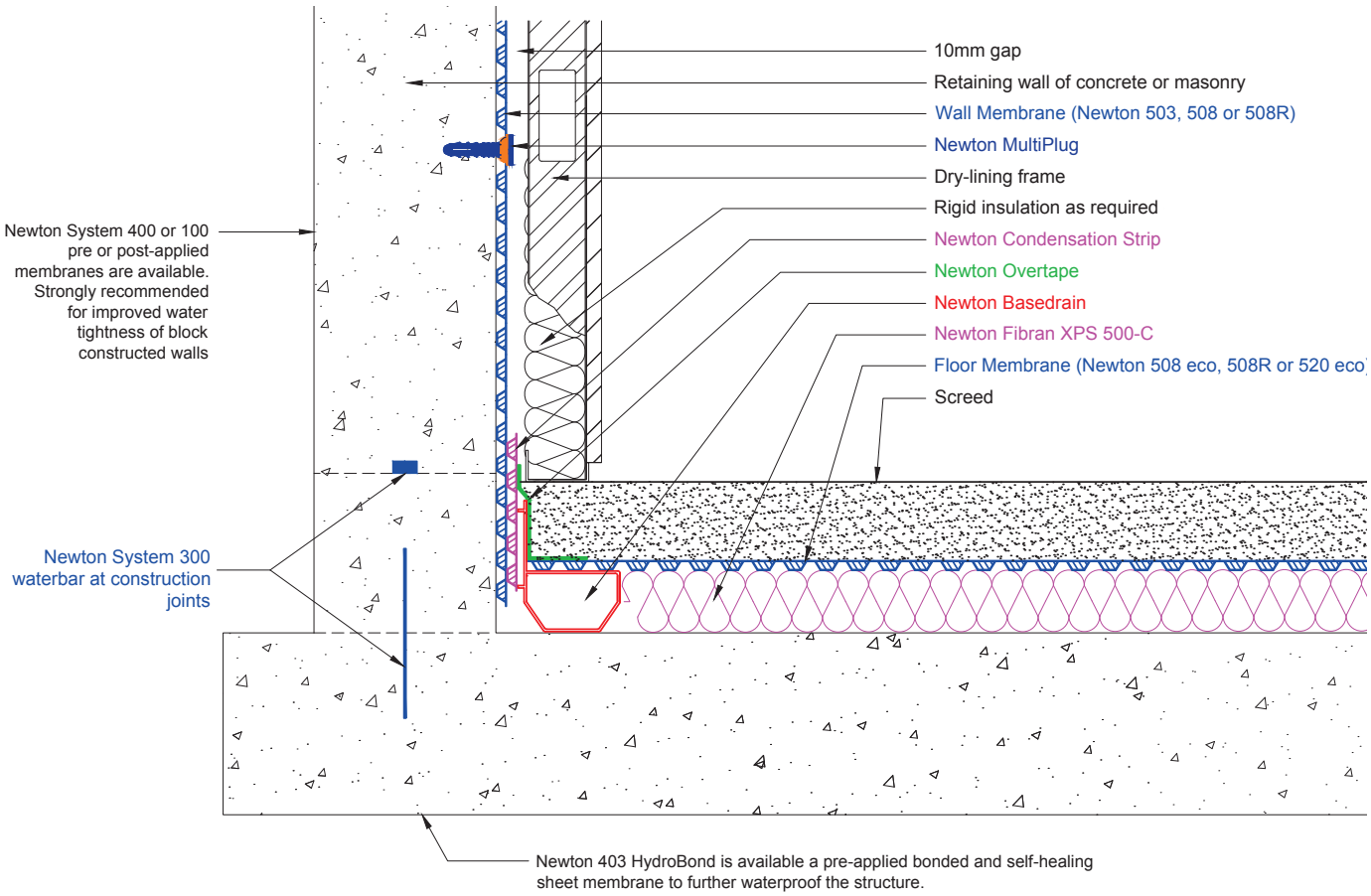
TYPICAL DETAIL



LIFE EXPECTANCY

When specified, installed and protected in accordance with the Data Sheet and Installation Manual, and fully and permanently isolated from UV light, physical damage or wearing, and only to those substrates confirmed within, Newton 508 has a service life that is equal to the design life of the structure.

PRODUCT WARRANTY

Newton 508 is supplied with a product warranty of 30 years, and has a life expectancy of at least 100 years (DIN 9001:2000). Please note that this is not a guarantee. The waterproofing guarantee is provided by the specialist waterproofing contractor.

COLOUR

- Translucent white - 508, 508R & 508 Mesh
- Black - 508 *eco* Floor

SPECIALIST TOOLS REQUIRED

- High quality SDS drill and drill bits
- Heat gun
- Rotating laser level is recommended but not required

INSTALLATION INSTRUCTIONS

Please refer to the Newton CDM Installation Manual.

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 drawings available for download in Technical Drawings. A selection are also available via FastrackCAD as well as a range of BIM objects on the NBS National BIM Library

TRAINING AND COMPETENCY OF THE USER

Newton 508 should be installed by those with experience of structural waterproofing.

It is recommended that Newton 508 and its ancillary products be installed by contractors trained by Newton Waterproofing Systems in the correct use and specification of the product.

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PROTECTION OF THE MEMBRANE

The membrane should always be protected by suitable surface finishes.

Protection methods to walls and vaulted soffits include:

- Suitable plasters or renders (Newton 508 Mesh only)
- Floor supported dry-lining frame and plasterboard
- Timber battens fixed into Newton MultiPlugs as a support for plasterboard or wooden sheeting

Protection methods to floors include:

- Screed
- T&G Chipboard
- Timber floor supported by a fixed lattice of timber supports
- Insulation with screed or T&G chipboard above
- Underfloor heating tray with screed above

NOTE: All variants of Newton 508 are Fire Rated to Euroclass E, the same as plastic based insulation. As such, the membrane must always be protected from fire by surface finishes, as would be the case with insulation.

APPLICATION ABOVE INSULATION SPACER

Where the membrane is installed above a spacer of 50 mm of insulation, please ensure the following:

Type of insulation
In theory any XPS insulation that is recommended for use within wet conditions is suitable. Newton Fibran XPS 500-C is specifically designed for use as the Basedrain spacer below the floor membrane.

Loading of the insulation
The contact area of the studded membrane with the insulation relative to the upper flat area is 10% for Newton 508R and 15% for Newton 508 *eco* Floor. When calculating loading through the membrane to the insulation, be aware that the load to the floor must be multiplied by 10, and 6.6 respectively to give the representative point load to the insulation. For example:

- Floor load is 10kN/m^2. With Newton *eco* Floor, multiply the load by 6.6 = 66kN/m^2 to give point load above the insulation

Use only the *Compressive creep (design load) max 2%* deflection after 50 years figure from the insulation Data Sheet. If the point load is too high, please contact Newton Waterproofing for further advice.

PACKAGING

Newton 508 - Code M1 -2.4m x 20m

Newton 508R - Code M1R & M2R - 2.4/2.07m x 20m

Newton 508 *eco* Floor - Code M2 - 2.5m x 20m

Newton 508 Mesh - Code M3 - 2.0m x 20m

LIMITATIONS

- Do not apply to flat soffits unless the soffit is at least 400 mm narrower than the membrane to be used and then only by very experienced contractors
- Newton 508 is not a standalone product and has no capability to withstand water pressure. Must be used as part of a Type C cavity drain waterproofing system that safely removes water from the building
- Newton System 500, of which Newton 508 is a constituent part, is a professional fit waterproofing system that should be designed and installed by those trained and registered by Newton Waterproofing and registered within our NSBC scheme

STORAGE

Store upright in dry conditions at temperatures between 5°C and 25°C. Do not expose to freezing conditions or direct sunlight.

ANCILLARY PRODUCTS

Please refer to Newton CDM Installation Manual

HEALTH & SAFETY

Use product only as stated within the Application Guides. Read the MSDS and System 500 Installation Manual before use.

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