

## System 500

## NEWTON 503 &amp; 503 MESH

## 3mm Cavity Drain Membrane

Rev 4.2 - 10 February 2017

PRODUCT CODES - M5 &amp; M11

## PRODUCT OVERVIEW

Newton 503 is a high quality cavity drain waterproofing membrane, supplied in a plain variant for walls and floors and a meshed variant for receiving plaster or render to walls, and used within Newton System 500, our internally applied waterproofing system that includes Newton drainage and pumping systems. Depending on the variant, Newton 503 is suitable for the waterproofing of earth retained walls, vaulted soffits and floors, is guaranteed against deterioration for 30 years, has a life expectancy of at least 50 years (DIN 9001:2000), and is supported by BBA Certification Number 94/3010.



Newton 503 is inert and, therefore, non-polluting to drinking water, highly resistant to water, alkalies, saline solutions and organic acids, and not affected by minerals and hydro-carbons. It is also impervious to root penetration, is rot-proof, and resistant to bacteria, fungi and other small organisms. Newton 503 also exhibits high compressive loading stability.

## KEY BENEFITS

- Does not require extensive and damaging preparation to the wall surface
- Speed of installation
- Provides vapour control and, when used with humidity control systems, is capable of delivering an environment to all levels within a Grade 3 environment to BS 8102:2009
- Resistant to chemically aggressive groundwater, efflorescing salts and hydrocarbon contamination
- Rot-proof and resistant to root penetration
- Shallow stud profile for where space is at a premium

## TYPICAL APPLICATIONS

Wall and floor membrane as part of Newton System 500.

## VARIANTS

## Newton 503



Code: M5

Use: Walls, vaulted and sloping soffits.

**Advantages:** Only 3mm in thickness and so is ideal for when space is tight, such as with stairs or low headroom.

## 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 3 for further information)

## Newton 503 Mesh



Code: M11

Use: Where a rendered or plastered finish is required.

**Advantages:** 5mm thinner than Newton 508 Mesh and is therefore used where wall space is limited.

# NEWTON 503 & 503 MESH

## 3mm Cavity Drain Membrane

### TECHNICAL DATA

Features	Result		Units
	503	503 Mesh	
Material	HDPE		
Colour	White/Translucent		
Density	500		g/m <sup>2</sup>
Width	2.0		m
Length	20.0		m
Area	40.0		m <sup>2</sup>
Packaged weight	23.0	24.6	kg
Height	3.50	3.60	mm
Membrane thickness	0.60	0.70	mm
Stud depth	2.90	2.90	mm
Vicat softening temperature	126		°C
Service temperature	-40 to +80		°C
Installed Performance	Result	Units	Test Method
Compressive strength – Temporary loading	>320	kPa	EN ISO 25619-2
Thermal conductivity	0.461	W/mK	EN 12667
Water vapour diffusion resistance – S <sub>d</sub> value	>604	m	BS EN 1931
Water vapour diffusion resistance – μ value	>1208000	μ	Calculated from S <sub>D</sub> value
Water vapour diffusion resistance	>3020	MNs/g	Calculated from S <sub>D</sub> value
Resistance to fire	Euroclass E		BS EN 13501-1
Chemical resistance – Excellent	100	%	EN14030
Oxidation resistance – Excellent	100	%	EN ISO 13438

### SUITABLE SURFACES

- Walls - 503 & 503 Mesh
- Slab/raft - 503

### APPLICATION

Newton 503 is a constituent part of Newton System 500, our Type C, internal waterproofing system. Newton recommend that System 500 be 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.

### SPECIALIST TOOLS REQUIRED

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

### TRAINING AND COMPETENCY OF THE USER

Newton 503 should be installed by those with experience of structural waterproofing.

It is recommended that Newton 503 and its ancillary products be installed by contractors trained by Newton Waterproofing Systems in the correct use and specification of the product.

### LIFE EXPECTANCY

When specified, installed and protected in accordance with the Data Sheet and Installation Manual, and fully and permanently isolated from UV light and physical damage or wearing, and only to those substrates confirmed within, Newton 503 has a service life that can be equal to the design life of the structure.

### PRODUCT WARRANTY

Newton 503 & 503 Mesh are supplied with a product warranty of 30 years, and have a life expectancy of at least 50 years (DIN 9001:2000). Please note that this is not a guarantee. The waterproofing guarantee is provided by the specialist waterproofing contractor.

### 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](#)

# NEWTON 503 & 503 MESH

## 3mm Cavity Drain Membrane

### COLOUR

Translucent white.

### 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 503 Mesh only)
- Floor supported dry-ling frame and plasterboard
- Timber battens fixed into Newton MultiPlugs as a support for plasterboard or wooden sheeting

Protection methods to floors include:

- Screed
- 18mm or 22mm T&G Chipboard
- Timber floor supported by a fixed lattice of timber supports
- Insulation with screed or T&G chipboard above
- Under-floor heating tray with screed above

**NOTE:** All variants of Newton 503 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.

### INSTALLATION INSTRUCTIONS

Please refer to the System 500 Installation Manual.

### APPLICATION ABOVE INSULATION SPACER

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

#### Type of insulation

In theory any 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 12.5% for Newton 503. When calculating loading through the membrane to the insulation, be aware that the load to the floor must be multiplied by 8 to give the representative point load to the insulation. For example:

Floor load is 10kN/m<sup>2</sup>. With Newton 503, multiply the load by 8 = 80kN/m<sup>2</sup> 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 for further advice.

### LIMITATIONS

- Do not apply to flat soffits unless the soffit is at least 400mm narrower than the membrane to be used and then only by very experienced contractors
- Newton 503 and 503 Mesh are not a stand-alone products and have no capability to withstand water pressure. They 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 503 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

### PACKAGING

Newton 503 - Code M5 - 2.0m x 20m

Newton 503 Mesh - Code M11 - 2.0m x 20m

### 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 System 500 Installation Manual](#)

### HEALTH & SAFETY

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

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