

## Application Guide

# NEWTON 404 HYDROBOND-LM

## Application to Concrete Walls

Rev 1.1 - 20 January 2015

Product Code - LM404

***This application guide is for the application of Newton 404 HydroBond-LM to concrete walls and should be read in conjunction with the product Data Sheet and MSDS.***

*Newton 404 HydroBond-LM is a spray applied, seamless, rubber waterproofing membrane for the external waterproofing of basements 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.*

## TRAINING & COMPETENCY OF USER

Newton 404 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, which in many cases will require further waterproofing products so as to achieve the required habitable grade as defined by BS8102:2009.

Newton 404 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.

## HEALTH & SAFETY

Use product only as stated. Read the MSDS before opening containers. Use PPE as directed by the MSDS.

## SUBSTRATE

This Installation Sheet describes the requirements of construction, the preparation of the substrate and application of the membrane to reinforced concrete retaining walls supported by raft or strip foundations. For application to other substrates please see:

- AG404-2 Waterproofing of block walls
- AG404-3 Waterproofing of ICF walls

## CONSTRUCTION

The construction should conform with current Building Regulations, British Standards and relevant Codes of Practice. The concrete walls and foundations should be constructed to BS EN 1992 (Eurocode 2), and the structure as a whole should be of sufficient mass and quality to resist heads of water pressure as required by BS8102:2009.

Concrete should be fully and correctly cured for 28 days before application of Newton 404 HydroBond-LM.

## SURFACES FINISHES

Generally, the concrete surface finish should be as documented in 'General Specification for Civil Engineering Works' section 14: 'Formwork and Finishes to Concrete'.

All horizontal surfaces should have a finish to Class of finish U3, namely a "Uniform, dense and smooth surface" with float marks of no more than 3mm. A U5 power floated finish with no float marks is also suitable but not required. U1 (Abrupt irregularities permitted) or U2 (Tamp marks of up to 10mm) finishes are not suitable and should be avoided.

## REINFORCEMENT AT CHANGES OF DIRECTION

Internal changes in direction should be smoothed with a 45° smoothing fillet of at least 25mm x 25mm.

If the membrane is terminated to the vertical face of a raft foundation or lapped to 403 HydroBond installed below the raft, the external corner should be taken away by formwork or later by mechanical removal to form a 45° smoothing fillet of at least 25mm x 25mm.

Alternatively, changes in direction (both internal and external) can be reinforced with Newton 407 LM-Tape bedded into Newton 406 HydroBond-MA.

## SURFACE PREPARATION

Cracks, substrate damage and deterioration should be repaired prior to installation of the waterproof membrane.

Generally the surfaces to be waterproofed must be structurally stable, clean, dry and free from release agents, dust, laitance, oils, paints or other forms of contamination.

## SURFACE PREPARATION - WALLS

Jet washing should be used to remove release agents and other surface contamination. Adding mild detergents to the jet wash water will improve effectiveness.

## SURFACE PREPARATION - HORIZONTAL

Mechanical surface preparation by grit-blasting, grinding or scabbling is required to remove surface laitance and other surface contamination.

## SURFACE REPAIR

After cleaning and preparation of the substrate is complete, all surfaces should be inspected for surface irregularities and suitable repairs made.

- Holes or indentations should be filled with a suitable concrete repair product
- Deep or structural cracks should be inspected to confirm if they are live or dormant. Suitable repair by qualified personnel is recommended
- Hairline surface cracks and small surface irregularities will be filled by the application of Newton 404 HydroBond-LM

## PROTRUSIONS

Protrusions such as pipes or cable ducts should be reinforced with Newton 407 LM-Tape bedded into Newton 406 HydroBond-MA.

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### CONSTRUCTION JOINTS

Static construction joints such as the kicker or any vertical static construction joints to the walls do not require any preparation. These joints are reinforced with a thicker application of the liquid membrane as described in 'Construction Joints' within the YIELD section below.

### MOVEMENT JOINTS

Movement joints should be reinforced with Newton 407 LM-Tape bedded into Newton 406 HydroBond-MA placed directly over the movement joint medium.

### PRIMING

The concrete does not require priming prior to application of Newton 404 HydroBond-LM. However, if the concrete has a high degree of suction, a mist coat can be applied prior to the main coat being applied. Further information can be found below.

### APPLICATION CONDITIONS

- Do not apply to concrete that is less than 28-days old
- Concrete may be dampened from rain but not wet
- Do not apply to wet or frozen surfaces, during or immediately prior to heavy rain
- Apply at an ambient temperature of +5°C

### STIRRING & MIXING

Single component product so does not require mixing. Does not require stirring. Do not add water.

### APPLICATION

The machine is set up with a container of 404 HydroBond-LM adjacent to an equally sized container of fresh clean water which has received a dosing of a salt catalyst. The liquid membrane and the water are mixed in equal measure at the spraying lance of the machine and sprayed to the substrate. The membrane adheres to the substrate and cures almost immediately whilst the water runs off to ground, remaining clean and able to drain to sewers. The resulting membrane is touch dry within seconds.

### YIELD

- Main wall sections - 1kg/m<sup>2</sup>, either in one coat or a combination of mist coat and main coat
- Construction joints - One coat of 2kg/m<sup>2</sup>
- Movement joints - One coat of 2kg/m<sup>2</sup> over a reinforcement band of Newton 407 LM-Tape bedded into Newton 406 HydroBond-MA
- Changes in direction - One coat of 1kg/m<sup>2</sup> over a reinforcement band of Newton 407 LM-Tape bedded into Newton 406 HydroBond-MA or one coat of 2kg/m<sup>2</sup> over a smoothing fillet
- Mist coat - 0.25kg/m<sup>2</sup> followed by main coat to a total of 1kg/m<sup>2</sup>

### EXTENT OF APPLICATION

It is usual for the Newton 404 HydroBond-LM to extend upwards from the foundation and to terminate at DPC, slightly above external ground level.

### TERMINATION TO 403 HYDROBOND

Overlap the already in place Newton 403 HydroBond by at least 150mm. See Newton drawing H-8.

### TERMINATION TO RAFT FOUNDATION

Continue the application down past the kicker and to at least 150mm lower than the basement floor. If the raft has a toe, continue to at least 150mm to the horizontal surface of the toe.

### TERMINATION TO DPC

There are two main methods of terminating to DPC:

- Flashing. Please see drawing A-D4A
- UV-Stable finishing band of either 405 Newton HydroBond-HA (see drawing A-D4B) or Newton Floorgum Tyre (see drawing A-D4C)

### PROTECTION OF THE MEMBRANE

Newton 404 HydroBond-LM must be protected prior to back-fill. Suitable protection includes:

- Protection board
- Suitable insulation
- Newton 410 GeoDrain

### CLEANING

Large Spills - Pump into plastic containers and rework/dispose as per local legislation.

Small Spills - Use non-combustible absorbent and shovel into a suitable container for disposal.

### STORAGE

Store in dry conditions at temperatures between 5°C and 25°C with containers fully sealed. Do not expose to freezing conditions. Part used containers can be re-used as if new. Seal the container after application and use within one year of first opening, stirring the product before application.

### ANCILLARY PRODUCTS

- Newton 403 HydroBond - self healing and fully bonded sheet membrane for below concrete rafts and slabs and to walls formed with permanent formwork
- Newton 405 HydroBond-HA - Hand applied version of 404 HydroBond used for detailing. UV Stable.
- Newton 406 HydroBond-MA - Trowel applied mastic used for bonding and preparation of substrate

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- Newton 407 LM-Tape - Strengthening tape for changes in direction and joints
- Newton 410 Geodrain - Drainage membrane to move water around the structure on sloping sites. Can be used as protection for all HydroBond Membranes also

### TECHNICAL RESOURCES

Product Data Sheet and MSDS can be found under the System 400 section of our website or this hyperlink:

[Newton 404 HydroBond-LM](#)