

## INSTALLATION INSTRUCTIONS

# NEWTON SYSTEM 800

## Damp Proofing & Plaster Base Meshed Membranes

Rev 1.1 - 28 January 2015

### 1. INTRODUCTION

Newton 803 Newtonite & Newton 805 Newlath are damp-proofing membranes for use as a plaster or render base for walls that are above external ground level. 803 Newtonite & 805 Newlath are suitable for both internal and external use. 803 Newtonite & 805 Newlath are not suitable for use as a waterproofing membrane for use in basements or to earth retaining walls. If the membrane is not to be used as a render base, where a block wall or dry-lining frame is used as the wall finish, use Newton 803. If insulation is required to the wall build, use Newton 803, which is not meshed, with an independently supported wall frame. Newton 803 Newtonite & 805 Newlath are not suitable for use with laminated or insulated plasterboard, as this requires mechanical fixings which will breach the membrane. If the requirement is for a cellar, basement or earth retaining wall, Newton System 500 should be used instead.

### 2. PREPARATION

Clean the substrate to remove all loose debris and organic matter. Plaster should be removed as it can soften over time, which will weaken the fix of the membrane to the wall. If the wall render is in good condition, it does not have to be removed and the membrane can be fitted directly over. If the render is damaged, local repairs may be required. Loose or crumbling render should be removed and local repairs made. If the render is in very poor condition, all of it may need to be removed. Obtain as flat a surface as possible.

If the wall is undulating, better results are produced if the wall surface is dubbed-out flat with sand & cement prior to installation of the membrane rather than dubbing out over the top of the membrane. A flat uniform surface to the substrate means that the plaster or render above the membrane will be uniform also and less likely to have cracking caused by differential thicknesses. If evidence of bacterial growth can be seen, use a fungicidal product prior to the fitting of the membrane. If any evidence of wet rot or dry rot is seen, have it dealt with by a qualified remedial specialist. If a new slab is to be laid as part of the works, it is preferable to fit the membrane prior to the laying of the floor slab with the floor DPM extending upwards in front of the Newton 805 Newlath or Newton 805 Newlath ready for the concrete pour.

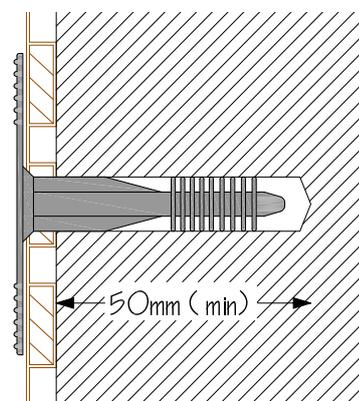
### 3. CUTTING TO SIZE

803 Newtonite & 805 Newlath can be cut with a sharp utility knife, scissors or shears. Decide whether the membrane is to be fitted horizontally or vertically. Cut the membrane to size. Ideally, the membrane should be continued up into ceiling voids and down past the slab to the oversite. If this is not possible, cut the membrane so that it finishes tightly to the soffit and floor finish. A gap is not required at the soffit or floor, indeed the system works more efficiently when the system is not ventilated as this impedes the natural vapour drive from inside the property to the outside that still continues through the membrane.

### 4. FIXING TO THE WALL

803 Newtonite & 805 Newlath are fitted to the wall with the studs to the wall and the flat meshed surface facing inwards towards the applicator. Fix the membrane to the wall with the Newton 800 Mesh Plug to all substrates except when fixing to plywood or timber, when a galvanised clout nail should be used, or to slightly friable mortar substrate, when the Newton 800 Cob Plug should be used. 803 Newtonite & 805 Newlath can be fitted horizontally or vertically.

Fit the membrane as level as possible - best results are achieved when a long builders level or a rotating laser level is used. Care must be taken to ensure that the membrane is pulled tight and square while fixing as this will avoid sagging or bulging which can cause problems when plastering or rendering. Using a 7 or 8mm drill bit (depending on substrate), drill through the membrane into the wall to a depth of at least 50mm. Apply a bead of mastic around the hole to the membrane so that when the plug is hammered home, the mastic will create a seal between the head of the plug and the face of the membrane and so prevent migration of dampness and salting from the substrate to the wall finish. Use a small number of fixings to initially fit the membrane to the wall as level as possible.



Once the section of membrane is on the wall add the further fixings. Hammer the plugs home using a wide headed hammer such as a lump hammer or mallet. A smaller-diameter bit can be used on softer substrate to ensure a tight fit for the plug. Fixing centres internally must not be greater than 250mm. Fixing centres externally should be at 150mm centres and staggered to even out the stresses. On curved or uneven surfaces, closer fixings should be used. On exposed areas closer fixings are recommended, to restrain possible thermal movement. Fit the membrane 300mm to return walls to isolate wall finishes from dampness transmitting from the main wall being treated. 803 Newtonite & Newton 805 Newlath can be taken into reveals. Fixing should not take place above 30°C and below -5°C.

### 5. JOINTING

Joints may be made horizontally or vertically. Position fixings close to the edge of all joints to reduce the risk of shrinkage cracks. Joints are created by but jointing the two edges together and then oversealing the joints with Newton Mesh Tape. 803 Newtonite & 805 Newlath can be taken round corners. On particularly difficult shaped corners, cut the membrane and butt joint and seal as above. Newton Mesh Tape should be firmly pressed into the mesh of the membrane to facilitate the joint. In cold and damp conditions a heat gun should be used to gently evaporate surface moisture and then to assist in pressing the Mesh Tape into the mesh of the membrane.

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### 6. SEALING AROUND PROTRUSIONS

Where the membrane has to be cut around pipes or other protrusions, carefully cut the membrane around the protrusion and then seal around the protrusion with Newton Mastic to ensure there is no bridging between the damp substrate and the new finish.

### 7. PUNCTURING THE MEMBRANE

If the finished wall is punctured when holes are drilled to fix brackets, etc., Newton Mastic should be inserted before fixing bolts are inserted to ensure no bridging from the damp substrate occurs.

### 8. FINISHING PROFILE

It is recommended that renders and plasters are raised from the floor by 20-25mm to prevent bridging from the floor. 800 Finishing Profile, available in 2 metre lengths, should be fitted to the bottom of the membrane as a plaster stop, guaranteeing that the plaster/ render will stop short of the floor. 800 Profile must be fixed at the same time as the membrane and therefore before the plaster or render is applied. 800 Profile is not recommended where the run of wall is uneven or when the membrane is extended down past the slab. Once the finish has been applied and has dried, the 20-25mm gap to the bottom of the plaster/render should be covered by a wooden skirting.

### 9. FINISH (GENERAL)

803 Newtonite & Newton 805 Newlath are both suitable for use internally. The wall finish can be plaster, render, hydraulic lime or plasterboard bonded to the membrane with a proprietary adhesive compound. Whilst any cement rendering is prone to cracking, careful application can reduce or avoid this. Problems occur when the scratch coat has not been allowed to fully cure prior to the float coat being applied, but the most common problem we see is where the render has not been allowed to fully cure due to accelerated drying. It is extremely important that the render is slowly cured for a period of 7-10 days, longer if possible. The render gets its strength from the chemical processes that take place between the cement content and the added water. The cement needs the correct amount of water to be available to it during the whole of the curing period. If the render dries too quickly due to exposure to sunlight, wind or even dehumidification, the cement will not be able to react with water producing a weak render that will be prone to cracking. The render should be dampened regularly during the curing process and when applied externally, should be protected from the elements with damp hessian with plastic sheeting over. Hairline cracking can be made good with fine fillers or alternatively a high-build masonry paint can be applied. **DO NOT APPLY DECORATIONS UNTIL PLASTERS OR RENDERS ARE THOROUGHLY DRY.**

#### 10.1 PLASTERING

The recommended plaster for 803 Newtonite & 805 Newlath is Tarmac Whitewall One Coat. Please note that we do not recommend that this product is used in one single coat to Newton Mesh membranes. The application of the plaster should be in two coats: 6mm scratch coat, 6mm second or float coat. If a finish coat is required this should be of 3mm. Tarmac Whitewall should be applied in accordance with good plastering practice as described in BS 8481 : 2006, BS EN 13914-2 : 2005. Always allow 24 hours drying time between coats of plaster. For a high impact resistant finish, use Whitewall High Impact Backing Plaster.

**NOTE:** Tarmac Whitewall and Tarmac Whitewall High Impact Backing Plaster are not suitable for areas of high humidity and wet areas such as swimming pool surrounds.

#### 10.2 RENDERING

Render with a mix of sand, cement and lime should be applied in two coats using the procedures defined within BS EN 13914-1 :2005 to a total thickness of 14mm. A 3mm skim coat of finishing plaster can be added once the render is fully cured. The scratch coat should be a mix of 1 part lime: 1 part cement: 5 parts clean well-graded sharp sand and the second or float coat should be a mix of 1 part lime: 1 part cement: 6 parts clean well-graded sharp sand. The scratch coat should be 7mm and the second or float coat should be 7mm. To lessen incidence of cracking, it is best to mix the lime and sand a day or more before use. Cement can then be added at the time of rendering. The work should be of two coats of render and if required, a third coat of finishing plaster. The purpose of the 7mm scratch coat is to stiffen up the lath and to provide a rough and absorbent backing for subsequent coats.

Work this scratch coat well into the mesh. Each 7mm coat of render should be allowed to dry for a period of not less than seven, preferably ten days, longer if possible. Cracking may occur if shorter time is allowed between coats. It is important that the render coats are allowed to cure correctly over the 7 to 10 day period with the render dampened as required. If the scratch coat has not fully cured, slumping of the render can result. Before applying the second or float coat, carefully drill or scratch out a small area into an area behind the mesh, within the membrane stud, to confirm that it is fully cured. The surface will cure quite quickly but the area behind the mesh must be fully cured also. In warm periods the render should be protected from excessive drying out by covering with damp hessian sheets with plastic sheeting over. Dampened down the scratch coat before application of the float coat. A smooth finish is not recommended.

Expansion joints should be trowelled in through the render to the membrane. These joints must be filled with a suitable flexible polymer-based sealant. Expanded metal beads can be fixed where appropriate using dabs of the same material mixed as for the scratch coat.

#### 10.3 HYDRAULIC LIME

NHL (Natural Hydraulic Lime) 3.5 should be used to a combined depth of 20mm with a 10mm scratch coat and a 10mm second or float coat. The mix ratio is 2.5 parts sand to 1 part NHL 3.5 mixed as per manufacturers instructions. The 10mm scratch coat is pushed firmly into the membrane mesh. Check the application the day after and rub out any cracks. The surface should be thoroughly scratched without breaking the surface of the mesh.

The scratch coat has to be left for a minimum of 7 days to set. It should be protected from draughts and extremes of temperature. Before applying the second or float coat, carefully drill or scratch out a small area into an area behind the mesh, within the membrane stud, to confirm that it is set and reasonably hard. The surface will cure quite quickly but the area behind the mesh that has to be set. The second coat is the float coat and is applied then ruled off to flatten the wall surface. The mix ratio is 2.5 parts sand to 1 part NHL 3.5 mixed as per manufacturers instructions. The scratch coat has to be dampened down before application of the float coat. The work has to be protected and tended as for the scratch coat. The second coat is floated or trowelled as the finished coat.

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### 10.4 PLASTERBOARD ON DABS

Plaster board panels can be fixed to 803 Newtonite & 805 Newlath by the dot and dab method, giving a dry surface ready for immediate decoration. 'Dabs' should be applied to the heads of the 800 Mesh Plugs, board edges and membrane to cover 50% of the membrane. **NOTE: We do not recommend that laminated or insulated plasterboard is dot and dabbed to Newton meshed membranes.** Laminated boards have to be fixed to the wall with a mechanical fixing at each side of the board, just above half way up, so that the board does not come apart during a fire. This is a requirement of UK building code. It is not possible to mechanically fix through the laminated board without puncturing the membrane. If insulation is required to the wall build, use Newton 803, which is not meshed, with an independently supported wall frame.

**DO NOT APPLY DECORATIONS UNTIL PLASTERS OR RENDERS ARE THOROUGHLY DRY.**

**NOTE:** Although 803 Newtonite & Newton 805 Newlath pose no health hazards usual protective clothing and goggles should be worn in accordance with current health and safety regulations. See current System 800 MSDS sheet available on our web site or by contacting John Newton on the number below.

Newton 803 Newtonite, & 805 Newlath, 800 Profile, Newton Mastic, Newton Mesh Tape, 800 Mesh Plugs and 800 Cob Plugs are available from Newton Waterproofing Systems and from good builders merchants.

*Technical staff will be pleased to give help and advice on the most effective use of the product.*