

John Newton & Co Ltd

Newton House
17-19 Sovereign Way
Tonbridge
Kent TN9 1RH

Tel: 01732 360095 Fax: 01732 359033
e-mail: info@newtonwaterproofing.co.uk
website: www.newtonwaterproofing.co.uk



Agrément Certificate
94/3010
Product Sheet 3

NEWTON MEMBRANE SYSTEMS

NEWTON 503

This Agrément Certificate Product Sheet⁽¹⁾ relates to Newton 503, a moulded HDPE membrane, for use as damp-proofing on walls and floors, over a contaminated or damp background, to support a dry lining and flooring. The product is part of the Newton System 500 below-ground internal waterproofing system, and can also be used above ground as a damp-proofing membrane.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Resistance to water and water vapour — the membrane is water resistant and has a high resistance to water vapour transmission (see section 6).

Resistance to salt transfer — the membrane provides an effective barrier to the transmission of salts or other contaminants from the substrate (see section 8).

Resistance to puncture, impact and loading — the membrane has a high resistance to puncture and will not be damaged by normal foot traffic during installation, or while laying concrete or screeding. It can support the long-term loadings likely to be experienced in service without undue deformation (see section 9).

Durability — under normal conditions of use the system will provide an effective barrier to the transmission of salts, liquid water and water vapour for the life of the structure in which it is incorporated (see section 12).



The BBA has awarded this Certificate to the company named above for the product described herein. The product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Second issue: 21 August 2014

Simon Wroe
Head of Approvals — Materials

Claire Curtis-Thomas
Chief Executive

Originally certificated on 28 October 2009

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

British Board of Agrément
Bucknalls Lane
Watford
Herts WD25 9BA

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tel: 01923 665300
fax: 01923 665301
e-mail: customerservices@bba.star.co.uk
website: www.bbacerts.co.uk

Regulations

In the opinion of the BBA, Newton 503, if installed, used and maintained in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



The Building Regulations 2010 (as amended) (England and Wales)

For new construction and a 'Material Change of Use' of an existing buildings, as defined in Regulation 5a

Requirement: C2(a)(b)

Resistance to moisture

Comment:

The system adequately resists the passage of moisture. See section 6.1 of this Certificate.

Regulation: 7

Materials and workmanship

Comment:

The system is acceptable. See section 12 and the *Installation* part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

For new construction and a 'Conversion' of an existing building, as defined in Regulation 4

Regulation: 8(1)

Durability, workmanship and fitness of materials

Comment:

The system is acceptable. See section 12 and the *Installation* part of this Certificate.

Regulation: 9

Building standards applicable to construction

Standard: 3.3

Flooding and ground water

Comment:

The system can contribute to minimising or eliminating the effects of flooding on the building fabric and/or the building element, with reference to clause 3.3.1⁽¹⁾⁽²⁾. See section 6.1 of this Certificate.

Standard: 3.4

Moisture from the ground

Comment:

The system adequately resists the passage of moisture, with reference to clauses 3.4.1⁽¹⁾⁽²⁾, 3.4.2⁽¹⁾⁽²⁾, 3.4.5⁽¹⁾⁽²⁾, 3.4.6⁽¹⁾⁽²⁾ and 3.4.7⁽¹⁾⁽²⁾. See section 6.1 of this Certificate.

Standard: 3.6(a)

Surface water drainage

Comment:

The system can contribute to satisfying this Standard, with reference to clause 3.6.3⁽¹⁾⁽²⁾. See section 6.1 of this Certificate.

Standard: 3.10

Precipitation

Comment:

The system adequately resists the passage of moisture, with reference to clause 3.10.1⁽¹⁾⁽²⁾. See section 6.1 of this Certificate.

Standard: 7.1(a)

Statement of sustainability

Comment:

The system can contribute to meeting the relevant Requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.

Regulation: 12

Building standards applicable to conversions

Comment:

All comments given for this system under Regulation 9, also apply to this Regulation, with reference to clause 0.12.1⁽¹⁾⁽²⁾ and Schedule 6⁽¹⁾⁽²⁾.

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).



The Building Regulations (Northern Ireland) 2012

For new construction and a 'Material Change of Use' of an existing building, as defined in Regulation A9

Regulation: 23(a)(i)(iii)(b)(i)

Fitness of materials and workmanship

Comment:

The system is acceptable. See section 12 and the *Installation* part of this Certificate.

Regulation: 28(a)(b)

Resistance to moisture and weather

Comment:

The system adequately resists the passage of moisture. See section 6.1 of this Certificate.

Construction (Design and Management) Regulations 2007

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See section: 1 *Description* (1.1) of this Certificate.

Additional Information

NHBC Standards 2014

NHBC accepts the use of Newton 503, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 5.1 *Substructure and ground bearing floors* and 5.2 *Suspended ground floors*.

CE marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with harmonised European standard BS EN 13967 : 2012. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

1.1 Newton 503 membrane is a white, translucent high-density polyethylene (HDPE) sheet with moulded studs at 20 mm centres, for use as part of Newton System 500⁽¹⁾, or above ground as a damp-proofing membrane. The membrane is manufactured to the following nominal characteristics:

Thickness (mm)	0.5
Dome height (mm)	3.0
Weight per unit area (kg·m ⁻²)	0.5
Roll length (m)	20.0
Roll width (m)	2.0
Weight per roll (kg)	23
Air gap volume (litres per m ²)	1.56
Watertightness* 60 kPa	pass
Compressive strength* (kN·m ⁻²)	170

(1) Newton System 500 is a below-ground waterproofing system for both new build and refurbishment projects, consisting of Newton waterproof membranes linked to a water drainage system to convey excess water safely away from the property.

1.2 Ancillary items used with the membrane include:

- Newton MultiPlug — dark blue plastic plug supplied with preformed rubber seal for use in masonry walls and concrete. The MultiPlug acts as a waterproof wall plug for securing the membrane to the wall. Battens, independent wall lining systems or wall ties can be secured into the head of the plug without having to make additional holes through the membrane
- Newton Nu-Seal Plug — red glass-filled nylon plug for securing Newton membranes in below-ground situations. The Nu-Seal Plug requires the Newton Waterseal Rope to be wrapped in a bead around the plug head prior to fixing the membrane. Nu-Seal fixing plugs are recommended when affixing the Newton 503 or 503 Mesh⁽¹⁾ membrane to vaulted brick arches
- Newton Waterseal Tape — black or white butyl tape for sealing joints in the membrane
- Newton Waterseal Rope — black or white butyl beading for sealing the air gap around pipes and the edges of the membrane, and joining floor and wall membranes. It is also used to seal around the head of the Nu-Seal Plugs prior to fixing Newton membranes
- Newton Mastic Sealer — silicone sealant for sealing the Newton membranes in an above-ground situation where no hydrostatic pressure is possible
- Newton Overtape — a self-adhesive membrane strip for sealing junctions between walls and floors, and for sealing joints at corners. It can also be used for sealing around service penetrations
- Newton Basedrain — a PVC-U system of drainage channels with 18 mm diameter holes every 100 mm along its length, to collect excess water from behind the membrane and conduct it to a collection point for subsequent discharge. It is available in straight lengths and also in preformed angles for use at corners and junctions. Newton Basedrain is a part of the Newton System 500 internal cavity drain system
- Newton Floordrain — as Newton Basedrain but without the upstand or flange. Floordrain is used to receive water from floor construction joints and to connect Basedrain to internally-sited sumps
- Newton Drainage Adaptor — changes profile from Basedrain or Floordrain to receive 63 mm outside diameter pipe for connections to services or to sumps.

(1) Newton 503 Mesh is used as part of Newton System 500 and is the subject of Product Sheet 4.

2 Manufacture

2.1 The membrane is formed in a continuous process in which HDPE is extruded into sheets and the studs impression-formed.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

3 Delivery and site handling

3.1 The membrane is delivered to site in rolls packaged in plastic woven sacks, bearing the product and Certificate holder's name, and the BBA logo incorporating the number of this Certificate.

3.2 Rolls should be stored on end, under cover and protected from sharp objects, sunlight and high temperatures.

3.3 The packaging details of the ancillary items are shown in Table 1.

Table 1 Packaging details

Item	Dimensions/Volume	Packaging/Quantity
Newton Nu-Seal Plug	25 mm diameter head 70 mm long (Use 11 mm drill bit)	bags of 100
Newton Multiplug	25 mm diameter head 57 mm long (Use 10 mm drill bit)	bags of 100
Newton Waterseal Tape	22.5 m long x 30 mm wide x 2 mm thick	12 rolls per box
Newton Waterseal Rope	4.75 m long x 10 mm diameter	12 rolls per box
Newton Mastic Sealer	0.4 litre cartridge	25 cartridges per carton
Newton Corner Detail	20 m x 150 mm in black or white 20 m x 100 mm in black	2 rolls per box at 150 mm wide 4 rolls per box at 100 mm wide
Newton Basedrain and Newton Floordrain	2 m lengths	6 lengths per pack

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Newton 503.

Design Considerations

4 Use

4.1 Newton 503 is satisfactory for damp-proofing or waterproofing walls and floors, above or below ground, in new construction or in existing buildings over a contaminated or damp background. The membrane can be used as a substitute for Newton 508 membrane on walls and floors in situations where space saving is a consideration and the anticipated drainage rate can be accommodated by the lower drainage capacity of the membrane. It can support a dry lining, screed or flooring, in the following situations:

- on damp walls and floors in underground situations subject to high groundwater levels, and perennial moisture
- in conjunction with a remedial dpc system where the walls and floors have a high salt content, and/or it is necessary to complete the installation immediately without allowing a period for initial drying
- over walls and floors which have a friable or painted surface, are contaminated with oil or mould, or have a high salt content
- as a waterproofing membrane in areas subject to vibration, as part of Newton System 500.

4.2 Depending on the application required and the site conditions, the membrane may be used as:

- an underfloor damp-proof membrane
- a dry lining for walls for use above ground
- part of Newton System 500 for use below ground, covering walls and floors, with provision made for disposing of water build-up behind the membrane via a sump and pump. If available and considered suitable, natural gravity feed drainage that is below the internal basement floor level can be utilised instead of a sump and pump, in which case the advice of the Certificate holder should be sought.

4.3 The membrane has not been assessed for use in chemically contaminated areas, such as brownfield sites.

4.4 The membrane consists of a 0.5 mm thick HDPE and, in the opinion of the BBA, meets the criteria for a radon barrier according to BRE Report (BR 211 : 2007) *Radon : guidance on protective measures for new buildings*. However, the effectiveness of the joint sealing system used with Newton 503 has not been assessed against radon and is outside the scope of this Certificate.

4.5 The system is satisfactory for use in Type C (drained protection) constructions in accordance with BS 8102 : 2009.

4.6 Under normal operating conditions the membrane is not affected by underfloor heating.

5 Practicability of installation

The membrane should only be installed by installers who have been trained and approved by the Certificate holder.

6 Resistance to water and water vapour

6.1 The membrane is water resistant and has a high resistance to water vapour transmission. However, the system as installed is not resistant to hydrostatic pressure and, consequently, the measures described in the *Installation* part of this Certificate must be followed to ensure that the membrane acts as a drainage layer with no excessive build-up of water behind the system.

6.2 All joints and fixings must be sealed with Newton sealing products, and drainage channels and gullies or sumps and pumps should be installed as necessary to disperse excess or standing water.

7 Risk of condensation

7.1 The generation and dispersal of moisture in the internal environment must be controlled, and appropriate and robust designs selected to minimise the risk of both surface and interstitial condensation, especially where insulation is used over the membrane.

7.2 In common with most waterproofing membranes, the product has a very high resistance to vapour diffusion, and when placed on the cold side of a construction may increase the risk of interstitial condensation. A calculation should be carried out to BS 5250 : 2011 and designers should consider appropriate techniques for managing the safe egress of moisture vapour with care, (such as control of the internal environment or use of a vapour control layer on the warm side of the insulation) and in particular the effect of moisture on any materials at or in contact with materials below the local dew-point.

8 Resistance to salt transfer

The membrane provides an effective barrier to the transmission of salts or other contaminants from the substrate.

9 Resistance to puncture, impact and loading

9.1 The membrane has a high resistance to puncture and will not be damaged by normal foot traffic during installation or while laying concrete or screeding to BS 8204-1 : 2003.

9.2 The membrane can support the long-term imposed loadings defined in NA to BS EN 1991-1-1 : 2002, Table NA.2, categories A to D, without undue deformation.

10 Wall-mounted fittings

Wall-mounted fittings (apart from lightweight items such as framed pictures) should be fixed where possible into battens, whose position and number of support fixings into the loadbearing structure are predetermined. Only in exceptional circumstances should fittings be fixed (using proprietary fixings) through the membrane and lining board to the loadbearing structure behind. Holes made in the membrane must be repaired with either Newton Rope or Newton Overtape.

11 Maintenance

11.1 As the membrane is confined within a wall or floor space and has suitable durability (see section 12), maintenance is not required.

11.2 Regular maintenance of all gullies, sumps and pumps must be conducted to ensure that a build-up of water does not occur behind the membrane.

12 Durability



Under normal conditions of use the system will provide an effective barrier to the transmission of salts, liquid water and water vapour for the life of the structure in which it is incorporated.

13 Reuse and recyclability

The product comprises HDPE, which can be recycled.

Installation

14 Survey

14.1 Where the property is below ground, or where conditions are damp, a full survey is necessary by a specialist waterproofing surveyor to diagnose the cause and to establish if treatment is required.

14.2 If rising damp to above-ground elevations is found, a remedial treatment is conducted in accordance with the relevant Agrément Certificate, BS 6576 : 2005 and the Property Care Association Code of Practice, 2006.

14.3 Appropriate remedial measures are taken to rectify major causes of damp conditions or water ingress, and to repair structural defects.

15 Surface preparation

15.1 When used in new constructions, the concrete base must be laid in accordance with BS 8204-1 : 2003.

15.2 If a board covering is to be laid directly on the membrane, the concrete base must have a surface regularity with a maximum permissible departure of 5 mm from the underside of a 2 m straight edge, resting in contact with the floor, in accordance with BS 8204-1 : 2003.

15.3 When used in existing buildings any unsound plaster, render or screed is removed to expose the substrate, which is cleaned with a stiff brush to remove loose material, laitance, salt residue, mould or adhesive. If mould is present the substrate is treated with a fungicidal wash.

15.4 Uneven floor substrates should be dubbed out with a cement-sand (1:4) render or screed, to the tolerance described in section 15.2. They should be allowed to dry thoroughly before the Newton 503 membrane is applied above. Newton 503 when used on walls is able to accommodate uneven substrates.

16 Procedure

General

16.1 When used as part of Newton System 500, Newton 503 may be used in combination with any of the appropriate Newton membranes which are the subject of Product Sheets 1, 2, 4 and 5.

16.2 The membrane should preferably be used with the flanged edge positioned in front of and overlapping the previously installed membrane width by three studs, and sealed with Newton Waterseal Rope positioned between the last two rows of studs.

16.3 Fixings are made through the membrane into 10 mm holes, drilled centrally through the domes. Newton MultiPlugs (complete with preformed rubber seal) are inserted into the holes and hammered flush with the membrane with a club hammer. The seal must be compressed to function as a barrier against water ingress, and this should be visually checked as each plug is fixed.

16.4 Spacing between fixings will depend on the method of dry lining to be applied. When using preservative-treated timber battens the fixings should be spaced 400 mm vertically and 600 mm horizontally. Free-standing timber and metal frames do not require specific fixing centres, and sufficient fixings should be used to ensure that the membrane is reasonably tight to the wall, especially at corners. Where lateral support is needed for independent framework, bracing can be applied into the plug heads for stability. Where using an independent blockwork in front of the Newton 503, wall ties can be inserted into the plug heads to give the blockwork lateral support.

16.5 Any item screwed into MultiPlug's fixing hole should have a maximum screwing-in depth of 25 mm.

Walls

16.6 Installation of the membrane is usually commenced at the top of the construction. The membrane may require initial fixing on a ceiling or along the upper edge of a wall, prior to final fixings along batten runs. For joints, the two membrane sheets are overlapped by a minimum of three studs (see section 16.2), and for horizontal joints the lower sheet is always positioned in front of the upper sheet.

16.7 The installation is conducted over windows and the membrane is cut away to expose them. The gaps are then sealed with Newton Waterseal Tape or Rope.

16.8 For doors and some obstructions the technique covered in section 16.7 cannot be used. Instead, the membrane is installed up to the perimeter and the gap sealed in the same manner.

16.9 Power cables, points and light switches should preferably be remounted in front of the membrane.

16.10 In below-ground installations, the practice of leaving the top of the wall membrane unsealed where there is no requirement for a ceiling membrane to be installed may need to be reconsidered in cases where ingress of gases, odours or vermin is a consideration (such as in proximity to food preparation areas). The advice of the Certificate holder should be sought in these situations.

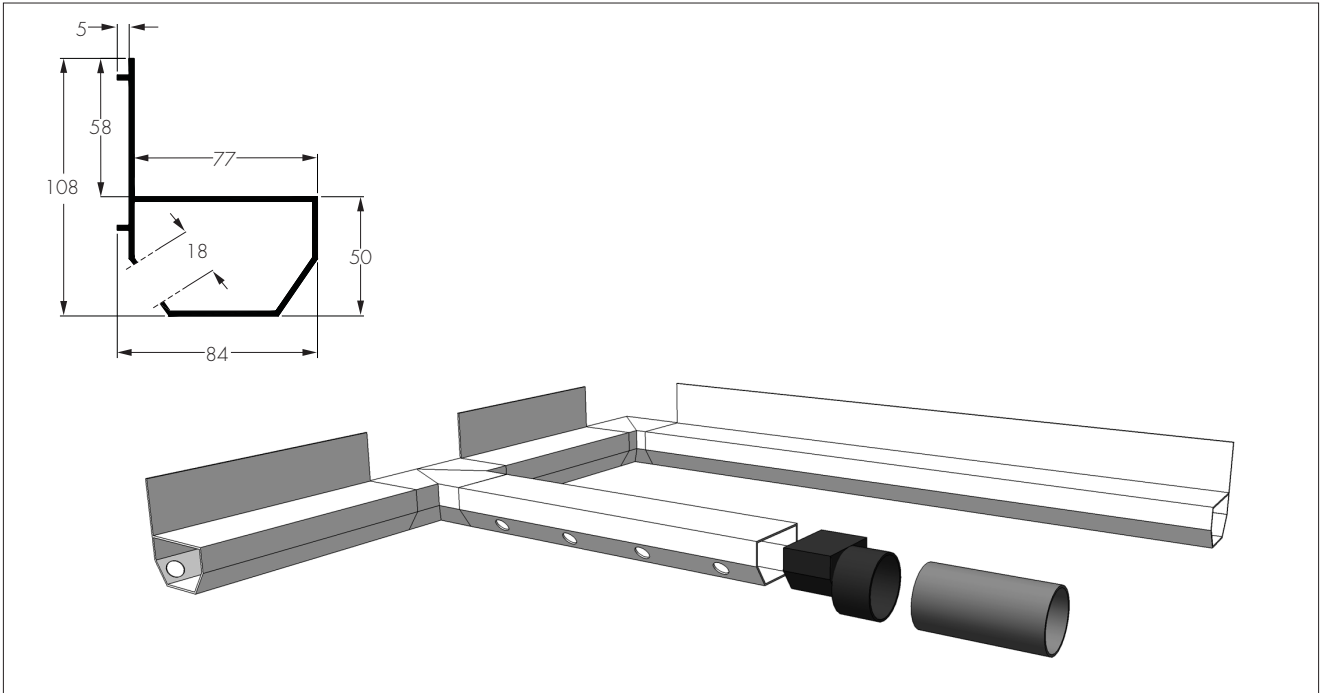
Floors

16.11 When used below ground level Newton 503 should be utilised as part of the Newton System 500, with provision made for the disposal of any water which may find its way into the structure⁽¹⁾. This is achieved by the installation of Newton Basedrain around the perimeter of rooms and Floordrain across the room, above the line of the construction joints, and connecting into the perimeter Basedrain. Water ingress is either conveyed to the outside of the structure and discharged via safe natural drainage (drainage that cannot block or generate back-pressure), or conveyed to a Newton sump and subsequently pumped out of the structure.

(1) When using the Newton 503 membrane across a new laid concrete slab, Newton Lime Inhibitor should be applied in accordance with the recommendations of BS 8102 : 2009.

16.12 Newton Basedrain (see Figure 1) is installed at wall/floor junctions around the perimeter of walls to convey ingressing water to a collection point (sump). The Basedrain can be cut on site using a handsaw to form mitred joints around corners, or preformed angled pieces can be used. In either case sections of Basedrain are joined together using duct tape. Newton Floordrain should be utilised across construction joints in the slab.

Figure 1 Newton Basedrain (all dimensions in mm)



16.13 Newton Basedrain is either sunk into formed or cut channels in the floor slab adjacent to the wall, or placed on the existing floor with flooring grade insulation butted up to it (see Figures 2 and 3). In the latter case, the insulation may be subjected to some level of water exposure; therefore, water-resistant grades must be used. The membrane should be laid directly on top of the insulation and a 65 mm thick screed applied over the top.

Figure 2 Installation detail

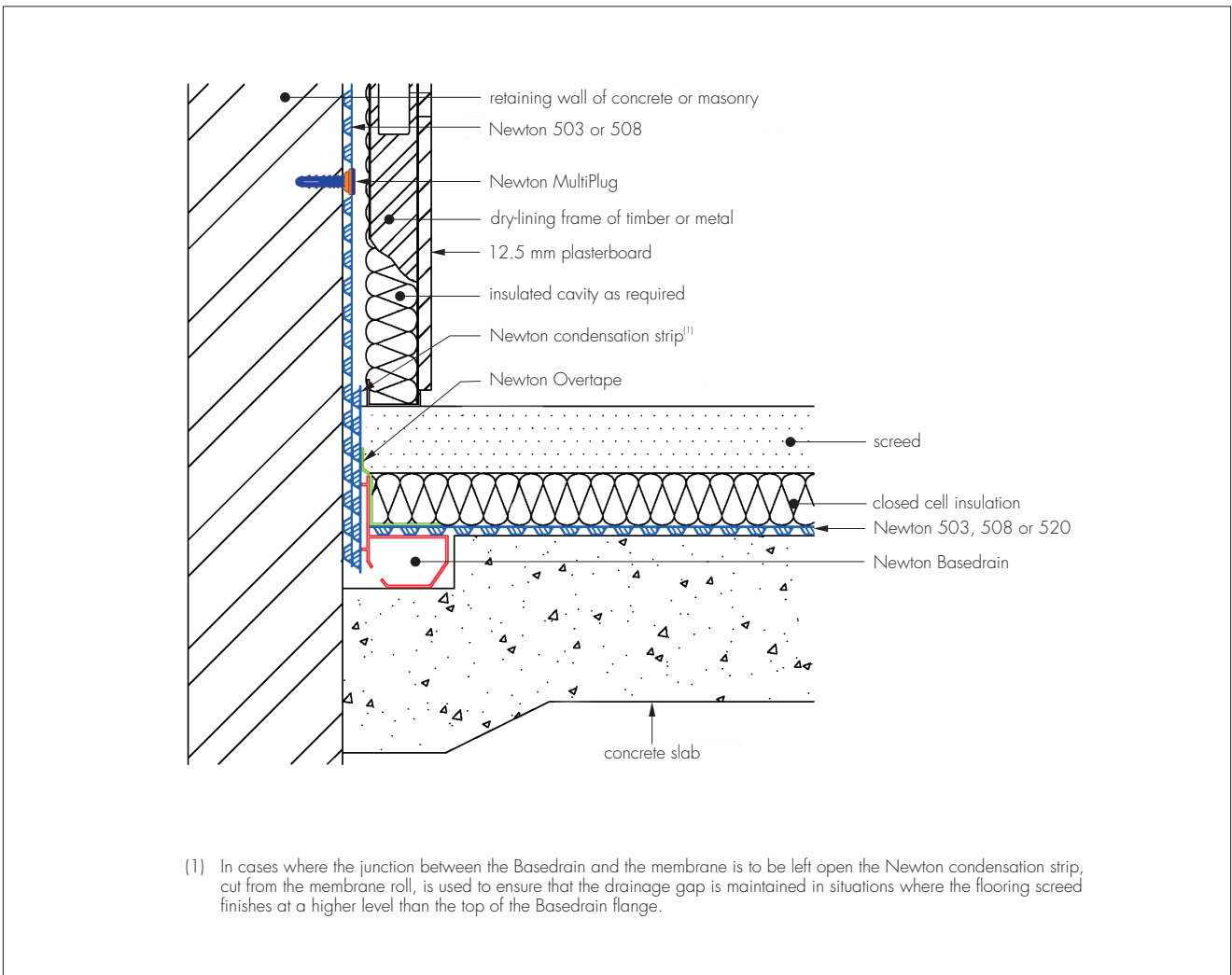
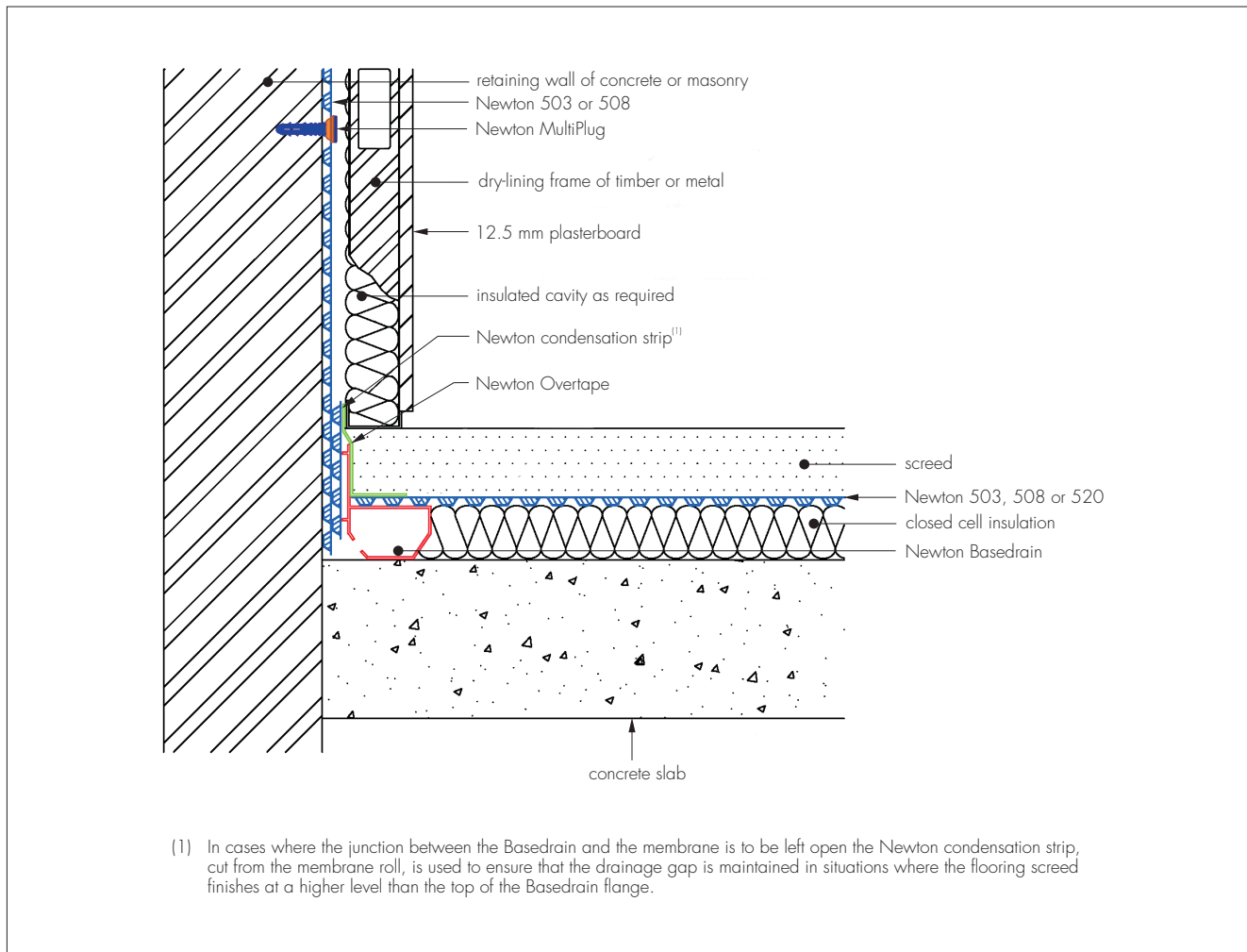


Figure 3 Installation detail



16.14 The membrane is rolled out 'studs down' over the floor, and consecutive membrane widths are overlapped by a minimum of three studs (see section 16.2).

16.15 The membrane is cut within 5 mm of any pipes and services in the floor, and the gap filled with Newton Waterseal Rope. A patch of membrane is overlaid and sealed to the services with Newton Waterseal Rope, and its circumference sealed with Newton Waterseal Tape.

16.16 Penetrations through the floor membrane should be sealed with Newton Waterseal Tape or Waterseal Rope or Newton Overtape. The penetrating item may require application of a primer to ensure adhesion of the Newton products. Advice should be sought on this from the Certificate holder.

17 Dry lining of walls

17.1 Gypsum plasterboard to BS EN 520 : 2004, or similar dry lining boards which are the subject of a current BBA Certificate, are fixed to the battens or independent timber or metal frameworks with galvanized screws or nails, positioned a minimum of 12 mm from the edge of the board. Care should be taken to ensure that penetration of the plasterboard by screws or nails is less than batten depth, to avoid puncturing the membrane.

17.2 When a plaster finish is required, Newton 503 membrane on walls may be substituted by any of the Newton meshed membrane products subject of this Certificate. However, the fixings designed for below-ground use (MultiPlugs and Nu-Seal plugs) must be used when the membrane forms part of the Newton System 500.

18 Finishing works

After the system has been installed and the walls dry-lined, permanent decorations, such as vinyl paper or oil paint, may be applied. Temporary permeable decorations (necessary with traditional, cement-based waterproofer) are not necessary for use with this system.

19 Floor membrane coverings

19.1 If required, extruded closed-cell polystyrene insulation boards, minimum density $30 \text{ kg}\cdot\text{m}^{-3}$, may be laid over the membrane.

19.2 Suitable tongue-and-groove flooring board panels should be selected in accordance with BS EN 12871 : 2001, and loose-laid over the membrane to within 10 mm of the walls. The panels are staggered and the joints sealed with a thermoplastic wood adhesive to BS EN 204 : 2001.

19.3 Alternatively, the membrane is covered by concrete or screed a minimum of 65 mm thick in accordance with BS 8204-1 : 2003. Care should be taken to ensure the membrane is not displaced when placing the concrete or screed.

19.4 Proprietary screeds may also be considered, which can generally be laid at thicknesses less than 65 mm, but the use of these products with the membrane has not been assessed by the BBA.

Technical Investigations

20 Tests

Tests were carried out, and the results assessed, to determine:

- thickness
- resistance to nail tear
- resistance to long-term loading
- resistance to short term compression.

21 Investigations

21.1 A user survey of treated installations and contractors was conducted to establish the system's performance in use.

21.2 An assessment was made of the effectiveness of the sealing system based on data obtained during the assessment of Newton 508 membrane.

21.3 An assessment was made of the scope of use and durability of the system in relation to the generic properties of the membrane.

21.4 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

Bibliography

BS 5250 : 2011 *Code of practice for control of condensation in buildings*

BS 6576 : 2005 *Code of practice for diagnosis of rising damp in walls of buildings and installation of chemical damp-proof courses*

BS 8102 : 2009 *Code of practice for protection of below ground structures against water from the ground*

BS 8204-1 : 2003 *Screeds, bases and in-situ floorings — Concrete bases and cement sand levelling screeds to receive floorings — Code of practice*

BS EN 520 : 2004 *Gypsum plasterboards — Definitions, requirements and test methods*

NA to BS EN 1991-1-1 : 2002 UK National Annex to *Eurocode 1 : Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*

BS EN 12871 : 2001 *Wood-based panels — Performance specifications and requirements for load bearing boards for use in floors, walls and roofs*

BS EN 13967 : 2012 *Flexible sheets for waterproofing — Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet — Definitions and characteristics*

Property Care Association COP02 *Code of Practice for Installation of Remedial Damp-proof Courses in Masonry Walls*

22 Conditions

22.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page — no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective;
- is copyright of the BBA
- is subject to English Law.

22.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

22.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

22.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

22.5 In issuing this Certificate, the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

22.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.