

Rev 1.2 - 2 January 2015

PRODUCT CODE - FP4

## INTRODUCTION

Newton 210 FlexProof-NV is a highly advanced single component liquid waterproofing material, which forms an elastomeric polymer membrane capable of handling severe building movements and deformations.

Newton 210 FlexProof-NV is quite unique with amazing characteristics allowing it to be used without a primer, without mixing and in weather conditions that preclude the use of alternatives. With a tight project timescale, 210 FlexProof-NV can be relied upon to ensure the project is completed on time.

Newton 210 FlexProof-NV can be used as the primary waterproofing membrane below a number of hard finishes and drainage options and when partnered with Newton 207 Deckdrain drainage membrane, creates a complete drained waterproofing solution to your deck, terrace or flat roof.

This data sheet is specifically for the application of Newton 210 FlexProof-NV to decks, terraces and flat roofs. For other uses of the product, please refer to the following Newton Data Sheet: **Newton 210 FlexProof-NV - Waterproofing of Movement Joints**

Application is by trowel or squeegee to a large variety of different surfaces such as concrete, screed and timber boards to provide a continuous highly flexible membrane.



## TYPICAL APPLICATIONS

- Waterproofing of podium decks, balconies, terraces and flat roofs.
- As the primary waterproofing membrane within a green roof specification.
- As the waterproofing membrane above insulation in a warm roof specification.
- Waterproofing of planters.

| NEWTON 210 FLEXPROOF-NV   |                      |              |
|---|----------------------|--------------|
| Colour  | <b>Grey</b>          |              |
| Specific Gravity  | <b>1.44</b>          |              |
| E-modulus (N/mm <sup>2</sup> )  | <b>0.55</b>          |              |
| Service Temperature   | <b>-40°C to 90°C</b> |              |
| Watertightness (EOTA TR-003)  | <b>Watertight</b>    | EOTA TR-003  |
| Hardness (Shore A)  | <b>30</b>            | ASTM D2240   |
| Elongation (EN ISO 527-3)   | <b>450%</b>          | EN ISO 527-3 |
| Bond to clean concrete (kPa)  | <b>&gt;450</b>       | EOTA TR-003  |
| <b>NOTE - Application Temperature:</b>  |                      |              |
| Newton 210 FlexProof-NV can be applied at temperatures that are below 0°C, but the substrate must be completely dry so that no ice crystals exist. Product will not adhere to ice crystals; either force dry the substrate or delay application until temperature is above 5°C. |                      |              |

## KEY BENEFITS

- No mixing required - simply open the packaging and use.
- Can be used in sub-zero temperatures and on slightly damp substrate.
- No primer required - saving on primer and labour costs.
- Single coat application.
- 100% waterproof, but allows vapour diffusion.
- Very flexible - Resistant to movement and fissures in substrates.
- Excellent adhesion to suitable substrates.
- Resistant to temperature variations maintaining its characteristics between -40°C & 90°C.
- Excellent resistance to the high alkalinity of concrete.

## SUITABLE SUBSTRATE

- Concrete and Screed
- New Oriented Strand Board, Plywood and Chipboard

## 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 here [Technical Drawings](#) and a selection are also available via [FastrackCAD](#)

## TRAINING & COMPETENCY OF USER

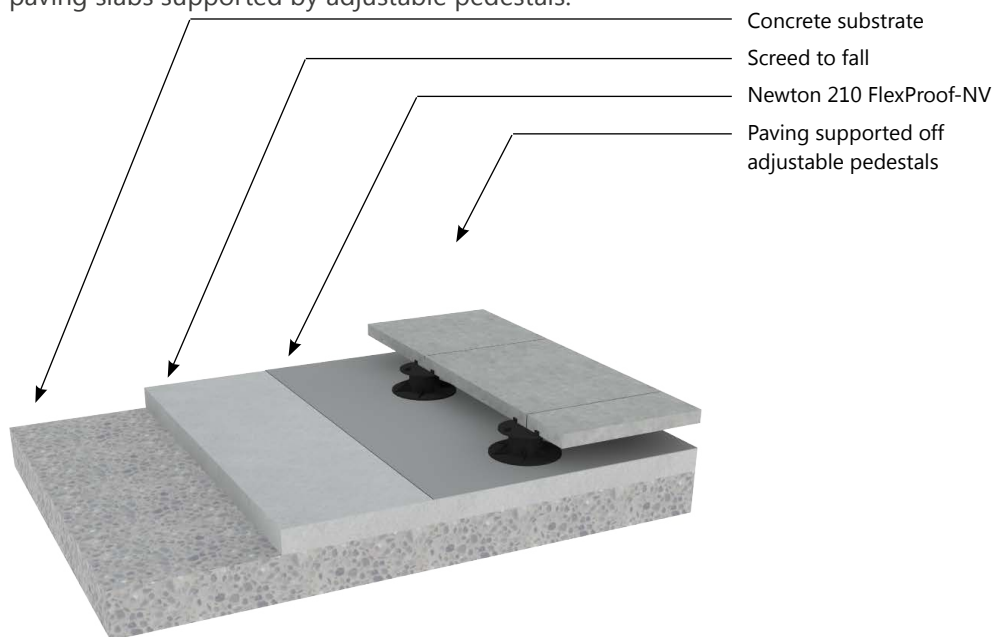
Newton 210 FlexProof-NV should be installed only by those with experience in the design and installation of deck or roof waterproofing.

# NEWTON 210 FLEXPROOF-NV

## Waterproofing of Podium Decks and Flat Roofs

### TYPICAL DETAIL

This detail shows Newton 210 FlexProof-NV waterproofing a concrete substrate, with no primer required, below a drainage zone created by paving slabs supported by adjustable pedestals.



### TOOLS REQUIRED

- Trowel or squeegee for application to horizontal surfaces
- Small short pile roller for lapping to horizontal/vertical interfaces
- Knife or scissors for opening the packaging

### CONSTRUCTION

The construction should conform with current Building Regulations, British Standards and relevant Codes of Practice.

### CONSTRUCTION - NEW CONCRETE

New concrete should be designed by a Structural Engineer to EN 1992 (Formally BS8110) and have a surface finish to Class of finish U3 as documented in 'General Specification for Civil Engineering Works' section 14: 'Formwork and Finishes to Concrete', 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

### CONSTRUCTION - TIMBER

A timber deck or roof should be designed and built so as to be structurally stable to imposed dead loads and wind loads in accordance with BS6399. All board edges should be supported by joist and noggins. Unless the design specifies closer centres, oriented strand board and plywood board fixing centres should not exceed 100mm. Movement gaps at abutment with rigid up-stands should be not less than 10mm and gaps between square edge boards should not exceed 3mm.

**NOTE: IT IS VERY IMPORTANT THAT NO MOVEMENT EXISTS BETWEEN BOARDS AND NEWTON 210 FLEXPROOF-NV SHOULD NOT BE INSTALLED UNLESS THE DECK OR ROOF IS CHECKED AND CONFIRMED AS BEING STRUCTURALLY STABLE.**

### SURFACE PREPARATION - GENERAL

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 dust, laitance, oils, paints or other forms of contamination. Grit blasting or jet washing can be used to remove laitance and surface contamination. Adding mild detergents to the jet wash water will improve effectiveness.

### SURFACE PREPARATION - CONCRETE

- 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 will be filled by the application of Newton 210 FlexProof-NV.

### CONSTRUCTION JOINTS

Tight construction joints of up to 1mm will be filled by the application of the Newton 210 FlexProof-NV.

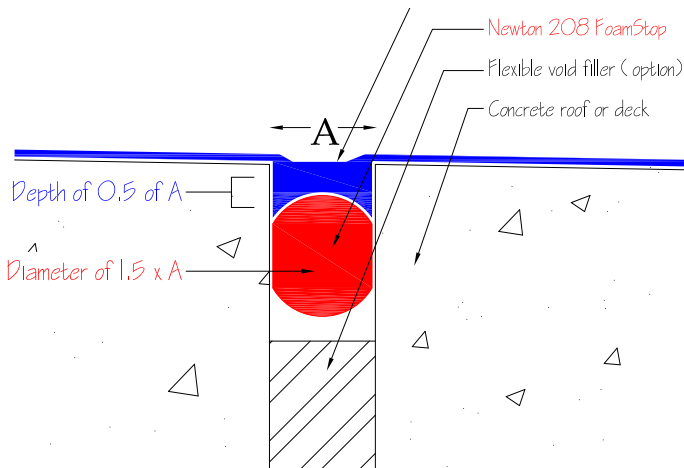
Construction joints that are wider than 1mm should be filled with Newton 210 FlexProof-NV prior to the application of the main treatment.

# NEWTON 210 FLEXPROOF-NV

## Waterproofing of Podium Decks and Flat Roofs

### MOVEMENT JOINTS

Movement joints should be detailed as shown in the detail below with the Newton 210 FlexProof-NV continuing into the joint above a packer of Newton 208 FoamStop. The Newton 208 FoamStop should be sized to be 1.5 times the width of the construction joint and should be inserted into the joint so that it is 0.5 times the width of the joint below the surface of the deck or flat roof. For more concise information on the waterproofing of movement joints to decks, flat roof and balconies, please see the data sheet *Newton 210 FlexProof-NV - Waterproofing of Movement Joints*.



### DECK & FLAT ROOF DRAINAGE DESIGN

Decks, flat roofs (and balconies functioning as roofs) should be engineer designed to provide adequate rainwater disposal to suitable drainage outlets. The design fall should be 1:40 to ensure a finished fall of at least 1:80.

Rain water should move freely to the drainage outlets either by the surface coating, a drainage membrane below a permeable surface coating or by a combination of surface coating and drainage membrane. The deck or roof design should not trap water above the Newton 210 FlexProof-NV membrane. The following are examples of good design that allows free drainage of rain water with no risk of water being trapped above the waterproofing membrane.

Paved surface (pedestrian use only) using paving pedestals

Pedestals are placed directly above the Newton 210 FlexProof-NV membrane creating a void. Most water will move freely by fall above the paving to the drainage outlets and water that passes through the paving will also move freely to the drainage outlets through the void created by the pedestals.

Paved surface bedded on sand above Newton 207 DeckDrain drainage membrane

Most water will move freely by fall above the paving to the drainage outlets and water that passes through the paving will also move freely to the drainage outlets through the drainage voids created by the Newton 207 DeckDrain.

Extensive Green Roof using Newton 220 Reservoir

Newton 220 Reservoir provides water holding cups so that mosses, sedum and grasses to green roofs have a plentiful water supply. Surplus water passes through the membrane to the drainage void created by the 20mm water cups so that water will move freely by fall to the drainage outlets.

Intensive Green Roof or Planter above Newton 207 DeckDrain

All water will permeate through the soil to the Newton 207 DeckDrain and then move freely to the drainage outlets though the drainage voids created by the Newton 207 DeckDrain.

The following are examples of poor design of the waterproofing and drainage system and should be avoided as they create a scenario where water could be permanently trapped above the waterproofing membrane:

Screed placed directly above the FlexProof-NV membrane  
Screed is porous and will become saturated when exposed to rainwater, potentially resulting in moisture being trapped above the waterproofing membrane. Solution: If a screed is used to create a fall, always apply the waterproofing membrane above the screed.

Paving bedded directly above the membrane  
Rain water will pass between the joints in the paving and saturate the sand, potentially resulting in moisture being trapped above the waterproofing membrane. Solution: Bed paving above Newton 207 DeckDrain.

### PRIMING

Newton 210 FlexProof-NV does not require a primer.

### APPLICATION - VAPOUR BARRIER - WARM ROOF

With an insulated warm roof build, a vapour control layer is required below the insulation. *Newton 902* is a liquid membrane that provides full gas (including radon and methane) and vapour control and should be included below the insulation when Newton 210 RubberFlex-NV is applied above the insulation in a warm roof build.

### MIXING

Simply pour from the foil bag and apply. No mixing required.

### APPLICATION - CHANGE OF DIRECTION TO VERTICAL SURFACES

Application to up-stands and down-stands of up to 150mm is carried out at the same time as the horizontal application, although it is easier to start at the changes in direction where possible. Apply Newton 210 FlexProof-NV to the vertical surface with a trowel or small roller to the desired height at a coverage rate of 1.8kg/m<sup>2</sup> and then bed-in Newton FlexProof Scrim into the interface until fully saturated within the liquid membrane.

# NEWTON 210 FLEXPROOF-NV

## Waterproofing of Podium Decks and Flat Roofs

Where the up-stand or down-stand is greater than 150mm, the Newton 210 FlexProof-NV is not viscous enough to be applied to the additional height and Newton FlexProof-X1 should be used instead: Treat the changes in direction first with the Newton FlexProof-X1 with a lap of at least 200mm to the horizontal surface. Bed Newton Scrim into the still tacky membrane as described above. The application of Newton 210 FlexProof-NV should commence only when the Newton FlexProof-X1 applied to the changes in direction is dry to the touch.

### APPLICATION - HORIZONTAL SURFACES

Apply one coat at 1.8kg/m<sup>2</sup> to the horizontal surface using a trowel or squeegee.

### CURING

Curing is dependent on temperature and humidity. At 20°C & 80% R/H Newton 210 FlexProof-NV is touch dry in about 60 minutes, is capable of being wetted by light rain within 10 minutes, is completely weatherproof within 120 minutes and is fully cured in about 10 hours.

### LIMITATIONS

Newton 210 Flex-Proof-NV is not suitable to be left uncovered and should be used below paving on pedestals or a Newton drainage or green roof membrane such as Newton 207 or Newton 220 Reservoir.

### COVERAGE

Single coat of 1.8kg/m<sup>2</sup> providing an overall membrane thickness of 1.3mm.

### POT LIFE

Newton 210 FlexProof-NV has no pot life as such. After pouring out the required amount of product, fold over the bag and place into and seal the lid of the bucket. Product will be usable even after about 6 months. If the product has skinned, simply remove the skin and the product below will be usable.

### CLEANING

Product that has not cured can be simply wiped off tools with a rag or cloth. Newton 204 Thinner breaks down 210 FlexProof-NV and can be used to assist cleaning, especially where the product has partly or fully cured.

### PACKAGING

7.5kg

### STORAGE

Store in dry conditions at temperatures between 10°C and 25°C. Do not expose to freezing conditions. Newton 210 FlexProof-NV has a 12 month shelf life when stored in original, unopened containers in accordance with manufacturers instructions.

### HEALTH & SAFETY

Product should only be used as directed. We always recommend that the Material Safety Data Sheet (MSDS) is carefully read prior to application of the material. Our recommendations for protective equipment should be strictly adhered to for your personal protection. The MSDS is available upon request from John Newton or online via our web site. Please see contact details below.

### ASSOCIATED PRODUCTS

**Newton FlexProof Scrim** - Used to reinforce changes of direction.

**Newton 208 FoamStop** - Backing rod for the application of Newton 210 FlexProof-NV to movement joints.

**Newton 204 Thinner** - For cleaning tools used with Newton FlexProof-X1.

**Newton 902** - Single part liquid membrane that provides a complete vapour barrier where Newton 210 FlexProof-NV is used as the waterproofing membrane for an insulated warm roof.