

DATA SHEET

NEWTON FLEXPROOF-X1

Construction Joint Waterproofing

Rev 1.2 - 23 July 2013

INTRODUCTION

Newton FlexProof-X1 is a highly advanced single component liquid waterproofing material, which forms an elastomeric polymer membrane that is rainproof in minutes and capable of handling severe building movements and deformations.

FlexProof-X1 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.

When applied by trowel or squeegee over construction joints in concrete, FlexProof-X1 provides a continuous highly flexible membrane that is resistant to water pressures of up to 2 bar (20m) over construction joints of up to 0.25mm.



This data sheet is specifically for the application of Newton FlexProof-X1 to construction joints to concrete earth retained structures. For other uses of the product, please refer to the following Newton Data Sheets:

Newton 401 FlexProof-X1 - Retaining Wall Waterproofing

Newton 801 FlexProof-X1 - Wet Room Waterproofing

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.

PRODUCT CODE - FP1

NEWTON FLEXPROOF-X1		
Colour	Grey	
Specific Gravity	1.54	
E-modulus (N/mm ²)	0.85	
Service Temperature	-40°C to 90°C	
Watertightness (EOTA TR-003)	Watertight	EOTA TR-003
Hardness (Shore A)	40	ASTM D2240
Elongation (EN ISO 527-3)	250%	EN ISO 527-3
Bond to clean concrete (kPa)	>450	EOTA TR-003
NOTE - Application Temperature:		
Newton FlexProof-X1 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.		

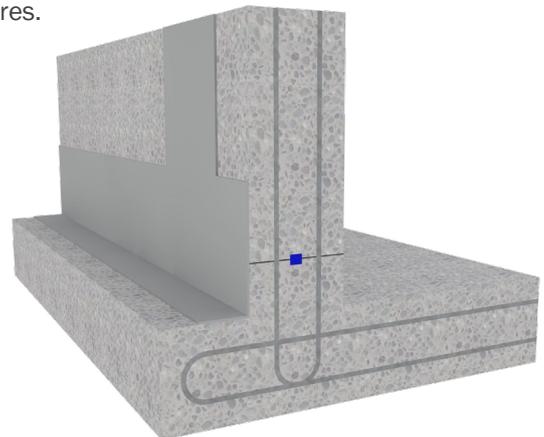
Please see section on page two for waterproofing performance data

TYPICAL APPLICATIONS

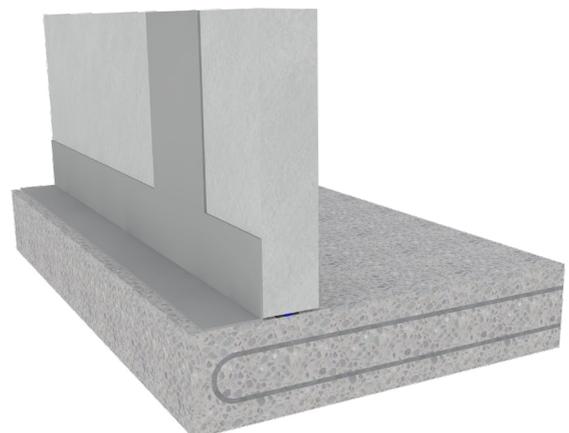
This data sheet is for the use of Newton FlexProof-X1 for the waterproofing of construction joints of retained concrete structures only. For other uses of the product, please see other data sheets as mentioned across the page.

SUITABLE SUBSTRATE

Static construction joints in poured concrete retained structures.



Non-static construction joints to precast concrete elements within retained structures.



WATERPROOFING PERFORMANCE

Newton FlexProof-X1 has tremendous waterproofing capabilities and these can be increased further with the inclusion of Newton FlexProof Scrim to reinforce the membrane at the construction joint. Please see table below for data on both non-reinforced and reinforced FlexProof-X1 when applied to construction joints.

Resistance to Water Pressure - 2.5mm membrane to positive pressure side of Static Construction Joint in poured concrete construction			
Joint of up to 0.25mm		Joint of up to 0.5mm	
Reinforced	Not reinforced	Reinforced	Not reinforced
2 bar (20m)	1 bar (10m)	1 bar (10m)	0.5 bar (5m)

Resistance to Water Pressure - 2.5mm membrane to positive pressure side of Non-Static Construction Joint in pre-formed concrete elements or where pre-formed elements meet poured concrete construction			
Joint of up to 0.5mm		Joint of up to 1.0mm	
Reinforced	Not reinforced	Reinforced	Not reinforced
1 bar (10m)	0.5 bar (5m)	0.5 bar (5m)	N/A

Resistance to Water Pressure - 2.5mm membrane to negative pressure side of Static Construction Joint in poured concrete construction - Primer Required			
Joint of up to 0.25mm		Joint of up to 0.5mm	
Reinforced	Not reinforced	Reinforced	Not reinforced
0.5 bar (5m)	N/A	0.3 bar (3m)	N/A

NOTES:

The data within the tables above is based upon data produced by an independent testing laboratory. The resulting test certificate confirms that FlexProof-X1 was applied in a band of 300mm over a static joint of 0.25mm and resisted water pressure over a 28 day testing period of 5 bar (50m) when reinforced with Newton FlexProof Scrim, and 2.5 bar (25m) of water pressure when not reinforced. In a separate test for resistance to high alkalinity (as found in new concrete) performed at the same time, a sample of reinforced FlexProof-X1 withstood 4 bar (40m) of water pressure for a period of 72 hours over a joint of 5mm. The information within the tables above has been subjected to a reduction from the test data so as to account for site conditions not being as exact as within a laboratory, and a healthy safety margin. This, together with site experience of use of the product over many years allows us to publish the data you see above. The test certificate referred to above is available upon request.

SPECIFICATION

John Newton & Company 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 <http://newton-membranes.co.uk/nbs-plus-live-feed>

Our web site has drawings available for download at <http://newton-membranes.co.uk/technical-drawings> and a selection are also available via FastrackCad at http://www.fastrackcad.com/CAD.ASP?Company_id=251

TRAINING & COMPETENCY OF USER

Newton FlexProof-X1 should be used 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.

TOOLS REQUIRED

- Trowel or squeegee.
- Small short pile roller.
- 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). A shuttered finish to vertical surfaces is suitable for Newton FlexProof-X1. Poured concrete rafts and foundations should 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.

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. 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.

- 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 FlexProof-X1.

PRIMING

Newton FlexProof-X1 does not normally require a primer. Internal application to static construction joints requires that surfaces be primed with **Newton LiquaBond mixed 1:1 with water**.

MIXING

Newton FlexProof-X1 does not require mixing. Simply pour from the foil bag and apply.

APPLICATION

- Open the bucket and remove foil bag. Cut corner off the bag of about 100mm. Pour product from the foil bag.
- Use trowel or squeegee to spread the product to a uniform thickness of 2.5mm (3.85kg/m²) to a band which is 150mm either side of the construction joint (300mm band in total).

NEWTON FLEXPROOF SCRIM

Reinforcement with Newton FlexProof Scrim will increase the waterproofing capabilities of Newton FlexProof-X1 as shown on the table on page two. It is also recommended to use 150mm of FlexProof Scrim on each surface of a change in direction from vertical to horizontal.

APPLICATION OF FLEXPROOF SCRIM

For reinforcement of joints and changes in direction, lay Newton FlexProof Scrim into the still tacky FlexProof-X1 and bed in with the edge of a trowel until covered by the product.

CURING

Curing is dependent on temperature and humidity. At 20°C & 80% R/H Newton FlexProof-X1 is touch dry in about 60 minutes, is capable of being wetted by light rain within 10 minutes, is completely weatherproof within 180 minutes and is fully cured to full waterproofing capability in about 72 hours.

COVERAGE

Single coat of 3.85kg/m² providing an overall membrane thickness of 2.5mm. The recommended band of 300mm (150mm each side of the construction joint) requires 1.2kg per linear metre.

POT LIFE

Newton FlexProof-X1 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 FlexProof-X1 and can be used to assist cleaning, especially where the product has partly or fully cured.

STORAGE

Store in dry conditions at temperatures between 10°C and 25°C. Do not expose to freezing conditions. Newton FlexProof-X1 has a 12 month shelf life when stored in original, unopened containers in accordance with manufacturers instructions.

PACKAGING

15kg & 26kg

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 - Scrim for the reinforcement of Newton FlexProof-X1.

Newton LiquaBond - Primer for preparing concrete prior to internal application (negative pressure) of Newton FlexProof-X1.

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

NEWTON SYSTEM 300 - WATERPROOFING OF CONCRETE STRUCTURES

Newton 301 AquaProof - Physical metal water-bar system for the immediate waterproofing of construction joints in concrete.

Newton 302 InjectionHose - Injection hose water-bar for the grouting and sealing of construction joints in concrete.

Newton 303 PolyProof - High grade hydrophilic water bar used to waterproof joints in concrete.

Newton 304 PolyProof-Inject - Hybrid of Injection Hose and PolyProof hydrophilic water bar providing a maintainable swelling water bar for maximum security to concrete construction joints.

Newton 306 SwellMastic - Hydrophilic mastic to adhere 303 PolyProof and 305 ActiveJoint to concrete joints. Can also be used to seal around protrusions through the concrete structure such as pipes and conduits.

Newton 307 PipeSeal - Preformed MDPE seal that creates a physical, flanged joint around pipes passing through the structure. 304 SwellMastic should be used to reinforce the joint.

Newton 308 Stopaq - Hydrophilic polymer used for the sealing of services through the structure even when leaking with considerable water pressure.

NEWTON WATERPROOFING SYSTEMS

Newton System 100 - Cementitious waterproofing and repair products.

Newton System 200 - Waterproofing of Decks and Flat Roofs.

Newton System 400 - External waterproofing of earth retained structures.

Newton System 500 - Internal cavity drain waterproofing of earth retained structures.