System 100

NEWTON 107F

Cementitious Flexible Waterproofing Membrane

NEWTON SYSTEM 100 - LIQUID WATERPROOFING MEMBRANES

Rev 3.0 - 10 April 2018

PRODUCT CODE - 107F

INTRODUCTION

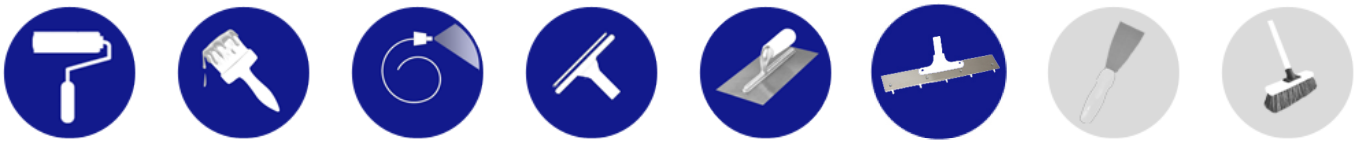
Newton 107F is a two-component, cementitious, polymer-rich coating for the waterproofing and protection of concrete and masonry. Capable of withstanding heads of water pressure up to 10 bar of positive pressure and up to 1.5 bar to the negative side of the structure, Newton 107F is ideally suited to the waterproofing of reservoirs, tunnels, water tanks, earth-retaining structures and covered or buried decks, and is especially capable where the structure has both masonry and concrete elements where differential movement is expected.

BDA Agrément
BAB-18-026-P-A-UK

When mixed, 107F is thixotropic to enable ease of application by brush or airless spray, providing an even finish with no sagging and excellent adhesion to prepared concrete and masonry substrates, even in vertical and overhead situations. Newton 107F is reinforced over static joints and at details and changes of direction with Newton 912-RT.

Newton 107F hydrates to form a durable, highly alkaline and permanently elastomeric coating which not only protects the concrete or other substrates from water penetration, but also accommodates slight movement in cracks and at correctly specified movement joints. 107F is also supported by BDA Agrément® BAB 18-026-P-A-UK and is accepted by the NHBC as a suitable waterproofing system for Type A Waterproofing to Grades 1, 2 and 3 - BS 8102:2009 and to covered decks.

APPLICATION

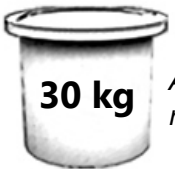


PROPERTIES

H - Hardness and Durability; E - Elasticity and Flexibility; V - Vapour Resistivity; C - Curing and Drying; W - Working Time; U - UV Stability



PACKAGING



A+B Components already measured, in two containers

COVERAGE



KEY BENEFITS

- Pre-packaged materials easily mixed on site
- Tough, flexible coating which maintains its elastomeric properties even when immersed
- Excellent adhesion to sound prepared concrete and masonry substrates, as well as steel
- Suitable for positive and negative waterproofing of earth-retaining structures as well as covered decks
- Dense matrix offers low permeability to water
- A 2 mm coat provides the equivalent to 135 mm of good quality concrete cover
- Can be applied to damp substrates in temperatures down to +5°C
- Water-based product. Non-toxic when cured



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Cementitious Flexible Waterproofing Membrane

TECHNICAL DATA

Features	Result	Units
Form – Two components	Part A liquid + Part B powder	
Colour	Grey	
Density/Specific gravity	1.6	
Pack size	30	kg
Yield per kg	0.63	Litres
Shelf life	12	Months
Pot life @ 20ºC & RH of 60%	45	Minutes
Finishing time	Within 10 minutes of placing	
Application rate – in one or two coats	3.2	kg/m^2
Substrate application temperature	+5 to +30	°C
Service temperature	-15 to +80	°C
Odour	Low - Characterised as polymeric	
VOC content - Part A only (none when cured)	1.76	g/L

Curing*	5°C	10°C	15°C	20°C	25°C	Units
Ready for next coat	8	7	6	5	3	Hours
To not be adulterated by rain	5	4	3	2.5	2	Hours
Ready for temporary traffic/protection boards	72	72	72	48	48	Hours
Ready for flood/hosepipe test	7	7	7	7	7	Days
Fully cured	28	28	28	28	28	Days

Cured Performance	Result	Units	Test Method
Colour	Grey		
Membrane thickness in one or two coats	2.0	mm	
Adhesion to concrete	≥ 0.8	MPa	BS EN 1542
Tensile strength - Ambient**	0.5	MPa	BS 6319-7:1994
Tensile strength - Immersed**	0.4	MPa	BS 6319-7:1994
Elongation - Ambient**	120 - 130	%	Manufacturer test
Elongation - Immersed**	70 - 80	MPa	Manufacturer test
Loading capability – 28 days	8 to 10	MPa	BS 4551
Hardness	84.0	Shore A	BS EN ISO 868:2003
Water Permeability Coefficient	5.37×10^{-16}	m/sec	DIN 1048 Part 1
Water vapour diffusion resistance – S_d value	1.55	m	BS EN ISO 7783-2
Water vapour diffusion resistance – μ value	775	μ	Calculation from S_d value
Water vapour diffusion resistance	7.75	MNs/g	Calculation from S_d value
Water resistance – Positive side	10.0	Bar	DIN 1048
Water resistance – Negative side	1.50	Bar	DIN 1048
Reaction to fire classification – Not determined	A2-s1,d0		BS EN 13501-1
UV Resistance - Stable but will discolour	50	Years	UNI EN ISO 11507:2007***
pH	12		

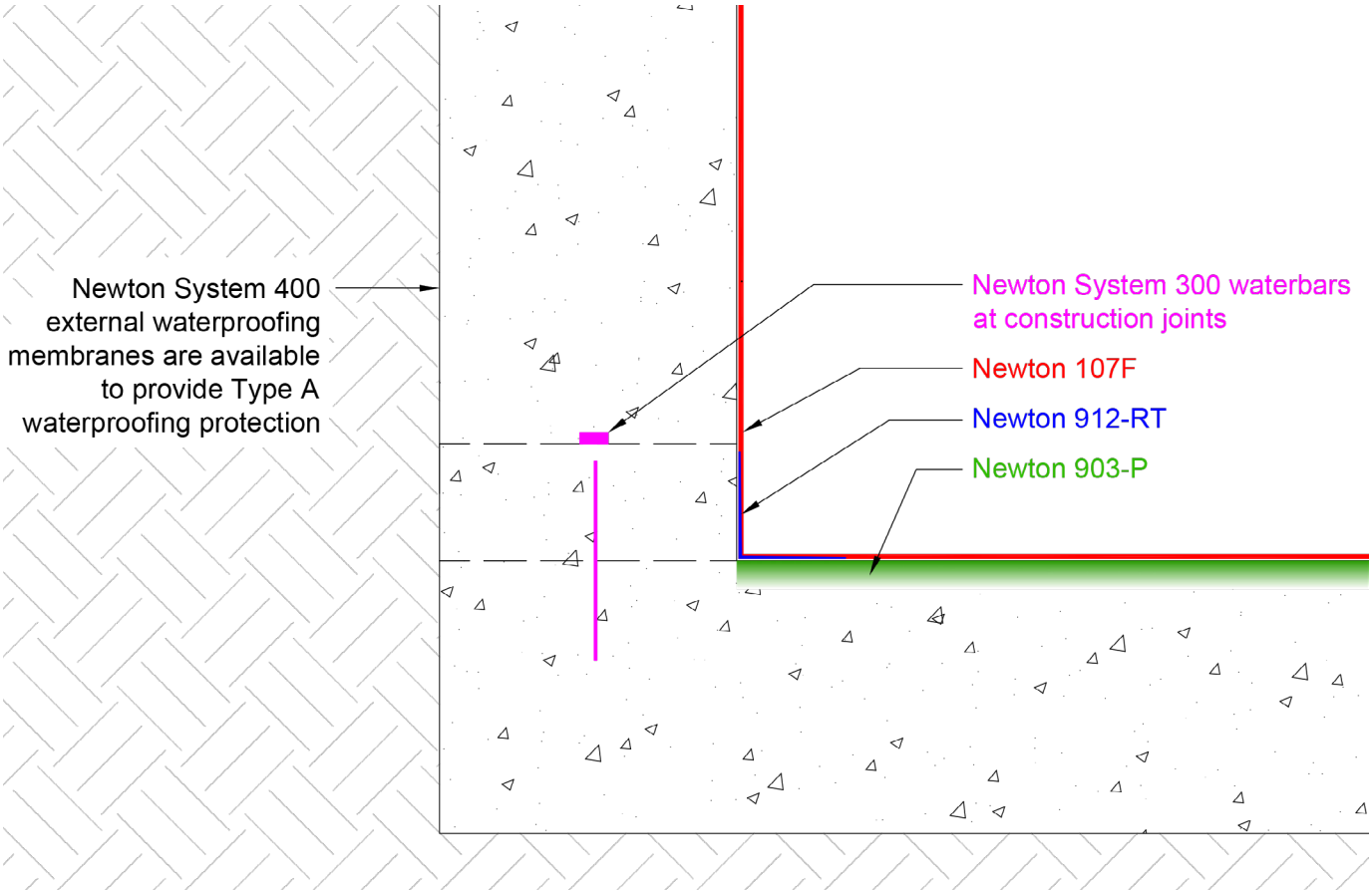
The above data, even if carried out according to regulated tests are indicative and they may change when specific site conditions vary. *Figures are influenced by humidity also and so are indicative. **2mm film cured for 28 days. ***UNI EN ISO 11507:2007 is an accelerated ageing test. The result of 1000 hours translates to 50-years.

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NEWTON 107F

Cementitious Flexible Waterproofing Membrane

TYPICAL DETAIL



TYPICAL APPLICATIONS

Waterproofing of:

- Podium decks, flat roofs, terraces and balconies
- Water-retaining structures such as water tanks and reservoirs
- Earth-retaining foundation walls to both the positive and negative side
- Internal concrete surfaces of walls and rafts or slabs to earth-retained structures such as habitable basements, car parks, plant rooms and lift-pits

ACCREDITATIONS & APPROVALS

Newton 107F is independently tested by BSI to confirm performance data to the requirements of EN 1504-2:2004 in accordance with the EU Construction Products Regulations. Please see CE Label on page 7, or the product Declaration of Performance for further information.

Newton 107F is supported by KIWA BDA Agrément and is accepted by the NHBC as a suitable waterproofing system for Type A Waterproofing to Grades 1, 2 & 3 - BS 8102:2009, and for the waterproofing of covered decks, both as standalone product or in conjunction with other approved products that form the overall waterproofing specification.

SUITABLE SUBSTRATES

Correctly prepared substrates of:

- Concrete of at least 20kN
- Steel*
- Masonry
- Screed

SUITABLE SURFACES

Waterproofing of:

- Walls - Positive pressure and Negative pressure
- Slab/raft - Negative pressure
- Soffit - Negative pressure
- Deck - Positive pressure

METHOD OF APPLICATION

- Squeegee
- Roller
- Airless Spray
- Pin Leveller
- Brush
- Trowel

*Bond to abraded steel is very good but not tested and so is suitable only for termination detailing

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SPECIALIST TOOLS REQUIRED

- Spiked shoes and spiked roller to ensure captured air is removed and to improve the surface finish
- To spray the product, an airless machine is required

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 in Technical Drawings. A selection are also available via FastrackCAD, as well as a range of BIM objects on the NBS National BIM Library

TRAINING AND COMPETENCY OF THE USER

Newton 107F should only 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 BS 8102:2009.

It is recommended that Newton 107F and its ancillary products be installed by contractors trained by Newton Waterproofing Systems in the correct use and specification of the product.

PROTECTION OF THE MEMBRANE

The membrane is not wear resistent and requires protection from wear and weathering.

Protection methods include:

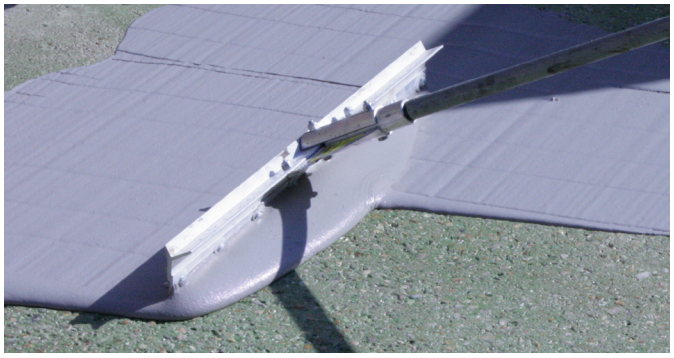
- Decks - Newton drainage membrane, Newton 408 DeckDrain, with paving or Intensive Green Roof over
- Decks - Newton 420 Reservoir drainage and water storage membrane with Extensive Green Roof over
- Decks - Timber decking
- Decks - Paving on pedestals
- Decks & internal floors - Coloured sands or grit 100% broadcasted to the still tacky final coat to provide an abrasion and slip resistant finish.
- Decks - Ceramic tiling adhered directly to 100% broadcast with sand surface. Waterproof grout and waterproof adhesives to be used.
- Internal floors - Ceramic tiling adhered to a de-coupling membrane
- Internal Floors - Screed or other floor coverings
- External walls - Newton 410 GeoDrain, Newton Fibran XPS 500-C insulation or protection board

LIFE EXPECTANCY

When specified, installed and protected in accordance with the Data Sheet, fully and permanently isolated from UV light and physical damage or wearing, and only to those substrates confirmed within, Newton 107F has a service life that can be equal to the design life of the structure.

Newton 107F is guaranteed to resist weathering for up to 10-years. The membrane is not UV colour stable and will slightly fade in colour over time, and it may take a few months for the colour to be consistent. Over time discolouration due to weathering may take place, but the membrane will be serviceable.

The membrane is not hard wearing and should be protected against wear.





PACKAGING

The product consists of two parts, A and B, both of which are measured and ready to be mixed:

- Part A (Container of liquid) 10 kg
- Part B (Bag of powder) 20 kg

APPLICATION RATE

The membrane is applied to a total thickness of 2.0 mm, which requires an application rate of 3.2 kg/m^2.

Walls and soffits
Application is by two coats, each of 1.6 kg/m^2.

Horizontal surfaces
Application is by two coats, each of 1.6 kg/m^2 or by a single coat of 3.2 kg/m^2.

At a thickness of 2.0 mm, a 30kg composite pack covers a total surface area of 9.4m^2.

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ANCILLARY PRODUCTS

- Newton 903-P - Purchase Code 903-P. Primer for concrete
- Newton 905-CM - Purchase Code 905-CM. Curing membrane to prevent accelerated drying during hot or very windy conditions
- Newton 912-RT - Purchase Code 912-RT. Reinforcement Tape for static joints construction joints

CONSTRUCTION

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

CONSTRUCTION - NEW CONCRETE

New concrete to earth retaining structures should be designed by a Structural Engineer to EN 1992 (Formerly BS 8110). A shuttered finish to vertical surfaces is suitable for Newton 107F.

Horizontal concrete surfaces should have a surface finish to at least Class of finish U3 and preferably to class U4 or U5 as documented in 'General Specification for Civil Engineering Works' section 14: 'Formwork and Finishes to Concrete', namely a 'Uniform, dense and smooth surface'. Float marks should be avoided as these will impact on the cost of correct surface preparation.

Newton 107F can be applied to new concrete providing that:

- The concrete is at least 20 N strong
- The concrete can be prepared using conventional mechanical preparation methods to remove laitance to floors and release agents to walls

CONSTRUCTION - MORTAR

Walls should be designed by a Structural Engineer to withstand the load of the retained earth as well as the expected water pressure as defined by BS 8102:2009. The mortar joints should be pointed flush to the surface of the wall.

SURFACE PREPARATION - GENERAL

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.

Substrate damage, deterioration, cracks, voids, and holes should be repaired and filled prior to installation of the waterproof membrane with Newton 203-RM repair mortar. Deep or structural cracks should be inspected to confirm if they are live or dormant. Suitable repair by qualified personnel is recommended.

SURFACE PREPARATION - CONCRETE WALLS

Jet washing with minimum pressure of 2500 PSI should be used to remove release agents and surface contamination to concrete walls. Adding mild detergents to the jet wash water will improve effectiveness.

Fine surface cracks and blow-holes should be filled with sand/cement using a bag rubbing technique.

Tie-Bolt holes should be filled with Newton 203-RM.

SURFACE PREPARATION - MORTAR WALLS

Joints should be flush pointed. If they are not, re-point or apply a smoothing coat of sand/cement render with Newton 908 LiquaBond mixed into the gauging water at 1:2.

Porous block walls should be filled by bag-rubbing with sand/cement.

Existing walls of block or brick will require wall surface preparation such as grit blasting or scabbling to ensure all surface containments are removed and that a good 'key' is achieved.

Remove snots.

SURFACE PREPARATION - CONCRETE FLOORS

In all cases, concrete floors should be ground or sand blasted to remove laitance. Vacuum clean after.

If the concrete floor needs to be levelled, please speak to the Newton Waterproofing Technical Department who will advise on the correct levelling product.

Large holes or indentations should be filled Newton 203-RM.

SURFACE PREPARATION - METAL

Clean to remove surface contaminants and abrade to a slightly textured finish.

JOINTS & CHANGES OF DIRECTION

Reinforce static joints with Newton 912-RT.

Over shrinkage joints, use 25mm wide masking tape to create delamination.

With movement joints, lap the 107F into the joint and then use our standard Newton 106 FlexProof movement joint detail. Please speak to our Technical Department for assistance on the correct specification to joints.

PRIMING

Walls and soffits - Prior to slurry tanking, porous substrates should be sealed with sand/cement using a bag rubbing technique.

Internal slabs and rafts - Porous substrates should be sealed with Newton 903-P.

External decks - Should be primed with Newton 903-P.

Please read the 903-P data sheet before commencement of application.

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MIXING

Newton Waterproofing supply the full range of Collomix Mixing Equipment that includes Hand Mixers, Stirrers, Mixing Stands, Buckets, Transport Carts and the Mixer Clean mixing bucket. Newton 107F can be mixed with the DLX (preferred) and KR stirrers, matched to the Xo 1 or Xo 4 Hand Mixers which are suitable for quantities of up to 65 litres. For larger quantities the MKD dual action stirrer is matched to the Xo 55 duo Hand-Mixer.

- Shake Part A bottle thoroughly and pour into clean mixing vessel
- Add part B (powder) slowly whilst mixing slowly
- Mix for 5 minutes until smooth, entrapping as little air as possible
- Continuously scrape sides to prevent lumps forming and to ensure all of part A is mixed with all of part B
- Mix for a minimum of 5 minutes and use without delay



APPLICATION

The mixed slurry can be applied by Brush, Squeegee, Roller, Trowel or Pin Leveller. Ensure that air is not entrapped into the surface of horizontal applications by using a spiked roller as soon as the product is placed.

With two coat applications, the second coat can be applied when the first coat is still 'green' and slightly tacky and up to five days after the first coat has been applied. After five days, the first coat will need to be washed to remove dust. In addition, a primer of Newton 908 LiquaBond mixed 1:1 with water can be applied to enhance adhesion of the second coat to the first.

SPRAYING SPECIFICATION

Newton 107F can be sprayed with an airless spray machine. For information on the machine and configuration, please contact our Training Department.

CURING

For curing/drying times please see Technical Data on page 2. Newton 107F is a cement-based product and so requires curing. Accelerated drying must be avoided.

If the conditions are hot, sunny and/or very windy the finished membrane must be protected from accelerated drying with the application of Newton 905-CM, a simple to apply liquid curing membrane.

In floor and deck applications, coloured sands or grit can be cast liberally onto the surface to provide effective curing, whilst also creating an abrasion and slip-resistant finish.

Curing must commence within 10-15 minutes of the completed application of the coating.

POT LIFE & FURTHER USE

Newton 107F is a two-part product and a chemical curing reaction starts as soon as the two parts are mixed. Pot life is 45 minutes at 20°C. Product must be used before it starts to go off/over thicken.

CLEANING

Thoroughly clean all tools and equipment with water immediately after use.

LIMITATIONS

- Do not apply prior to rain - please see information within the curing table on page 2
- Do not apply at temperatures lower than +5°C or higher than +30°C
- Always use the correct preparation and priming of the support substrate as directed above

COLOUR

Grey.

STORAGE

Store in dry conditions at temperatures between +5°C and +25°C with containers fully sealed. Do not expose to freezing conditions.

If these conditions are maintained and the product packaging is unopened, then a shelf life of up to 12 months can be expected.

Please note: The sacks are splash proof and not waterproof. Please ensure that the product is moved to dry site storage as soon as it is delivered.

HEALTH & SAFETY

Use appropriate PPE for the environment the system is installed within. Use products only as stated within this Data Sheet and the MSDS.

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CE 15	JN NEWTON WATERPROOFING	Newton Waterproofing Systems Newton House 17-20 Sovereign Way Tonbridge Kent TN9 1RH	107F EN 1504-2:2004 0086 / 0833 Surface Protection System for Concrete

Essential Characteristics	Declared Performance	Test Standard	Harmonised Technical Standard
Permeability to CO^2	Equivalent to 135mm of concrete	BS EN 1062-6	BS EN 1504-2
Permeability to water vapour	SD <5m Class I Permeable to water vapour	BS EN ISO 7783-2	
Capillary absorption	<0.1kgm^{-2}h$^{-0.5}$ Class III	BS EN 1062-3	
Adhesive bond	≥ 0.8 MPa	BS EN 1542	
Thermal compatibility	> 0.8 MPa	BS EN 13687-1	
Dangerous substances	Complies	Clause 5.4	
Reaction to fire	Euroclass A2-s1, d0	BS EN 13501-1	
Cracking bridging - Static	> 2500µm - Class A5	BS EN 1062-7	
Cracking bridging - Dynamic	200-500 µm - Class 4.1	BS EN 1062-7	

Newton Waterproofing Systems reserve the right to update product literature at any time. Please always refer to our website for the latest versions.

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