System 100

NEWTON 106 FLEXPROOF

Flexible Polymer Waterproofing Compound

NEWTON WATERPROOFING

Rev 2.3 - 29 Aug 2019

PRODUCT CODE - 106

NEWTON SYSTEM 100 - LIQUID WATERPROOFING MEMBRANES

PRODUCT OVERVIEW

Newton 106 FlexProof is a highly advanced, single component, waterproofing compound for the waterproofing of joints that is supplied in two variants: Newton 106 FlexProof-X1 is a highly viscous, thixotropic paste that is suitable for the waterproofing of construction and vertical movement joints, whilst Newton 106 FlexProof-NV has a lower viscosity and so is pourable and better suited where the application is to horizontal movement joints. Both variants form an elastomeric polymer that is rainproof in minutes and capable of handling severe building movements and deformations.

With a superb bond to most building materials and with very high levels of flexibility, Newton 106 FlexProof is capable of resisting both negative side and positive side water-pressure at construction joints, even where movement is expected. The product has the ability to remain watertight against positive pressure even when resisting 20% expansion and compression and 10% shear, and so is especially useful where waterproofing is required within movement joints and at the interfaces of differing materials.

Backed by extensive MFPA test data, Newton 106 FlexProof is also a constituent part of the Newton HydroBond System, which is supported by BDA Agrément® BAB 17-031/04/A.

APPLICATION

PROPERTIES

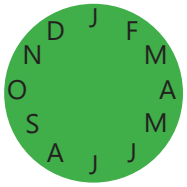
H - Hardness and Durability; E - Elasticity and Flexibility; V - Vapour Permeability; C - Curing and Drying; W - Working Time; U - UV Stability

PACKAGING

Single component

COVERAGE

OUTDOOR SEASON



KEY BENEFITS

- Single component with no mixing or stirring
- Very flexible
- Excellent resistance to the high alkalinity of concrete
- Rain tight skin forms within a few minutes
- Resistant to temperature variations, maintaining its characteristics between -40° C and +90° C
- Resistant to both positive side and negative side water pressure

TYPICAL APPLICATIONS

- Waterproofing of construction and movement joints
- Flexible sealing mastic
- Waterproofing of joints between substrates subject to differential movement
- Detailing to Newton HydroBond System

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TECHNICAL DATA - X1 & NV VARIANTS

Features	Result		Units
	X1	NV	
Form (paste)	Medium viscosity	Low viscosity	
Colour	Grey		
Density / Specific gravity	1.54	1.44	
Packaging - foil bag within bucket	15	7.5	kg
Packaging - cartridge	290	N/A	ml
Shelf life	12		Months
Pot life	6		Months
Application rate - over joints	3.85	N/A	kg/m²
Application rate - not to joints	3.0		kg/m²
Application rate - movement joints	Depth of 50% of the joint width		
Application method	Trowel/putty knife. Brush for detailing		
Minimum application temperature - substrate*	+1 (and rising)		ºC
Maximum application temperature - air	+35		ºC
Service temperature	-40 to +90		ºC
Odour	Slight polymer		
VOC	None		

Curing*	5°C	10°C	15°C	20°C	25°C	Units
To not be adulterated by light rain	15	12	10	10	5	Minutes
To not be adulterated by heavy rain	20	17	15	15	10	Minutes
Ready for protection boards	30	27	25	25	20	Minutes
Fully cured	5	4	4	3	3	Days

Cured Performance	Result		Units	Test Method
Colour	Grey			
Membrane thickness - over joints	2.5	N/A	mm	
Membrane thickness - not over joints	2.0		mm	
Adhesion to concrete	>450		KPa	EOTA TR-003
Tensile strength	1.25	1.60	N/mm²	BS EN 13813:2002
Elasticity when breaking - 2 mm film	250	450	%	DIN EN 12311-2
Resistance to dilute acid/alkaline	Excellent			DIN EN 1928
Shore Hardness - A	40			
Watertightness	See data table on page 4			DIN EN 1928
UV Resistance**	10		Years	EN ISO 11431:2002
Reaction to fire classification - Euroclass	E			DIN EN 13501-1

The above data, even if carried out according to regulated tests are indicative and may change when specific site conditions vary. *Figures are for 2.5 mm coating and are influenced by humidity and are therefore, indicative. ** EN ISO 11431:2002 specifies a method for the determination of the adhesion/cohesion properties of sealants after cyclic exposure to heat and artificial light followed by a period of exposure to water at a defined temperature. The 10-year figure is an extrapolation of the results of these tests. The product may weather to with a slight yellow tint, but the product itself will not be affected.

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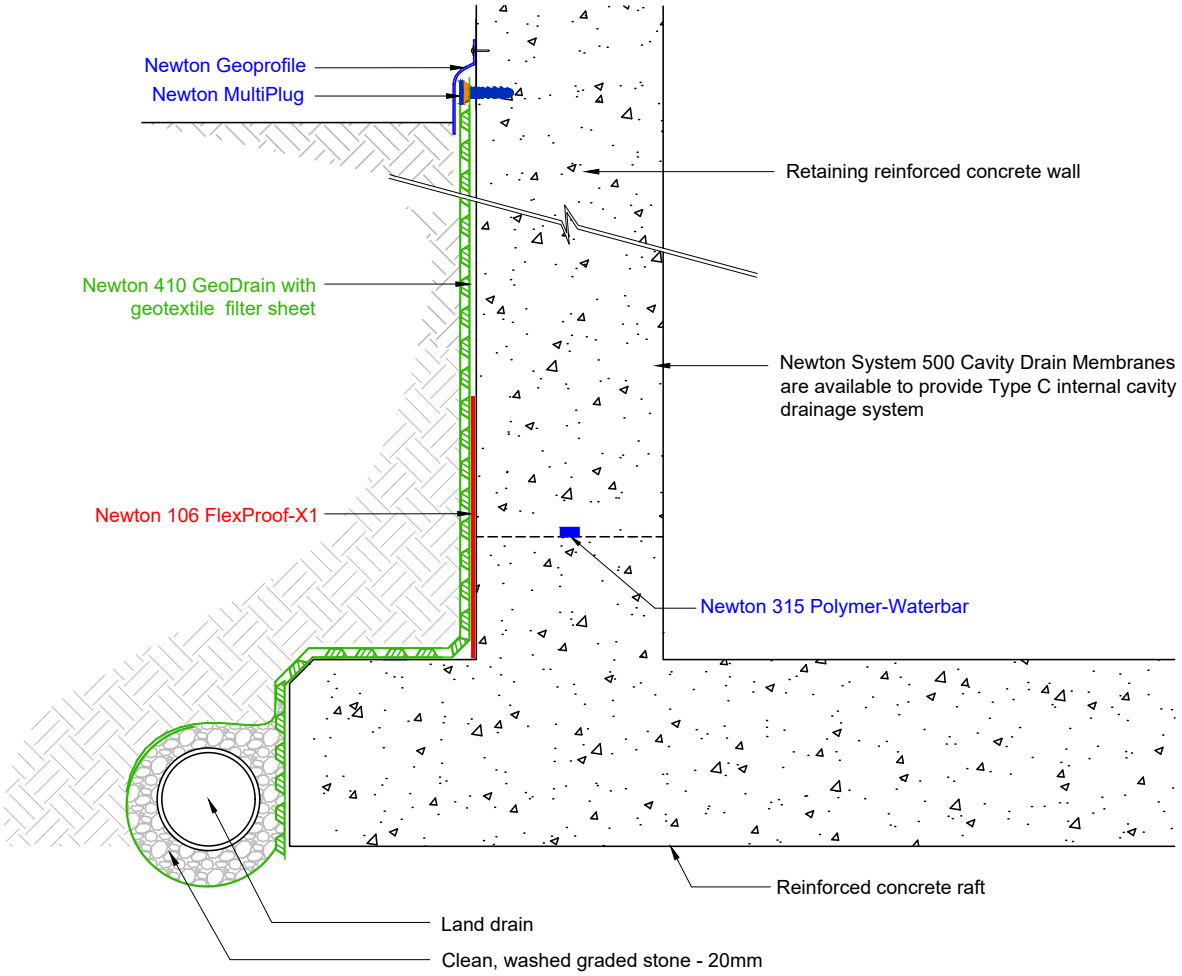
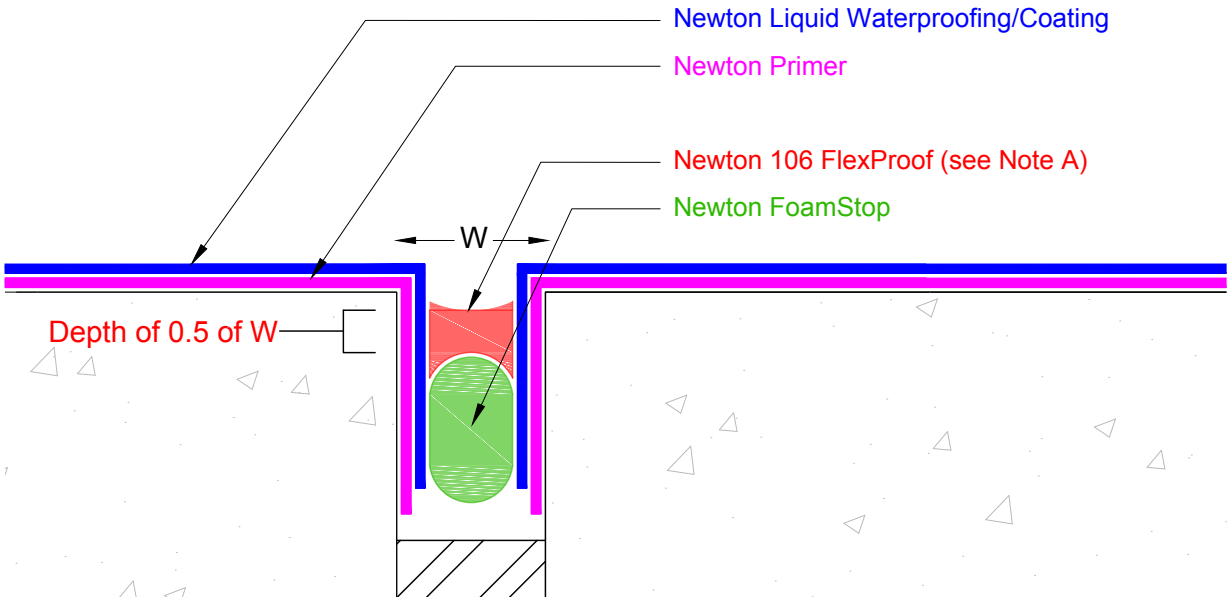
TYPICAL DETAILS

Detail 1.
Newton 106 FlexProof-X1 waterproofing kicker joint to RC structure



Detail 2.
Newton 106 FlexProof waterproofing a movement joint



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NEWTON 106 FLEXPROOF

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ACCREDITATIONS & APPROVALS

Newton 106 FlexProof is independently tested by MFPA to confirm performance data to the requirements of various EU standards. Test certificates are available on request.

Newton 106 FlexProof is also a constituent part of the Newton HydroBond System, which is supported by BDA Agrément® BAB 17-031/04/A.

There are no EU Harmonised Standards for the product and so there is no DoP or CE.

VARIANTS

Newton 106 FlexProof is supplied in two variants of differing viscosities:

- **FlexProof-X1** is a medium-viscosity, thixotropic paste that is suitable for application to vertical surfaces and within vertical joints
- **FlexProof-NV** is a low viscosity, pourable material that is more suited to application to horizontal surfaces and movement joints

WATERPROOFING PERFORMANCE - JOINTS

Newton 106 FlexProof 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.

2.5 mm membrane to positive pressure side of static RC construction joint			
Joint of up to 0.25 mm		Joint of up to 0.5 mm	
Reinforced	Not reinforced	Reinforced	Not reinforced
2 bar (20 m)	1 bar (10 m)	1 bar (10 m)	0.5 bar (5 m)

2.5 mm membrane to positive pressure side of non-static joint between pre-formed concrete elements or where pre-formed elements meet placed RC construction			
Joint of up to 0.5 mm		Joint of up to 1.0 mm	
Reinforced	Not reinforced	Reinforced	Not reinforced
1 bar (10 m)	0.5 bar (5 m)	0.5 bar (5 m)	N/A

Resistance to Water Pressure - 2.5 mm membrane to negative pressure side of Static Construction Joint in poured concrete construction - Newton 916 FlexProof Primer required			
Joint of up to 0.25 mm		Joint of up to 0.5 mm	
Reinforced	Not reinforced	Reinforced	Not reinforced
0.5 bar (5 m)	N/A	0.3 bar (3 m)	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.

SUITABLE SUBSTRATES

Correctly prepared substrates of:

- Concrete of at least 20 kN
- Concrete block walls with flush pointing
- Screed
- Metal
- Plastics
- Timber
- Glass

SUITABLE SURFACES

Newton 106 FlexProof is suitable for the sealing against positive side water pressure to a large number of construction details and can resist both negative side and positive side water pressure to correctly specified, placed and prepared concrete.

METHOD OF APPLICATION

- Metal trowel
- Metal putty knife
- Brush - for detailing
- Poured directly from foil bag - NV variant only
- Cartridge gun - X1 variant only

SPECIALIST TOOLS REQUIRED

Newton 106 FlexProof does not require specialist tools.

ANCILLARY PRODUCTS

- Newton 916 FlexProof Primer - For the sealing of, and to take the suction out of dry porous surfaces
- Newton FlexProof Scrim - Reinforcement scrim that improves resistance to water pressure over joints
- Newton FoamStop - Foam backing rod
- Newton 305 ActiveJoint - Flexible EDPM joint protection profile

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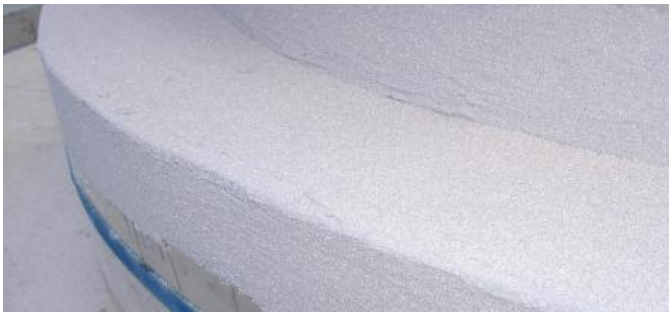
LIFE EXPECTANCY

When fully covered and protected Newton 106 FlexProof will provide, under normal conditions, a durable waterproof coating for the life of the building to which it is installed.

Where the product is exposed to UV and weathering the life expectancy should be at least 10-years, but because other factors in addition to UV will have a bearing on the life of the joint, the joint should be inspected during its life to ensure it is capable of performing as intended and a maintenance agreement should be agreed with the specialist installation contractor to include inspection of the joint during its service life. If the joint is found to be defective it should be replaced.

Where the product is subject to mechanical wear, such as exposed movement joints, the maintenance program should reflect the risk of potential damage and repairs should be carried out as necessary.

Although the finished product is resilient, where the movement joint is subject to UV, weathering or mechanical wear agents, it is impossible to confirm a life expectancy and consideration should be given to protecting the joint with Newton 305 ActiveJoint.



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 a wide choice of downloadable Technical Drawings, and a large selection are also available either via FastrackCAD, or as BIM objects on the National BIM Library and/or BIMobject.com

TRAINING AND COMPETENCY OF THE USER

Newton 106 FlexProof should be installed by those with an understanding of the requirement to waterproof the building element to which the product is applied to. In addition they must have 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 in order to achieve the required habitable grade defined by BS 8102:2009.

APPLICATION RATE

Across Joints
3.85 kg/m^2 to a uniform thickness of 2.5 mm.

To flat surfaces
3.0 kg/m^2 to a uniform thickness of 2.0 mm.

Within Movement Joints
Depth of application to 50% of the joint width. Please see table below

MOVEMENT JOINTS - NEWTON FOAMSTOP

Newton FoamStop is a compressible foam rod that is used to ensure that the Newton 106 FlexProof is applied at the correct depth within the joint.

The diameter of FoamStop used should be approximately 150% of the width of the joint.

Joint Size (mm)	FoamStop Diameter (mm)	Depth of FoamStop into joint (mm)	Consumption per linear metre		
			FlexProof		Primer
			litres	ml	ml
5	10	2.5	0.0154	15.4	1.5
6	10	3	0.0221	22.1	1.8
7	10	3.5	0.0301	30.1	2.1
8	15	4	0.0394	39.4	2.4
9	15	4.5	0.0498	49.8	2.7
10	15	5	0.0615	61.5	3.0
11	15	5.5	0.0744	74.4	3.3
12	20	6	0.0886	88.6	3.6
13	20	6.5	0.1039	103.9	3.9
14	20	7	0.1205	120.5	4.2
15	20	7.5	0.1384	138.4	4.5
16	25	8	0.1574	157.4	4.8
17	25	8.5	0.1777	177.7	5.1
18	25	9	0.1993	199.3	5.4
19	25	9.5	0.2220	222.0	5.7
20	30	10	0.2460	246.0	6.0
21	30	10.5	0.2712	271.2	6.3
22	30	11	0.2977	297.7	6.6
23	30	11.5	0.3253	325.3	6.9
24	30	12	0.3542	354.2	7.2
25	40	12.5	0.3844	384.4	7.5
26	40	13	0.4157	415.7	7.8
27	40	13.5	0.4483	448.3	8.1
28	40	14	0.4822	482.2	8.4
29	40	14.5	0.5172	517.2	8.7
30	40	15	0.5535	553.5	9.0
31	50	15.5	0.5910	591.0	9.3
32	50	16	0.6298	629.8	9.6
33	50	16.5	0.6697	669.7	9.9
34	50	17	0.7109	710.9	10.2
35	50	17.5	0.7534	753.4	10.5
36	50	18	0.7970	797.0	10.8
37	50	18.5	0.8419	841.9	11.1
38	50	19	0.8881	888.1	11.4
39	50	19.5	0.9354	935.4	11.7
40	75	20	0.9840	984.0	12.0
41	75	20.5	1.0338	1033.8	12.3
42	75	21	1.0849	1084.9	12.6
43	75	2.5	1.1371	1137.1	12.9
44	75	22	1.1906	1190.6	13.2
45	75	22.5	1.2454	1245.4	13.5
46	75	23	1.3013	1301.3	13.8
47	75	23.5	1.3585	1358.5	14.1
48	75	24	1.4170	1417.0	14.4
49	75	24.5	1.4766	1476.6	14.7
50	75	25	1.5375	1537.5	15.0

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CONSTRUCTION

Concrete should be constructed to BS EN 1991-3 with the intention of providing a Type B form of waterproofing as described within BS 8102:2009.

The application of Newton 106 FlexProof to the joints will enhance the waterproofing design by sealing the only places that the water is able to pass through well placed and correctly designed concrete: at the joints between the concrete sections.

Where movement joints are to be trafficked, they should be constructed with chamfered edges to prevent leading edge damage.

The application of Newton 106 FlexProof within the movement joint will ensure the joint is watertight against positive water pressure with movement of up to 20% in compression and expansion and 10% shear.

SURFACE PREPARATION - CONCRETE WALLS

- The surface must be clean and free from dust, laitance, release agents, oils, paints or other forms of contamination. Jet washing with industrial machine and with a mild detergent (which later must be fully removed) is the minimum requirement and if contaminants are still present, more aggressive preparation, such as grit blasting, will be required
- If the product is to lap to horizontal surfaces, the laitance will need to be removed by mechanical grinding or grit-blasting
- Holes, cracks, voids and honeycombing should be filled and made good with Newton 203-RM
- Pin holes and non-structural cracks that are between 0.5 mm and 2 mm wide and block walls should be filled with sand/cement using a bag rubbing technique

PRIMING

Priming with Newton 916 FlexProof Primer is only required:

- Where the surface is open or very porous
- Where the concrete has been ground to mechanically remove laitance
- Where the product is to resist negative water pressure
- Where the product is applied onto or between Newton 107F

Priming with Newton 916 FlexProof Primer is strongly recommended where:

- The product is used within movement joints
- If the concrete is slightly dusting, priming will stabilise the substrate
- If, after grinding back, the substrate is still slightly contaminated, priming will prevent discolouration passing through the Newton 106 FlexProof

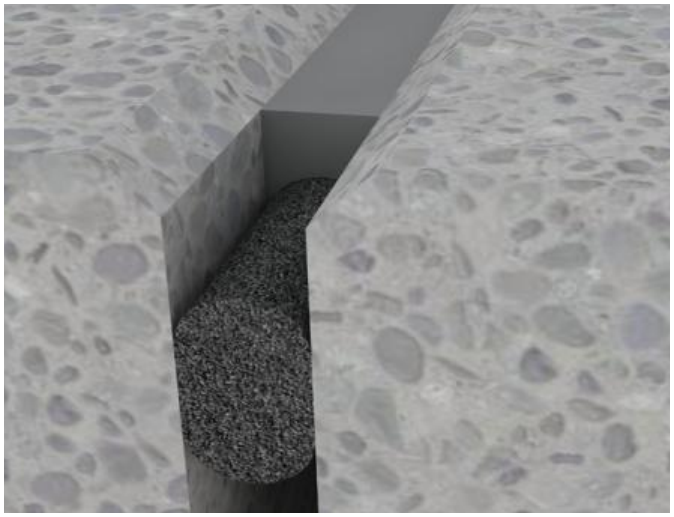
MIXING & STIRRING

Newton 106 FlexProof does not require mixing or stirring.

APPLICATION - CONSTRUCTION JOINTS

Newton 106 FlexProof-X1 is applied over joints in bands of 300 mm wide with the joint being central to the application.

- Mark out the area that the product will be applied to with tape. This defines the area and ensures neatness of application
- Open the bucket and remove the 15 kg foil bag. Cut a 100 mm corner from the bag. Pour the product from the foil bag
- Use trowel to spread the product to a uniform thickness of 2.5 mm (3.85kg/m2) to a band which is 150 mm either side of the construction joint (300 mm band in total)
- When the product is cured, remove the tape edges
- Where the application is to the negative pressure side, or to reinforce any joint or at changes in direction, bed Newton FlexProof Scrim into the still tacky FlexProof-X1 and tamp in with the edge of a trowel until covered by the product
- Trowel to a finish



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APPLICATION - MOVEMENT JOINTS

Carefully insert the correctly sized Newton FoamStop into the joint using a blunt chisel and a hammer.

Do not damage the Newton FoamStop. Ends of the FoamStop should be butted - no adhesive joint of the butted ends is required. Mitre at changes in direction.

Apply tape to both sides of the joint. This defines the area and ensures neatness of application.

Newton FlexProof can be either poured directly from the foil bag packaging or gunned from a cartridge with a mastic gun.

The method of application is dependent on the size of the movement joint. For narrower joints, use Newton 106 FlexProof-X1 cartridges. Alternatively, decant the product from the foil bag into an empty mastic gun cartridge and gun the product into the joint.

- Foil bag - Joints of 18-72 mm
- Cartridges - Joints of 5-18 mm

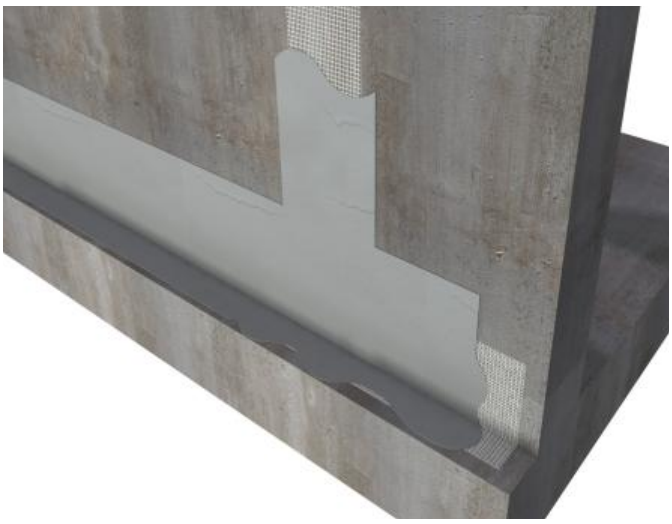
Open the bucket and remove foil bag. Cut corner off the bag to a size that is suitable for the width of the joint.

Pour sufficient product from the foil bag directly into the joint above the Newton FoamStop to the correct depth.

A soapy wet knife can be used to smooth if required.

APPLICATION - DETAILING - HYDROBOND

Please refer to Newton 403 HydroBond Installation Manuals.



POT LIFE & FURTHER USE

Newton 106 FlexProof is a single-component product with no chemical curing reaction, therefore the product has no working pot life.

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.

CURING

Curing is dependent on temperature and humidity. Full cure is dependent on depth. At 20º C, allow for a cure rate of 24 hours per 1 mm of product depth.

CLEANING

Product that has not cured can be simply wiped off tools with a rag or cloth. Xylene breaks down Newton 106 FlexProof and can be used to assist cleaning, especially where the product has partly or fully cured.

PROTECTION OF THE MEMBRANE

When used to waterproof retained walls, Newton 106 FlexProof-X1 must be protected prior to back-fill. Suitable protection includes:

- Protection board
- Newton Fibran XPS 500-C insulation
- Newton 410 GeoDrain

When used as a general waterproofing sealant, mastic or detailing membrane, life expectancy will be greatly improved by protecting the membrane from direct UV exposure.

The simplest, most cost effective and aesthetically pleasing method is to broadcast sand or grit onto the still tacky product. Cast the sand or grit until no more sand or grit can be taken by the membrane. Leave to fully dry before lightly brushing off any excess.

Sands and grits can be purchased in a wide variety of colours, sizes and grades.

Movement joints can be protected with Newton 305 ActiveJoint. If this method is used, both the Newton FoamStop and the Newton 106 FlexProof will need to be placed further into the joint to accommodate the size of the Newton 305 ActiveJoint.

PACKAGING

Newton 106 FlexProof-X1 - 15 kg - Purchase code 106

Newton 106 FlexProof-X1 - 290 ml - Purchase code FP2

Newton 106 FlexProof-NV - 7.5 kg - Purchase FP4

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LIMITATIONS

- Do not apply at temperatures lower than +1°C or higher than +35°C
- Do not apply to wet substrate
- Do not apply over frozen substrate or over ice
- Not suitable as a vehicle or pedestrian traffic surface
- When applied over joints, do not apply too much product. Apply to a maximum thickness of 2.5 mm

COLOUR

Grey

CE LABEL

Newton 106 FlexProof does not fall under any of the EU Harmonised Standards and so the product does not require a DoP and there is no CE label.

STORAGE

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

Newton 106 FlexProof 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. The Safety Data Sheet (MSDS) should be carefully read prior to application of the material.

The MSDS is available upon request from Newton Waterproofing or online via our website. Please see contact details below.

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

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