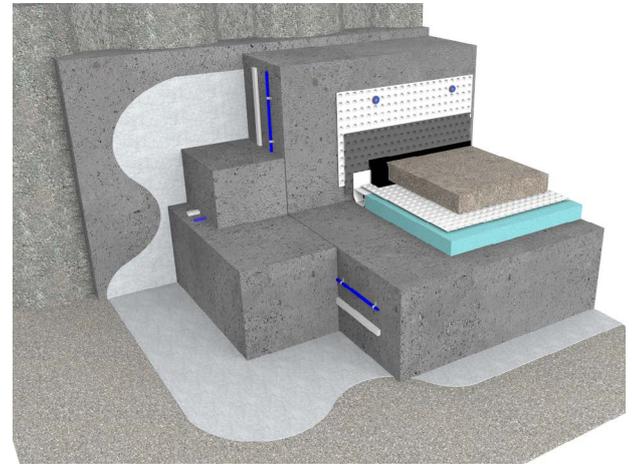


# Type A, B & C Waterproofing

## JN-05 SPECIFICATION SHEET

### Complete Waterproofing RC Basement within Contig Piles

Rev 3.0 - 02 July 2021



#### BUILD

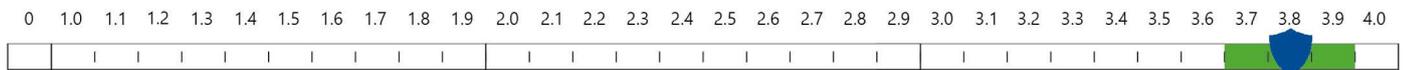
##### WALL CONSTRUCTION:

Reinforced Concrete

##### FLOOR CONSTRUCTION:

Reinforced Concrete (RC) Raft

#### NWI SCORE



This specification employs 3 forms of waterproofing (Type A - Barrier Protection) and (Type B - Integral Protection) to limit ground water ingressing behind the (Type C - Drained Protection) to ensure that the desired internal environment is achieved. The effectiveness of the waterproofing is dependent on the Type A & B systems being effective, especially at the construction joints.



#### NEWTON WATERPROOFING INDEX

The Newton Waterproofing Index (NWI) is a unique scoring system that accurately assesses the level of risk and potential success of specific waterproofing specifications. The NWI score is awarded by a panel of experienced waterproofing design specialists and reflects the chances of success of that specification. The scoring system works in conjunction with the British Standard for waterproofing, which defines the three types of internal environments as Grades 1, 2 and 3.

#### NOTES

The detailing of other building elements and termination details are available within the Newton Waterproofing specification library.

#### A-RATED INSURANCE

Tailor made insurance policies available depending on the specialist contractor and specification.

#### SPECIFICATION

##### TYPE B ANCILLARIES

Install [Newton HydroTank System](#) to all construction joints and service penetrations.

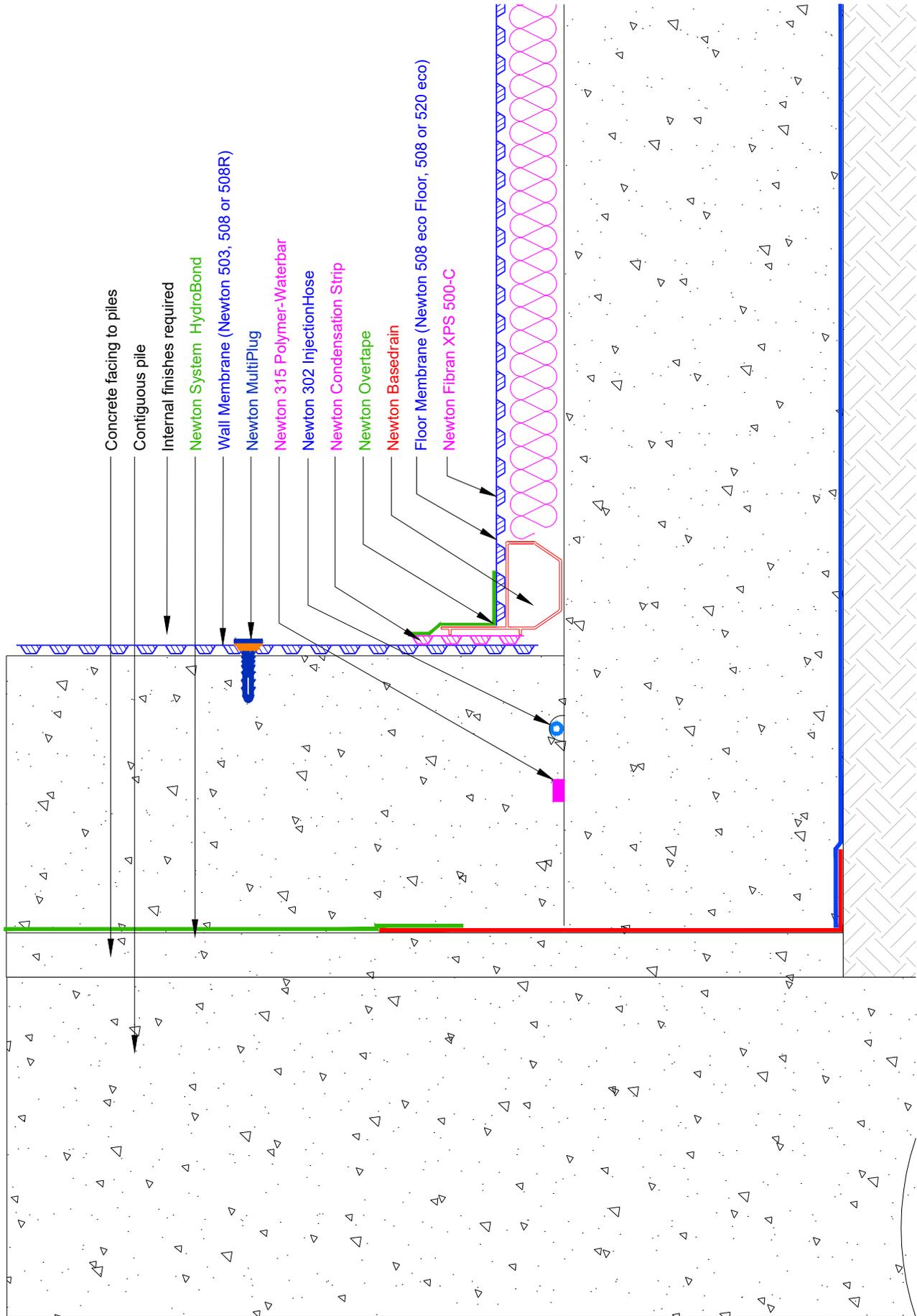
##### TYPE A APPLIED EXTERNALLY

Waterproof the structure with [Newton HydroBond System](#) consisting of pre-applied fully bonded membranes and fully bonded liquid applied membranes.

##### TYPE C INSTALLED INTERNALLY

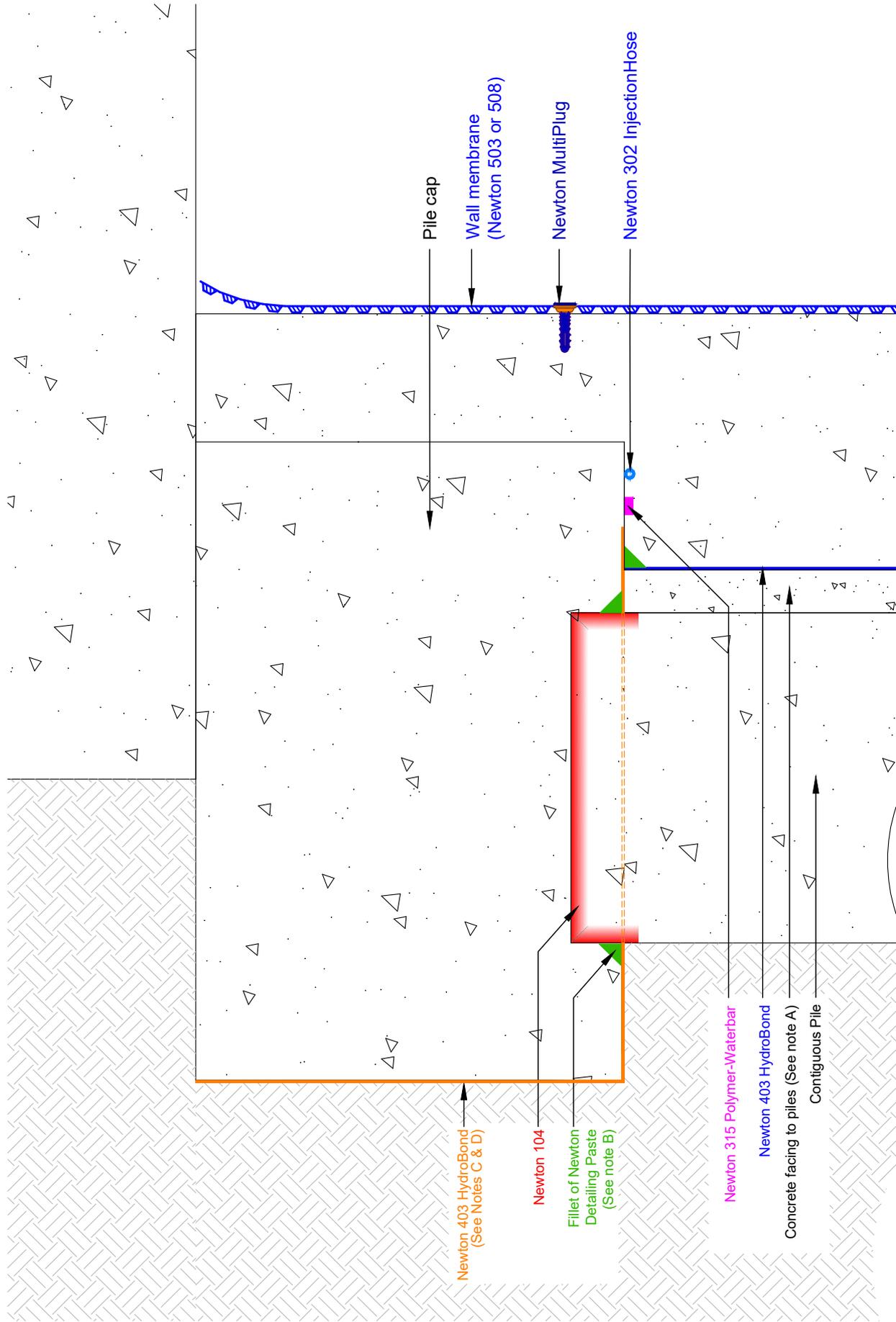
Waterproof internally with [Newton CDM System](#) providing drained protection.

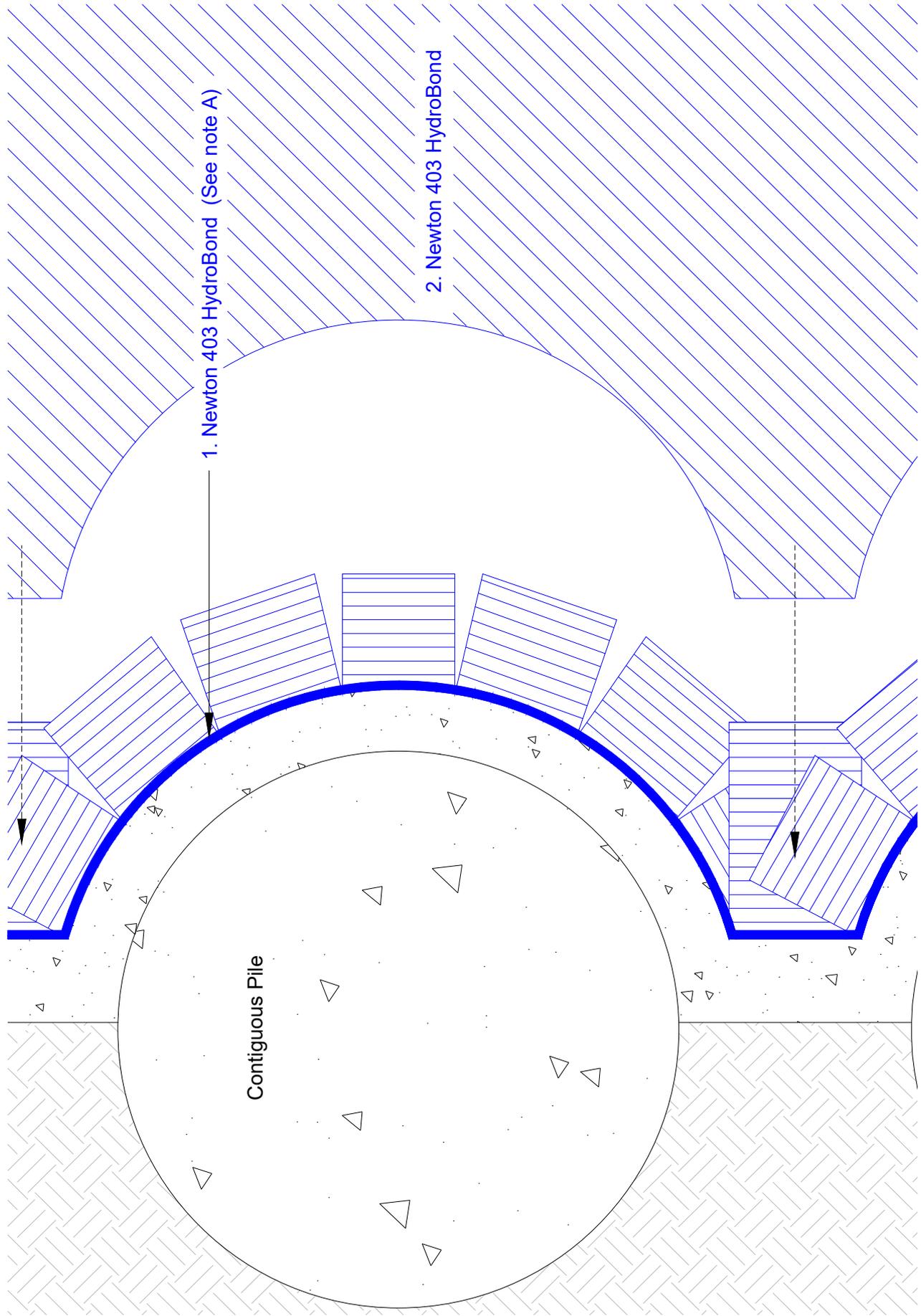
Any specification/advice provided is only valid if used with products supplied by John Newton and Company Ltd (trading as Newton Waterproofing Systems). Newton Waterproofing Systems reserve the right to update product literature at any time. Please always refer to our website for the latest versions.

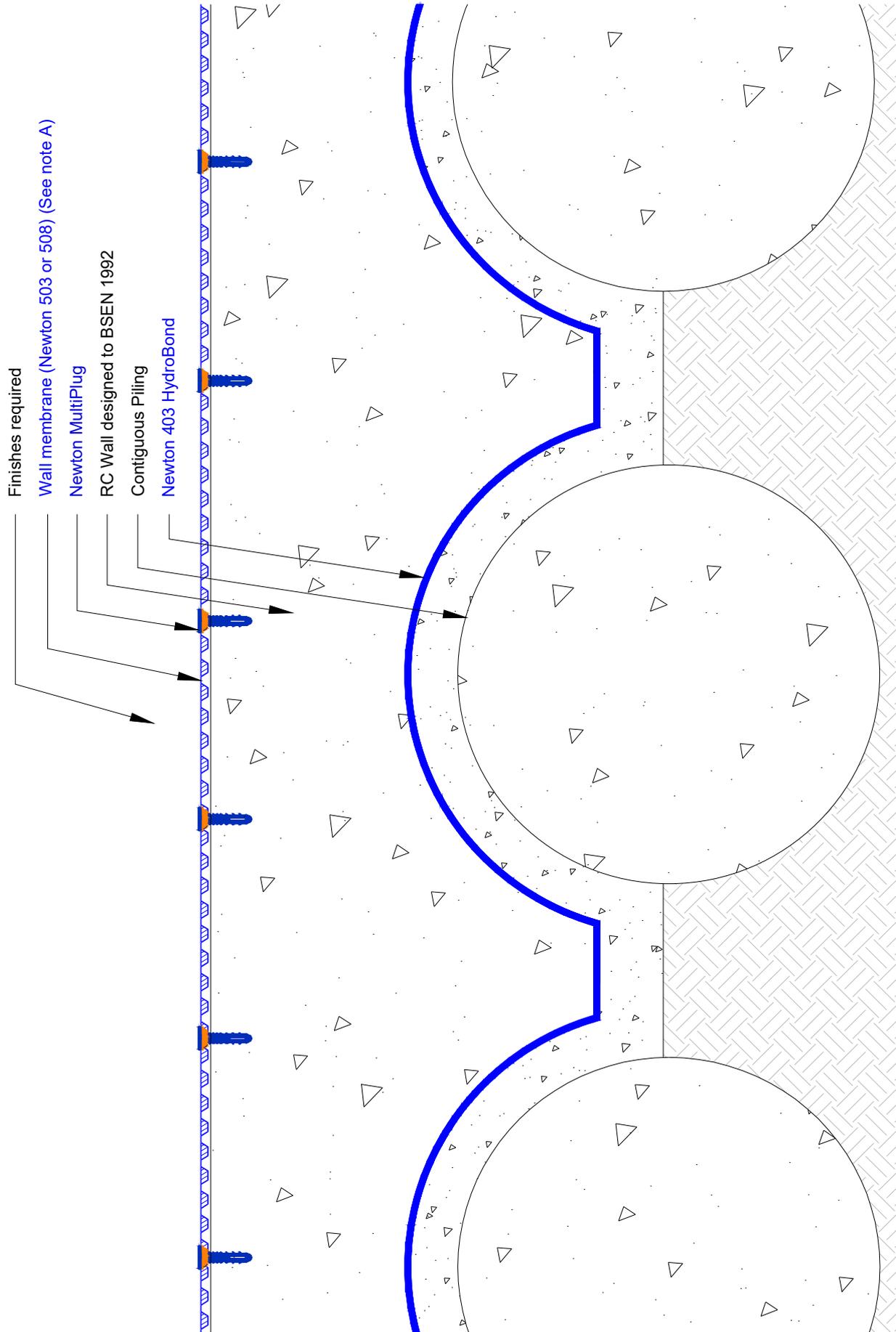


# JN-05

## Complete Waterproofing RC Basement within Contig Piles







## Type A, B &amp; C Waterproofing

## JN-05 SPECIFICATION OUTLINE

## Complete Waterproofing RC Basement within Contig Piles

## INTRODUCTION

The following specification provides the highest degree of waterproofing to a structure of the following build:

<b>Specification</b>	JN-05
<b>Description</b>	Complete waterproofing to RC structure. No gas protection.
<b>Build</b>	Reinforced concrete walls to BS EN 1992, supported from an RC raft.
<b>NEWTON HYDROBOND SOLUTION</b>	The Newton HydroBond System provides a complete and continuous waterproof barrier to the external surface of any below ground structure
Newton 403 HydroBond®	Newton 403 HydroBond is a mechanically bonded and self-healing membrane that is pre-applied ready for the placement of the concrete raft to a suitable smooth sound substrate such as a concrete blinding, closed cell insulation, void former system or drainage membrane such as Newton 410 GeoDrain.
<b>Preparation</b>	See J40/112 NBS Clause for Newton 403 HydroBond
<b>Application</b>	Piles should be faced with sprayed concrete to provide a uniform facing that follows the pile contours. Concrete facing should be structurally capable waterproof concrete facing designed by structural engineer.  Install the membrane as described in the product Installation Manual Lap the vertical membrane down onto the suitable substrate, ready for the horizontal application
<b>Page 4 or 15</b>	Apply Newton 403 HydroBond to inside of formwork prior to pouring of pile cap. Cut the Newton 403 HydroBond to tightly abut the profile of the heads of the contiguous piled wall. Sealed with a fillet of detailing mastic.  Mechanically fix (shotfire) Newton 403 HydroBond to profile of concrete piles. Vertical Newton 403 HydroBond abuts the underside of the peel adhered membrane on the soffit of beam, and seal around the profile of each pile with a fillet of Newton detailing paste.
<b>Page 5 or 15</b>	At base of piles, vertical Newton 403 HydroBond extended horizontally onto blinding (min 100mm), cut and splayed as necessary to allow to lay flat Newton 403 HydroBond (under slab) loose laid onto suitable oversite lapped over the cut and splayed lap from vertical application.
<b>Place Raft</b>	Pay particular attention not to damage the 403 HydroBond membrane during vibration of the concrete.
<b>NEWTON HYDROTANK SOLUTION</b>	All construction joints (day joints, shrinkage joints, movement joints etc) should be waterproofed with Newton System 300 waterbars to limit water ingress thorough joints in the structure.
Newton 315 Polymer Waterbar	A high grade, hydrophilic waterbar with high elasticity and high tensile strength, made from a polymer which swells when in contact with moisture.
<b>Preparation</b>	See E40/230 NBS Clause for Newton 315 Polymer-Waterbar
<b>Application</b>	Install the waterbar as described in the product datasheet  Fix waterbars at the centre dimension of joints
<b>Place Raft</b>	Pay particular attention not to damage the 315 Polymer-Waterbar during vibration of the concrete.
Newton 302 InjectionHose	A high performance waterbar system installed within and used for sealing construction joints in earth-retaining and water-retaining concrete structures. When injected with injection resin, the material penetrates into the concrete surrounding the construction joint to permanently seal any cracks, capillaries, pores and honeycombing within the structure.

<b>Preparation</b>	None Required
<b>Application</b> <b>NEWTON CDM SYSTEM</b>	Newton injection hose clips every 100/150mm. Maintainable basement waterproofing solution ideal for new-build basements and refurbishment projects. Comprises four components: Cavity Drain Membranes, Drainage, Pumps and Control Systems. Complies with the British Standard for Waterproofing.
<b>Substrate Preparation</b>	
Walls	See J40/310 NBS Clause for Newton System 500.
Floor	Horizontal concrete surfaces should have a surface finish to 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'.  Floor to be no more than +/- 5mm over 2m in any direction and no more than 25mm over any dimension. Floor to be flood tested and depressions over 10mm to be filled with appropriate repair product such as Newton 908 LiquaBond mortar.  Floor slab to be treated with <a href="#">Newton 906 Lime Inhibitor</a> as per the product data sheet
<b>Floor preparation:</b>	
Surface cracks (dead)	Fill with fine filler or <a href="#">901-P</a> mixed with sand and/or scrim with plasterers scrim
Surface Cracks (live)	Treat as movement joint - see below
Small holes or slight surface damage	Repair with appropriate filler
<b>Joints</b>	
Movement Joints and Isolation Joints	<b>IMPORTANT:</b> Movement and isolation joints should be avoided if possible as they are very difficult to waterproof. If they need to be included, please speak to the Newton Technical Department who will confirm an exact specification for the joint.
<b>Sump</b>	
	If water collected by the system is to be removed by pumping, provision for the sump must be included at the time the slab is placed.  Methods for forming of the sump chamber are included within the <a href="#">Titan-Pro pumping system</a> Installation Manual.  The Titan-Pro sump chamber must be surrounded by compacted concrete or placed within a concrete box and then concrete in place.
<b>Installation</b>	As per the Newton CDM Installation manual.  Installation should be by Newton NSBC waterproofing contractors who are trained in the installation of the system.  It is a requirement of the BBA Certificate that the system is installed by Newton NSBC waterproofing contractors.
<b>Wall Membrane</b>	Install with as many fixings are required to place the membrane to the wall.  Add further fixings as required for wall mounted ancillaries such as dry-lining brackets, insulation ties or brick/block ties.
<b>Drainage System</b>	Place above the slab within a spacer of <a href="#">Newton XPS 500-C</a> .  Place Newton Basedrain drainage channel to the perimeter and to any internal walls that are supported from the own strip foundations.  Place Newton Floordrain above construction joints, door thresholds or where cross drains are required.  The drainage system to terminate at the pumping system. Make connections to the Titan-Pro sump with Newton Basedrain Connectors.
<b>Floor Membrane</b>	Place the membrane to the floor, above the Fibran-XPS insulated drainage spacer.

### Protrusions

Seal the floor membrane to the permitter Basedrain drainage channel with Newton Overtape, sealed to the up-stand of the Basedrain.

### Protection

Seal the membrane as tightly as possible to the protrusion. A range of preformed sealing collars, sleeves, cloaks and linings are available.

- To Wall membrane
- To Floor membrane

Always required

- Please the Newton CDM installation manual
- Please the Newton CDM installation manual

### Ancillaries

- Newton 315 Polymer-Waterbar
- Newton Detailing Paste

Hydrophilic Waterbar for sealing the joint between the slab and the wall.

Please contact the Newton Technical Department to confirm which product is suitable for the intended application.

- Newton 302 InjectionHose
- Newton XPS 500-C insulation

Maintainable Injection Waterbar System

Insulated drainage spacer, or externally applied insulation, or protection for externally applied membranes.

## Type A, B &amp; C Waterproofing

## JN-05 NBS CLAUSE

## Complete Waterproofing RC Basement within Contig Piles



The following document is to be read alongside the relevant Newton Waterproofing datasheets.

#### NEWTON J40 - NEWTON HYDROBOND SYSTEM

##### J40 Flexible sheet waterproofing/ damp proofing

#### 297A WATERPROOFING MEMBRANE

##### Newton 403 HydroBond

A high performance, self-healing membrane with a locking fleece on the inner surface and a hydrophilic polymer coating externally. The membrane is BDA approved, NHBC accepted as Type A waterproofing, and the gas barrier variant provides resistance to radon, carbon dioxide and hydrocarbons.

Newton 403 HydroBond provides a complete waterproof envelope to the structure to achieve Type A (barrier) waterproofing suitable for Grades 1, 2 and 3 as defined by BS 8102:2009, are suitable for all below ground and earth-retained structures from domestic basements to the largest civil engineering projects, and can be used as part of the HydroBond® System with Newton 108 HydroBond-LM which is sprayed to the exposed walls of the basement after the temporary formwork is removed. Where space is tight, Newton 109-LM can be applied by roller or brush or small airless spray machine.

Newton 403 HydroBond can be used in conjunction with other Newton products to provide a co-ordinated and combined approach to the waterproofing of the whole structure that includes protection against water ingress to the deck, through construction joints, through and around service entries and to movement joints.

Correctly protected, the Newton HydroBond System will provide, under normal service conditions, a durable waterproof barrier for the life of the building to which it is installed; the expected lifetime of the building itself should be at least 60 years. The Newton HydroBond System is supported by BDA Agrément Certificate BAB 16-031/03/A and is accepted by the NHBC as a suitable waterproofing system for Type A Waterproofing to Grades 1, 2 & 3 – BS 8102:2009 System Manufacturer:

Newton Waterproofing Systems Ltd, Newton House, 17-20 Sovereign Way, Tonbridge, Kent, TN9 1RH

Tel: 01732 360095, Email: Tech@Newtonwaterproofing.co.uk, Web: [www.newtonwaterproofing.co.uk](http://www.newtonwaterproofing.co.uk)

[Please click here to download the full Newton 403 HydroBond NBS Clause](#)

#### NEWTON E40 - NEWTON HYDROTANK SYSTEM

##### E40 Designed joints in in situ concrete

#### 120 CONSTRUCTION/ MOVEMENT JOINTS GENERALLY

##### Newton 315 Polymer-Waterbar

A high grade, hydrophilic waterbar with high elasticity and high tensile strength, made from a polymer which swells when in contact with moisture. Ideal for sealing structures against water leaks to both cast-in-place concrete and precast construction joints.

The swelling is achieved through hydrophilic acrylate polymers, which are inseparably embedded within the butylene carrier material. This results in high elasticity and exceptional tensile strength, even when fully expanded within the joint.

Due to its high resistance to acids, alkalis and organic solutions, Newton 315 Polymer-Waterbar can be used to seal joints where aggressive water is expected such as within sewage treatment plants, biogas plants and liquid waste holding tanks.

Newton 315 Polymer-Waterbar swells up to 9 times its original size when in contact with water, sealing the joint fully and reliably. Newton 315 Polymer-Waterbar is particularly suited to sealing non-compressed joints such as at the junction between slab and wall.

Newton Waterproofing Systems Ltd, Newton House, 17-20 Sovereign Way, Tonbridge, Kent, TN9 1RH

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[Please click here to download the full Newton 315 Polymer-Waterbar NBS Clause](#)

### NEWTON E40 - NEWTON HYDROTANK SYSTEM

#### E40 Designed joints in in situ concrete

#### 120 CONSTRUCTION/ MOVEMENT JOINTS GENERALLY

##### Newton 302 Injection Hose

A high performance waterbar system installed within and used for sealing construction joints in earth-retaining and water-retaining concrete structures. When injected with injection resin, the material penetrates into the concrete surrounding the construction joint to permanently seal any cracks, capillaries, pores and honeycombing within the structure.

Newton 302 Injection Hose features micro-ports equally spaced over the entire circumference of the hose, and when injected with injection resin at 1-bar of pressure or above the microscopic ports open and the low-viscosity resin penetrates deeply into the concrete surrounding the construction joint.

The injection hose is compatible with both polyurethane and acrylic injection resins, and when installed and injected correctly Newton 302 Injection Hose improves the water tightness of the 'Type B' waterproof structure by sealing the joints and encouraging improvements in the quality of the concrete placement.

Newton Waterproofing Systems Ltd, Newton House, 17-20 Sovereign Way, Tonbridge, Kent, TN9 1RH

Tel: 01732 360095, Email: [Tech@Newtonwaterproofing.co.uk](mailto:Tech@Newtonwaterproofing.co.uk), Web: [www.newtonwaterproofing.co.uk](http://www.newtonwaterproofing.co.uk)

[Please click here to download the full Newton 302 Injection Hose NBS Clause](#)

### NEWTON J40 - NEWTON CDM SYSTEM

#### J40 Flexible sheet waterproofing/damp proofing

#### 290A HIGH DENSITY POLYETHYLENE STUDED CAVITY DRAIN MEMBRANE

##### Newton CDM System

The Newton Cavity Drain Membrane (CDM) System is a maintainable basement waterproofing solution ideal for new-build basements and refurbishment projects. Comprising of four components: Cavity Drain Membranes, Drainage, Pumps and Control Systems, the Newton CDM System complies with the British Standard for Waterproofing and provides a Grade 3 habitable internal environment.

Newton Waterproofing Systems Ltd, Newton House, 17-20 Sovereign Way, Tonbridge, Kent, TN9 1RH

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[Please click here to download the full Newton CDM system NBS Clause](#)