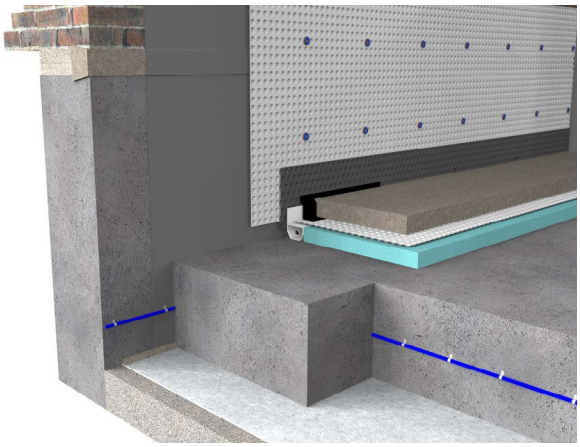
Type A & C Waterproofing
E-AC-01 SPECIFICATION SHEET
Combined Waterproofing of Underpinning

Rev 2.0 - 23 December 2021

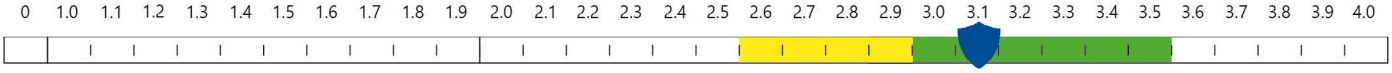


BUILD

WALL CONSTRUCTION:
Concrete underpins

FLOOR CONSTRUCTION:
Reinforced Concrete (RC) Slab

NWI SCORE



This specification employs 2 forms of waterproofing (Type A - Barrier 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 system being effective, especially at the construction joints.

SPECIFICATION

ANCILLARIES

Install appropriate Newton waterbars to all construction joints and service penetrations.

TYPE A INSTALLED EXTERNALLY

Waterproof the structure with Newton HydroBond System providing barrier protection.

TYPE A APPLIED INTERNALLY

Waterproof the structure with Newton HydroSeal System providing barrier protection.

TYPE C INSTALLED INTERNALLY

Waterproof internally with Newton CDM System providing drained protection.

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.

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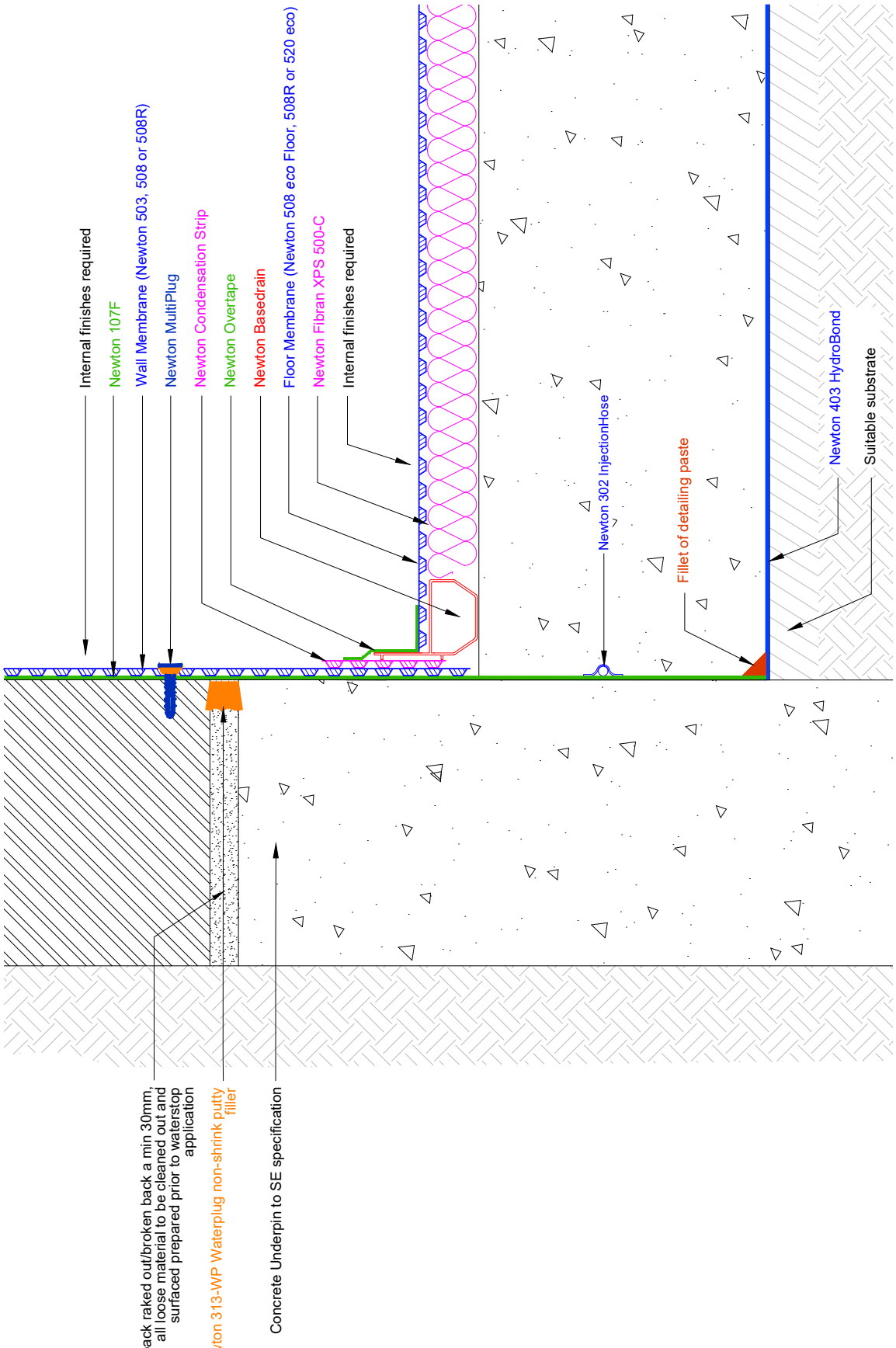
E-AC-01
Combined Waterproofing of Underpinning

NEWTON WATERPROOFING SOLUTION - E-AC-01



NOT TO SCALE | 20FEB20 | DESIGN-RC | DRAWN-JRN | CHECKED-RC | REV-B

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Type A & C Waterproofing
E-AC-01 SPECIFICATION OUTLINE
Combined Waterproofing of Underpinning

The following specification provides 2 forms of waterproofing

Specification	E-AC-01
NEWTON HYDROSEAL SYSTEM	
Newton 107F	A highly flexible cement based waterproofing slurry.
Preparation	See Newton 107F Datasheet
Underpins	The dry pack used within underpinning contains a large amount of free lime which can cause limescale build up within the drainage channel of the Newton CDM System should water enter through the dry pack. Seal the dry pack with Newton 313-WP. A 10mm thick smoothing coat of Newton 908 Liquabond smoothing coat may be required on brick and blockwork walls.
Application	See J10/510 NBS Clause for Newton 107F
NEWTON HYDROTANK SYSTEM	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 302 InjectionHose	Newton 302 Injection Hose is mechanically fixed with Hose Clamps to the in-place element, ready for concrete placement of the second element of the joint. Injection Ports are fixed to the steel reinforcement bars, and are visible and accessible after the formwork has been removed. Coloured PVC Delivery Hoses connect the Injection Ports to the Newton 302 Injection Hose to deliver the injected resin to the appropriate joint after the concrete has cured for a minimum of 28 days. Resin injected under high pressure into the Newton 302 Injection Hose.
Preparation	None required
Application	Newton injection hose clips every 100/150mm. Fix waterbars at the centre dimension of joints
Place slab	Place RC slab ensuring that the concrete is fully compacted, paying attention to compaction below the reinforcement steel and waterbar. Pay particular attention not to damage the 302 InjectionHose during vibration of the concrete.
NEWTON HYDROBOND SYSTEM	The Newton HydroBond System provides a complete and continuous waterproof barrier to the external surface of any below ground structure
Substrate Preparation	
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 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. See J40/112 NBS Clause for Newton 403 HydroBond
Application	Install the membranes as described in the product Installation Manual
Newton 403 HydroBond	Neatly install the membrane to the blinding/support abuting the underpin Seal around protrusions as described within the data sheets and Newton Technical Drawings.
NEWTON CDM SYSTEM	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.
Substrate Preparation	

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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 document-ed 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 and depressions over 10mm or over to be filled with appropriate repair product such as Newton 908 LiquaBond mortar. Floor slab to be treated with Newton 906 Lime Inhibitor as per the product data sheet
Floor preparation:	
Surface cracks (dead)	Fill with fine filler or 901-P 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
Joints	
Movement Joints and Isolation Joints	**IMPORTANT:** 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.
Sump	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 Titan-Pro pumping system Installation Manual. The Titan-Pro sump chamber must be surrounded by compacted concrete or placed within a concrete box and then concrete in place.
Installation	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.
Wall Membrane	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.
Drainage System	Place above the slab within a spacer of Newton XPS 500-C. 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.
Floor Membrane	Place the membrane to the floor, above the Fibran-XPS insulated drainage spacer. Seal the floor membrane to the permitter Basedrain drainage channel with Newton Overtape, sealed to the up-stand of the Basedrain. Newton Fibran XPS 500-C is placed below the Newton flooring membrane as a fully drained supporting spacer. The maximum floor load is 16 Mpa (1.6 tonnes/m2). Newton Fibran XPS 500-C has a thermal conductivity of 0.035W/mk and as such will make a significant contribution to the U-value of the floor.
Protrusions	Seal the membrane as tightly as possible to the protrusion. A range of preformed sealing collars, sleeves, cloaks and linings are available.
Protection	Always required
To Wall membrane	Please the Newton CDM installation manual
To Floor membrane	Please the Newton CDM installation manual

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Type A & C Waterproofing
E-AC-01 NBS CLAUSE
Combined Waterproofing of Underpinning

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 8102:2009System Manufacturer:

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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 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.

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Please click here to download the full Newton 302 Injection Hose NBS Clause

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NEWTON J10 - NEWTON HYDROSEAL SYSTEM

J10 Designed joints in in situ concrete

120A CEMENTITIOUS COATING

Newton 107F

Cementitious coating for the waterproofing and protection of concrete and masonry. Can be spray-applied so ideal for large projects. Suited to the waterproofing of reservoirs, tunnels, water tanks, basements, podium decks, flat roofs and balconies.

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Please click here to download the full Newton 107F NBS Clause

NEWTON J40 - NEWTON CDM SYSTEM

J40 Flexible sheet waterproofing/damp proofing

290A HIGH DENSITY POLYETHYLENE STUDDED 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.

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Please click here to download the full Newton CDM system NBS Clause