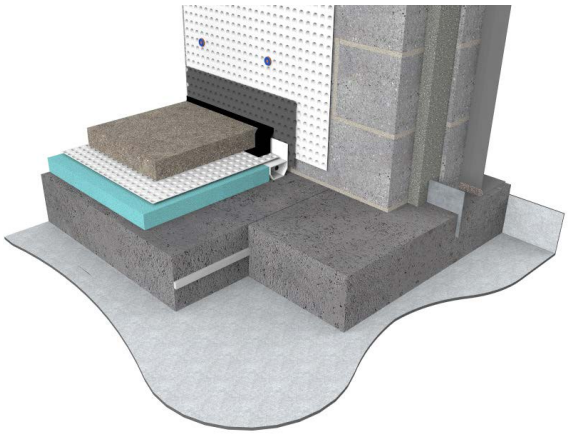
Type A & C Waterproofing
AC-03 SPECIFICATION SHEET
Combined Waterproofing of Block walls & RC raft

Rev 3.0 - 19 April 2021

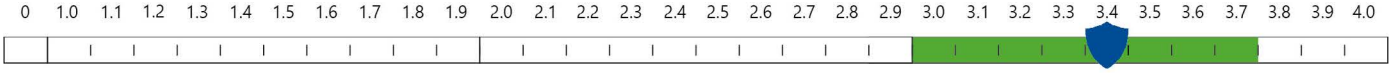


BUILD

WALL CONSTRUCTION:
Double skin of block-work with RC core

FLOOR CONSTRUCTION:
Reinforced Concrete (RC) Raft

NWI SCORE



This specification employs 2 forms of waterproofing (Type A - Barrier Protection) to prevent ground water passing through the structural elements of the building and (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 controlling the quantity of water that can pass through the structure so as not to inundate the Type C. There is therefore also a reliance on the Type C system being designed ans installed correctly.

SPECIFICATION

ANCILLARIES

Install appropriate Newton waterbars 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.

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

To improve the NWI score please see Newton Specification Sheet ABC-02.

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

A-RATED INSURANCE

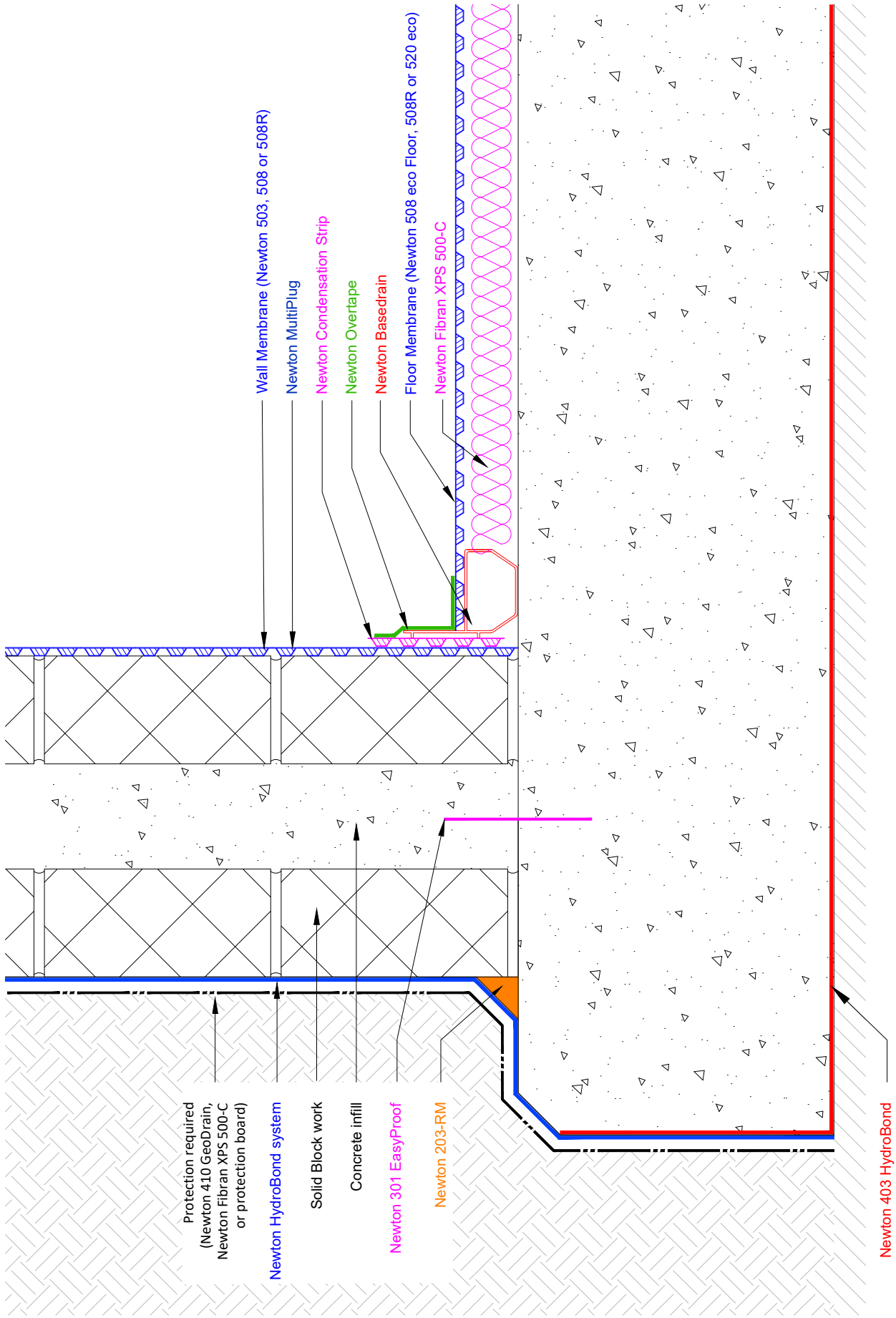
Tailor made insurance policies available depending on the specialist contractor and specification.

Newton House, 17-20 Sovereign Way, Tonbridge, Kent, TN9 1RH
T: +44 (0)1732 360 095 **W:** www.newtonwaterproofing.co.uk **E:** tech@newtonwaterproofing.co.uk

AC-03

Combined Waterproofing of Block walls & RC raft

NEWTON WATERPROOFING SOLUTION - AC-03



NOT TO SCALE | 03OCT18 | DESIGN-DGB | DRAWN-AJG | CHECKED-DGB | REV-A

Newton House, 17-20 Sovereign Way, Tonbridge, Kent, TN9 1RH
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Type A & C Waterproofing
AC-03 SPECIFICATION OUTLINE
Combined Waterproofing of Block walls & RC raft

The following specification provides 2 forms of waterproofing

Specification	AC-03
Description	Combined waterproofing to RC slab/Block wall structure. No gas protection.
Build	Block in two skins with reinforced concrete core walls, supported from Reinforced concrete raft designed with flexural and through section crack widths limited to 0.2mm.
NEWTON HYDROTANK SOLUTION	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	Option to include 3rd party certified Newton 315 Polymer Waterbar with NHBC approval
	A high grade, hydrophilic waterbar with high elasticity and high tensile strength, made from a polymer which swells when in contact with moisture.
Preparation	See E40/230 NBS Clause for Newton 315 Polymer-Waterbar
Application	Install the waterbar as described in the product datasheet
	Fix waterbars at the centre dimension of joints
NEWTON HYDROBOND SOLUTION	The Newton HydroBond System provides a complete and continuous waterproof barrier to the external surface of any below ground structure
Newton 403 HydroBond®	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.
Newton 403 HydroBond	See J40/112 NBS Clause for Newton 403 HydroBond
Newton 108 HydroBond-LM or	See J30/110 NBS Clause for Newton 108 HydroBond-LM
Newton 109-LM	See J30/110 NBS Clause for Newton 109-LM
	Terminate to DPC level as described within Newton Technical Drawings
	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	
Walls	Blockwork to be uniform and clean. Remove snots and debris.
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 Newton 906 Lime Inhibitor as per the product data sheet
Drainage Channels	Drainage channels placed above the slab, within a recess of Newton XPS, insulation.

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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	
Day/Shrinkage Joints	Newton Floordrain used as part of the floor drainage system should be placed above 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	Install the Newton CDM Waterproofing System as per the 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. Newton Condensation Strip is required at the base of wall membrane
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. Joint the membrane with Newton Waterseal Tape at the overlapping flange. Seal the floor membrane to the permitter Basedrain drainage channel with Newton Overtape, sealed to the up-stand of the Basedrain.
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 see Reference sheet WF.
To Floor membrane	Please see Reference sheet FF.

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Type A Waterproofing
AC-03 NBS CLAUSE
Combined Waterproofing of Block walls & RC raft

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:

NEWTON E40 - NEWTON HYDROTANK SYSTEM

E40 Designed joints in in situ concrete

120 CONSTRUCTION/ MOVEMENT JOINTS GENERALLY

Newton 301 EasyProof

Coated metal waterbar system used for sealing kickerless construction joints within retained concrete structures. It features an adhesive, reactive polymer coating on one of its sides which creates a permanent watertight seal that works immediately.

Installation is quick and easy with the waterbar fitted in place to the reinforcement steel with special clips so that after the placement of the concrete, the waterbar is fully embedded within the two adjoining elements, completely blocking the passage of water through the joint.

Because Newton 301 EasyProof is not fixed to one of the concrete elements as is the case with conventional waterbars, the forming of a kicker is not necessary. Where the walls are formed above a kicker joint, use Newton 315 Polymer-Waterbar.

Newton 301 EasyProof metal waterbar is certified to resist water pressure of up to 5 bar (50m), and is resistant to all types of naturally occurring ground water types.

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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 pre-cast 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 J30 - NEWTON HYDROBOND SYSTEM

J30 TANKING

110A SEAMLESS RUBBER WATERPROOFING MEMBRANE

Newton 108 HydroBond-LM

Highly radon resistant, cold spray-applied, seamless rubber waterproofing membrane for the external waterproofing of basements (including covered decks) and foundation walls.

Newton 108 HydroBond-LM is very quick to apply, at up to 1000m^2 per day, and is not subject to the delays normally associated with liquid membranes as it can be applied in cooler and damper conditions, and without a primer.

Newton 108 HydroBond-LM is extremely puncture resistant, with high elasticity and a 95% recovery memory. The membrane becomes fully engaged into the concrete surface to prevent water tracking and is suitable for all below ground and earth-retained structures, ranging from domestic basements to the largest civil engineering projects.

Newton 108 HydroBond-LM can be used together with Newton 403 HydroBond to provide a complete waterproof envelope to the structure, forming a Type A (barrier) waterproofing solution suitable for Grades 1, 2 and 3 as defined by BS 8102:2009. Where space is tight, Newton 109-LM can be applied by roller, brush or small airless spray machine.

The Newton HydroBond System is supported by BDA Certificate BAB 16-031/04/A and is accepted by the NHBC as a suitable waterproofing system for Type A Waterproofing to Grades 1, 2 & 3 – BS 8102:2009.

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

Please click here to download the full Newton 108 HydroBond-LM NBS Clause

NEWTON J30 - NEWTON HYDROBOND SYSTEM

J30 TANKING

110A SEAMLESS RUBBER WATERPROOFING MEMBRANE

Newton 109-LM

Radon-certified, flexible, single-component, cold-applied and seamless rubber waterproofing membrane used primarily for the external waterproofing of earth-retaining structures such as basements and foundation walls.

Newton 109-LM is extremely puncture resistant with elasticity of 850% and a 95% recovery memory. The membrane becomes fully engaged into the substrate to prevent water tracking and is suitable for all below ground and earth-retained structures, ranging from domestic basements to the largest civil engineering projects.

Newton 109-LM is available in two variants: Medium Viscosity, for use in warmer temperatures, and Low Viscosity, for when it is cooler. Newton 109-LM is also a constituent product of the Newton HydroBond® System supported by BDA Agrément Certificate BAB 16-031/04/A and is accepted by the NHBC as a suitable waterproofing system for Type A Waterproofing to Grades 1, 2 & 3 – BS 8102:2009.

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Please click here to download the full Newton 109-LM 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