

Type A & C Waterproofing

AC-22 SPECIFICATION SHEET

Internal Waterproofing of Underpinning

Rev 3.0 - 23 December 2021



BUILD

WALL CONSTRUCTION:
Underpinned existing structure

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 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

To improve the NWI score please see Newton Specification Sheet E-AC-01.

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

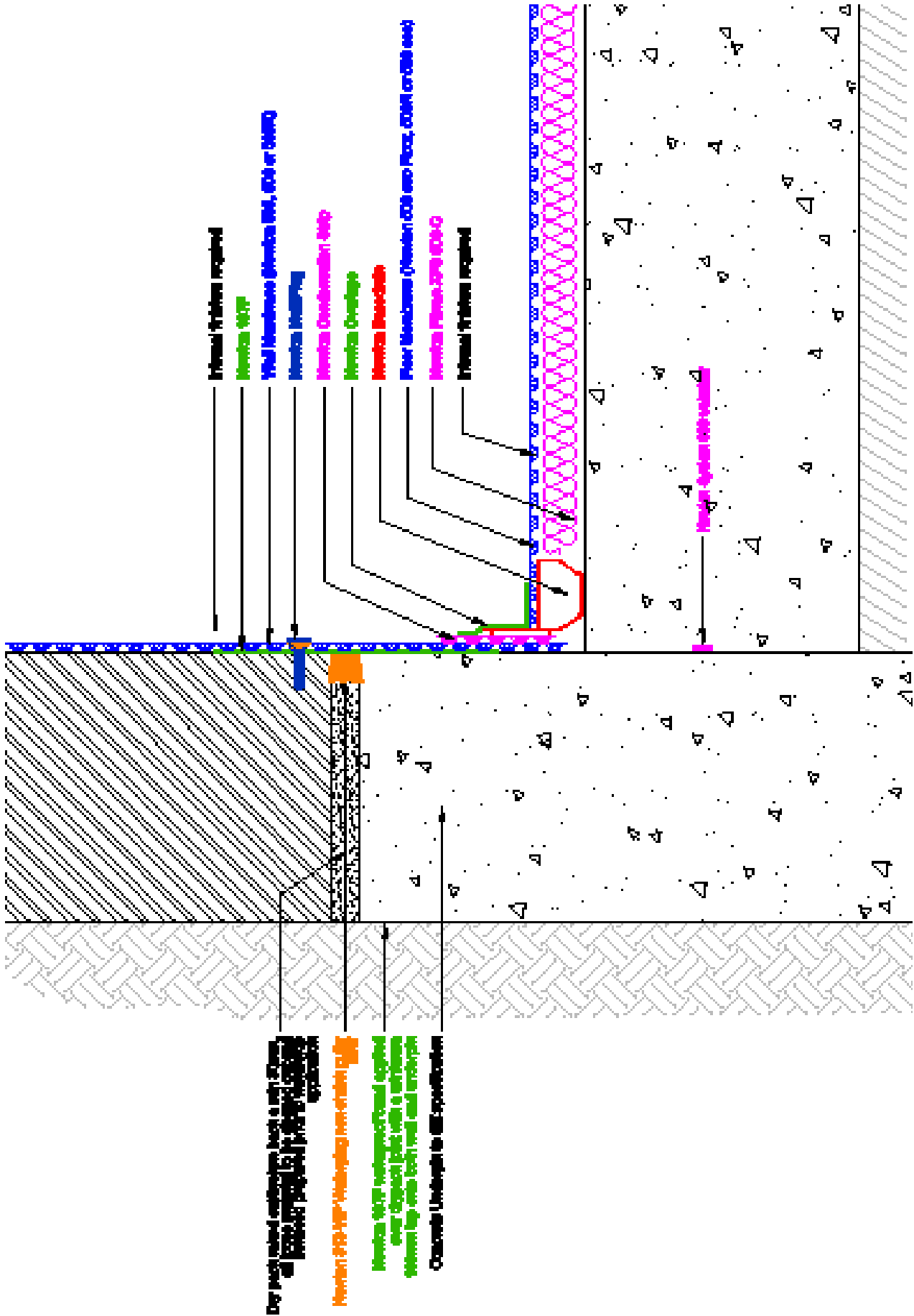
A-RATED INSURANCE

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

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.

AC-22

Internal Waterproofing of Underpinning



Type A Waterproofing

AC-22 SPECIFICATION OUTLINE

Internal Waterproofing of Underpinning

The following specification provides 2 forms of waterproofing

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| Specification | AC-22 |
| Description | Combined waterproofing to underpinning. No gas protection. |
| Build | Underpinning, with reinforced reinforced concrete slab to BS EN 1992. |
| NEWTON HYDROSEAL SYSTEM | |
| Newton 107F | See Newton 107F Datasheet |
| Preparation | 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 . |
| 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 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. |
| 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 |
| 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 315 Polymer-Waterbar during vibration of the concrete. |
| 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 | 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 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. |

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|------------------------|--|
| Installation | <p>Methods for forming of the sump chamber are included within the Titan-Pro pumping system Installation Manual.</p> <p>The Titan-Pro sump chamber must be surrounded by compacted concrete or placed within a concrete box and then concrete in place.</p> <p>As per the Newton CDM Installation manual.</p> <p>Installation should be by Newton NSBC waterproofing contractors who are trained in the installation of the system.</p> <p>It is a requirement of the BBA Certificate that the system is installed by Newton NSBC waterproofing contractors.</p> |
| Wall Membrane | <p>Install with as many fixings are required to place the membrane to the wall.</p> <p>Add further fixings as required for wall mounted ancillaries such as dry-lining brackets, insulation ties or brick/block ties.</p> |
| Drainage System | <p>Place above the slab within a spacer of Newton XPS 500-C.</p> <p>Place Newton Basedrain drainage channel to the perimeter and to any internal walls that are supported from the own strip foundations.</p> <p>Place Newton Floordrain above construction joints, door thresholds or where cross drains are required.</p> <p>The drainage system to terminate at the pumping system. Make connections to the Titan-Pro sump with Newton Basedrain Connectors.</p> |
| Floor Membrane | <p>Place the membrane to the floor, above the Fibran-XPS insulated drainage spacer.</p> <p>Seal the floor membrane to the permitter Basedrain drainage channel with Newton Overtape, sealed to the up-stand of the Basedrain.</p> |
| Protrusions | <p>Seal the membrane as tightly as possible to the protrusion. A range of preformed sealing collars, sleeves, cloaks and linings are available.</p> |
| Protection | <p>Always required</p> |
| To Wall membrane | <p>Please the Newton CDM installation manual</p> |
| To Floor membrane | <p>Please the Newton CDM installation manual</p> |

Type A Waterproofing

AC-22 NBS CLAUSE

Internal Waterproofing of Underpinning

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

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.

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

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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