



JOHN NEWTON  
*WATERPROOFING SYSTEMS*

# The Guide To Waterproofing An Existing Basement



John Newton & Company is the leading independent supplier of basement waterproofing and damp proofing solutions in the UK. Newton System 500 is a maintainable waterproofing solution for below ground areas, and it is commonly used where other tanking systems have failed. Newton System 500 is fully compliant with BS8102:2009 regulations. For further information and a list of registered installers in your area, phone 01732 360095 or visit [www.newton-membranes.co.uk](http://www.newton-membranes.co.uk)

# The Guide To Waterproofing An Existing Basement

## What to Consider When Waterproofing an Existing Basement

When waterproofing an existing basement you have a large variety of products available at your disposal. The key is choosing the right product to achieve the degree of waterproofing required for the intended use of the basement.

*When waterproofing an existing basement, you will either:*

1. Attempt to hold water back by applying a barrier (tanking) to the walls and floor of the basement or
2. Install a cavity drain system (drained cavity) which receives and then discharges water ingress.

### A. Barrier Option

Application of barrier (tanking) membranes requires either considerable preparation to provide a bond capable of withstanding water pressure, or a loading layer to hold the membrane to the surface so that it is not debonded by water pressure. Preparation is time consuming and expensive whilst a loading layer will waste valuable internal living space.

To be effective, a barrier membrane must be 100% defect free, which is often difficult to achieve. Where a barrier membrane has been loaded, getting at the membrane to make repairs is very difficult as the loading layer needs to be removed.

Barrier membranes need to lap from wall to floor to like a tank (hence tanking) and require the structure to be physically capable of resisting the increase in water pressure. Many barrier systems fail due to movement of the structure due to water pressure exerting forces to the walls and slab.



*Here bitumen paint has been applied as the tanking solution, and it has clearly failed*

### B. Cavity Drain Option - Newton System 500

This would be the recommended solution as the chance of failure is dramatically reduced.

A well designed cavity drain waterproofing system forms voids created by the cusped (studded) membrane and the drainage channels that receive the water at the points it enters the structure.

The System 500 membrane is mechanically fixed walls using Newton MultiPlugs (water tight fixing incorporating a waterproof seal that can also receive screws or brick ties). The walls are then lined with a variety of suitable finishes such as dry-lining or block walls or alternatively directly plastered or rendered with the meshed variants of the membranes.



Newton Basedrain drainage channel is placed at the joint of wall and slab and connects to either a pumping system or to safe gravity drainage to allow for water to be safely removed from the structure.

*The cavity drain option is recommended as it is fully maintainable and repairable*

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## Barrier Option

### Advantages

The biggest advantage with the barrier is if placed perfectly it will **negate the need for installing any form of sump system** which saves on future maintenance costs.

### Disadvantages

Any applied system will need preparation to the substrate prior to application which can prove very **disruptive and messy**. Depending upon the substrate this will require sand blasting or scabbling to remove surface containments and if to brick or block, a smoothing render coat is required to present a suitable surface for the applied barrier.

Many barrier membranes are **mixed with water** which can result in extended drying times for the system which can significantly impede a building programme, especially when it comes to decorating the finished project.

Some barrier membranes such as sheet membranes or asphalt require **loading to prevent them de-bonding** when resisting water pressure. The loading erodes valuable habitable space.

**Damage to the membrane when fixing items** such as shelving. Once punctured, this weakness in the membrane can be difficult to repair. Even professionally installed fixings create a weakness to the barrier.

## Cavity Drain Option

### Advantages

**Minimal surface preparation** required, if any.

Can be installed with **no wet trades or drying out times**

Can be **decorated quickly** if an independent dry lining frame is used

**Does not push water to other areas** of the project – as could happen with a barrier.

**Can be used on all Listed Buildings** as it is fully reversible – barriers are not reversible.

Newton System 500 is **maintainable – a requirement of BS8102:2009**

### Disadvantages

Unless safe gravity drainage, that discharges to a point below the basement floor, is available a **pumping system is required** which will mean ongoing maintenance.

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## What Are The Implications of BS8102?

*BS8102:2009 - Code of Practice for Protection of Below Ground Structures Against Water From The Ground*

The New British Standard came into effect 30 November 2009 and supersedes BS8102:1990

*Recent developments are covered within the standard pertaining to*

- More deep construction in urban areas
- An increase in provision of residential basements
- Development and use of new waterproofing materials

## Design Philosophy and Design Team

The new standard recognises that, for a below ground project to be successful, strategies for dealing with groundwater, soil gases and contaminants are considered from the very earliest stages of the design process.

A "Waterproofing Specialist" should be included as a part of the design team so that an integrated waterproofing solution is created.

All design decisions made by others that might have an impact on the waterproofing design should be brought to the attention of the waterproofing specialist/designer and installing contractors. Final decisions and any recommendations should be approved by the designer.

## BS8102 and Newton Specialist Basement Contractors (NSBC)

### *Guaranteed Waterproofing Solutions*

Newton Specialist Basement Contractors are an elite group of professional basement waterproofing contractors who work in partnership with John Newton to provide the specifier and their clients with the highest quality products, design and installation available in all aspects of domestic and commercial basement waterproofing.

All members of the scheme adhere to very strict membership criteria and they are required to demonstrate quality workmanship resulting in a meaningful scheme where all members provide a level of superior technical excellence unsurpassed within the industry.

NSBC contractors can offer peace of mind to the designer and the client by taking full design liability on the project, and fulfil the role of 'waterproofing specialist' as recommended by BS8012:2009. In addition they provide a meaningful guarantee for their work, which can be insured on request.

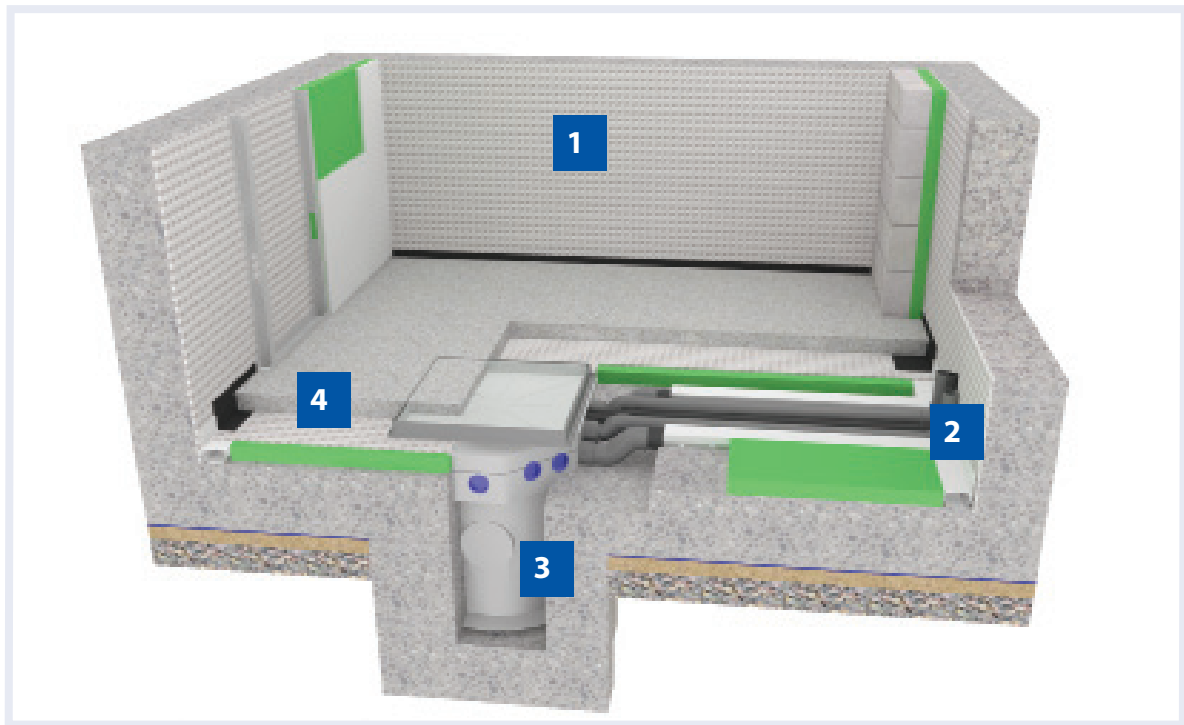
For a list of Newton Specialist Basement Contractors (NSBC) in your area please ring 01732 360095 or fill out our online form: **Request List of Registered Installers**





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## How Newton System 500 Cavity Drain Waterproofing Works



### 1. Wall Membrane

Choose an appropriate wall membrane to suit your wall finish. In this example, Newton 508 has been chosen for the walls and is shown with both independent metal frame dry-lining and concrete block wall coverings.

### 2. Drainage System

Choose your preferred method of water collection. Here Newton Basedrain is sat above the slab adjacent to a spacer of 50mm of closed cell insulation.

### 3. Sump System and Pumps

Choose the most suitable method for removing the water. Here a Titan-Pro sump system collects water from the Basedrain drainage system via two connections of Newton Floordrain. The pumps would be chosen depending on factors such as the pumping head and the type of water collected.

### 4. Floor Membrane

Choose the correct floor membrane for your finishes and floor loadings. Newton 508 is shown here with a 65mm screed above.

*'The level of service and support that we received from Newtons was as good as it was ever going to get. We have been delighted with the product support and genuine interest that we have received in our project and would strongly recommend that anyone looking for a cavity membrane product saves themselves the time of researching that market and go directly to John Newton & Co – you will not be disappointed.'*

Richard Clist, Clist Properties Ltd

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## Case Studies

### Royal Courts of Justice

*Newton System 500 is ideal for listed buildings as it is deemed 'reversible'*

The Grade I Listed Royal Courts of Justice has a labyrinth of unused basement areas. With space at a premium, the courts looked to converting part of the brick basement areas into habitable space. A Newton System 500 waterproofing system was designed and installed by a Newton Specialist Basement Contractor. Newton 508 Mesh was chosen as the waterproofing membrane.

Listed Building requirements are very stringent, and demand that any waterproofing solution is 'reversible'. Newton Membranes were ideal as the system could be removed with minor pointing being all that would be required to restore the vaults to their original condition.

The Newton Waterproofing Solution proved to be quick to install, sympathetic to the structure, and was well received by the end client who was delighted that the guidelines of both the British Standard and National Heritage were fully complied with.

*Following the success of this project, the Newton Specialist Basement Contractor has been commissioned to waterproof further basement areas in the Royal Courts of Justice with Newton System 500.*



*Grade I Listed Royal Courts of Justice, London*



*The owners of this Grade II Listed property converted their basement to a home gym*



### Residential Basement Conversion, Surrey

*Newton System 500 was the waterproofing solution in this high spec basement conversion*

The owner of this stunning Grade II Listed property in rural Surrey was looking to make use of an existing basement which was unusable due to severe damp problems. The owner consulted his conservation architect and was advised to use a system which was sympathetic to the structure and one that is reversible to comply with Listed Building requirements. After consultation with a number of specialist waterproofing companies the owner commissioned a Newton Specialist Basement Contractor to design and install Newton System 500.

The structural waterproofing was completed without any need to prepare the original substrate with no wet trades or drying out times, meaning minimal disruption and a highly cost effective basement waterproofing solution. The property was converted into a modern and high spec cinema, gymnasium and wine cellar in little over three weeks from start to finish.

*The Newton Specialist Basement Contractor was able to take the project from design and installation to conclusion offering full PI on the design and an insured back guarantee, the highest level of waterproofing guarantee available in the United Kingdom.*

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## Case Studies

### Domestic Basement, Essex

*Newton System 500 used in this basement conversion*

This domestic property has a large foot print with a small basement area. The architect was tasked to develop the property so as to give more living space to accommodate a growing family. As planning permission was limited in this built-up North London suburb, the designer decided to dig down underneath the existing footprint of the property to achieve their expansion plans. Once planning was agreed, a Newton Specialist Basement Contractor was commissioned to design, install and guarantee the structural waterproofing element.

To achieve head height required by the client, the ground work contractors were tasked to underpin the entire existing basement to lower the floor levels to achieve a floor to ceiling height of 3m. Once the new RC slab was poured and the underpin shell created, the Newton Specialist Basement Contractor installed Newton System 500. Any water entering the building was expelled to the Newton Titan Pro sump chamber.

*Installation by a Newton Specialist Basement Contractor gave the client peace of mind of an insured backed guarantee and the specifier was also able to delegate full PI on design for the structural waterproofing package.*

### Further Information

*For any advice on your waterproofing project, please contact John Newton & Company on 01732 360095 or [info@newton-membranes.co.uk](mailto:info@newton-membranes.co.uk)*

*Contact John Newton & Company for:*

- **Free technical advice** - our team of experts can design and modify technical drawings in all formats and design a waterproofing solution best suited to your needs
- **RIBA Approved CPDs for architects** - New CPD for specifiers on the changes to BS8102: The Protection of Structures from Water From the Ground - Book Now
- **Guaranteed installation from a Newton Specialist Waterproofing Contractor.** Our nationwide network of damp proofing and basement waterproofing contractors offer guaranteed solutions.

*"I have had Newton System 500 installed in the cellar of my London Victorian property following failure of the previous tanking system as a result of a burst water main in 2009. To say that I am very satisfied with the customer experience with John Newton to date and Newton System 500 is an understatement! The technical team at John Newton are "par excellence". The company as a whole is exemplary and commendable putting the customer always first and tailoring solutions to meet customer needs!" - G Palazzo, London*



*Renovating a basement to give more living space*



**JOHN NEWTON**  
**WATERPROOFING SYSTEMS**  
*Protecting buildings, since 1848*