



# INSTALLATION GUIDE FOR WYKAMOL CAVITY DRAIN MEMBRANES, AQUA CHANNEL AND SUMP PUMPS



**TO BELOW GROUND STRUCTURES**





# WYKAMOL

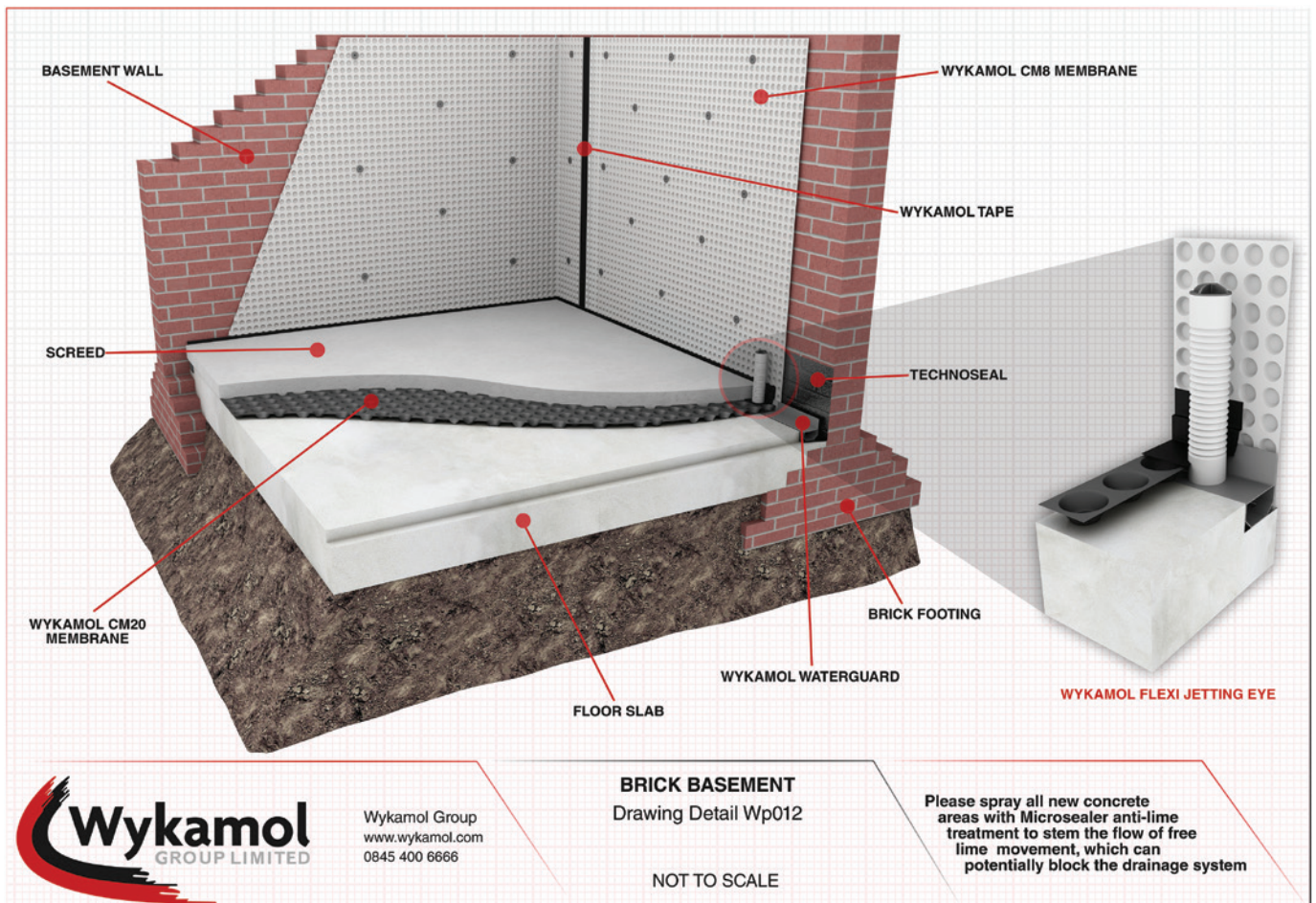
MARKET LEADER IN PROPERTY RENOVATION AND REPAIR

## IMPORTANT NOTE

Properties and structures vary in design and form of construction. Any specification is therefore, unique to individual properties and to any special or particular circumstances encountered that may relate to the structure. The guidance notes set out below have been put together as a 'guide only' in order to help the specifier and membrane installer.

Therefore, the information given in this text and that which is provided in any product data sheet issued by Wykamol Group Ltd is made without prior guarantee, as conditions of use and labour involved are beyond our control.

All waterproof designs and installation should be made in accordance with BS8102 2009 Code of practice for protection of below ground structures against water from the ground and ground gas and in conjunction with the manufacturer's instructions.





For over 80 years the Wykamol Group has been the market leader in the field of property renovation and repair. Starting way back with our founder devising a chemical treatment for the eradication of insect attack in timber, our product range has evolved and grown to become the broadest range of property repair and renovation solutions under one umbrella anywhere in the UK.

## SITE SURVEY AND DESIGN CONSIDERATION

### Membrane Suitability.

Wykamol cavity membranes can be applied to almost all sound building structures below ground, which are affected by dampness or water ingress. However, they are not recommended for installation in the following situations.

- Where the cavity membrane system cannot be drained, otherwise the system will fail. (See drainage facilities and guidance notes)
- Fixed onto internal flat soffits unless the soffit has an existing fall or a fall can be formed at the design stage (in the case of new build construction) or created using sand & cement renders, otherwise water would pond behind the membrane and build up. The weight of water would inevitably burst the membrane seals, which are not designed to hold water under pressure.
- Under or on top of concrete/stone staircase treads & risers, because of the many convoluting junctions and angle details. In such circumstances where cavity drain membranes cannot be used successfully, we recommend our Wykamol cementitious tanking system or using an epoxy vapour barrier as part of a combined waterproof design.

### Water ingress.

BS 8102 2009 states, although structures with Type C protection are designed to control and manage seepage into a structure, where this is unacceptably high the water resistance of the structure should be improved prior to the installation of the Type C protection, by the application of either Type A or Type B protection.

Wykamol cavity drain membranes are designed to deal with water ingress, but any large large volumes of water would require remedial work to stem or control, prior to the cavity drain system being installed.

This can be achieved as follows:

- If water ingress is localised then the application of Wykamol Hydraplug plugging compound can be used in accordance with the manufacturer's instructions.

- If water ingress is more general and cannot be dealt with by localised plugging, consideration should be given to installing Wykamol Universal waterproof Mortar combined with Wykamol Hydradry Tanking Slurry in accordance with the manufacturer's instructions.

New concrete should always be treated with Wykamol Lime-Sealer prior to any installation of cavity drain membranes, free lime can block up drainage systems.

### Drainage Types

There are two principle forms of drainage, these are Natural (gravity feed) and Mechanical (Sump stations) and can be used in conjunction with falls or drainage channels depending on the design of the cavity drain systems. However, when assessing the type of drainage facility to be used and because the drainage is the key to the success of the cavity membrane system, it is important to take into consideration the following points.

**Natural** - Where drainage with gravity is feasible within the bounds of the property or at a point of exit from the property. It is most important to establish that the 'internal drainage' is in good working order and to question as to whether the local drains are connected to public drains or a soakaway. Drains can and do block up or back up causing flooding, including escape of foul waste and pungent smells.

Soakaways can also fill up during periods of heavy rain, which would lead to flooding and failure of the cavity membrane system. In situations where the Wykamol membrane installer finds that the only possibility of draining the cavity membrane is into a foul/soakaway system or his client so instructs, then liability for the waterproofing system should therefore, be excluded in the event of blockage of the foul pipes or the soakaways filling up. Wykamols advice is to always recommend the inclusion of twin sump stations.

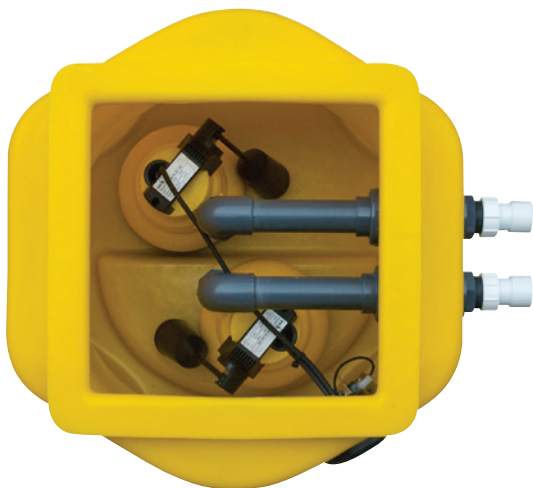
**Mechanical** - (sump/pump station) Wykamol produce a wide number of different types of sump/pump stations depending on the waterproof design, amount of water ingress, pump head, size of outlet pipe and horizontal pipe runs, each sump station would be unique to each property or waterproof design. Please contact our technical department for further information.

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Sump stations usually but not always conform to the following.

**Single sump station** - The chamber comprises of a polyethylene pre-formed sump chamber with a structural lid. The submersible pump is controlled by an automatic integral float switch and comes with a non-return valve and a high-level water alarm that warns of mechanical or power failure. However, Wykamol would always recommend a twin pump system.

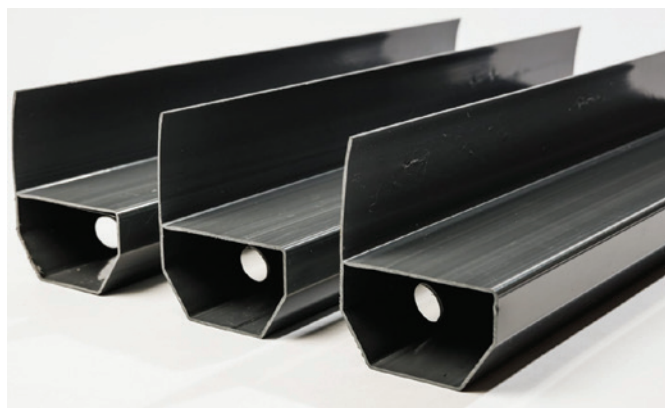


**Twin sump station** - This consists of two pumps in the sump chamber. This secondary pump would provide a backup pump in case of mechanical failure of the principal/primary pump. Consideration should also be given to the installation of a battery back-up system in case of a power failure and is also available from Wykamol.

**Drainage Channel** - (Pre-formed peripheral Conduit) Wykamol perimeter channel which is a P.V.C drainage conduit specifically designed for the control of water ingress in below ground situations. It is installed at the vulnerable wall/floor junction to the soil retaining walls or, around the perimeter of the floor slab to be used in most waterproofing situations, and is particularly suited for use in conjunction with Wykmaol Cavity Drain Membrane systems.

Water entering the building through the walls is controlled behind the Wykamol Membrane and diverted to the perimeter channel

at the base of the wall. The water enters the perimeter channel through predrilled drainage holes and must then be diverted to a suitable drainage point, either natural or mechanical, the perimeter drainage is set dead level and not to falls.



Flushing points (cleaning ports) should also be incorporated into the perimeter channel. Wykamol also manufacture a floor drain, similar to the perimeter channel, but with no upstand, design will dictate which type of channel is required. For example, if the channel cannot be placed exactly at wall/floor junction, the floor drain channel can be installed off or away from the junction.

**Concrete floor slabs** - In new build or whenever floors are being remedially replaced, it is essential that there are no undulating surfaces or depressions in the new floor slab and floor slabs are laid/installed as level as possible. If an existing concrete solid floor is to be retained, undulations, dishes or depressions must be taken into consideration and a self-levelling screed used to bring the floor slab level. In all cases the floor should always be flood tested, to ensure that all water finds its way to the water collection point, before laying the cavity membrane. In some instances, depending on what design or under floor drainage is being considered, a sloping floor slab can be incorporated, please contact our technical department for further advice if required.

**NB** wherever possible (head height permitting) we recommend that Wykamol CM20 floor membrane be used on floors. This is because the CM20 membrane has a far greater drainage capacity than the CM8 floor membrane and significantly reduces the risk of build-up (depending on the design) if water is being moved

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over the floor slab. We would recommend that the waterproof design includes installation of the perimeter drain or floor drain, therefore reducing any need to move any water ingress that may occur over floors/under the membranes.

### Undermining Structures

**Sump Chambers** - consideration must be given to the implications of fitting sumps in the ground, e.g. where unstable elements are present, such as chalk or sand. The installation of a perforated sump chamber could cause washing away and potential undermining. Therefore, in such cases, only sealed sumps should be installed and structurally held in place by concrete etc, with the water collection limited to that entering from the drainage channels. The final decision on the sump type in cases where ground conditions are unknown should be delayed until excavation is undertaken. **Important note;** if there is any concern as to whether there is a risk of de-watering the ground to a condition whereby the structure as a whole could or maybe undermined, then advice should be sought from a chartered structural engineer.

**Existing Plasters** - plaster that may be affected by being closed in behind the cavity membrane such as gypsum or lightweight plaster or where the existing plaster is loose or de-bonding should be removed from walls/soffits prior to membrane application. Only where dense and well-adhered sand and cement renders are present and where removal may cause unwanted structural damage to substrates can be left in place.

### Substrate Preparation

One of the benefits of using cavity drain membrane is that in general, very little preparation to the

substrates are required and although the cavity membrane is flexible and does not need a perfect surface for application, the following points need to be considered.

- Unsound materials on the surface like renders or plasters need to be removed. (See also heading existing plasters). Any organic materials such as wallpaper, timbers, skirtings, fixing grounds etc need to be removed.
- A specialist timber treatment contractor should investigate any fungal decay/infestations in timbers. Also, timber that

is in contact with damp masonry should be removed or physically isolated.

- Excessively uneven wall and floor surfaces should be dubbed out/levelled especially if timber battens are to be fixed to support dry lining finishes. Where a wooden floor finish is required such as T&G flooring grade chipboard, it must also be borne in mind that the membrane will follow the contours of the floor. Therefore, to achieve a flat surface, any depressions or undulations must be levelled out to avoid undue movement in the floor finishes. (covered in floors above)
- Substrates must be free of sharp protruding objects and debris etc that can damage the membrane. We would also recommend that where mould, mosses, lichens and algae, has affected substrates, a surface sterilisation with Wykamol Microtech Biocide should be used.
- Loose, friable or defective masonry which are to be retained should be repaired to ensure a solid fixing.

### Membrane Installation - (internal applications in below ground structures)

**Internal Basement Structures** - set out below is a generic method of installation, which can be used to apply; Wykamol CM8 and CM20 cavity drain membranes continuously between wall and floor.

**NB** it is assumed by this stage, that the site and design considerations mentioned earlier in this document, have been assessed and the type of drainage facility chosen has been tested. The installation of Wykamol CM plaster mesh and Geo Drain are covered under a separate heading further in this document.

Wykamol wall membrane can be installed over a wide range of substrates in varying situations - walls, floors, ceilings, soffits, etc. However, before the System is installed, the area must be assessed to determine what preparation is required:

#### Important preparation.

- a. All timber fixtures and other organic material must be removed to prevent risk of fungal or bacterial growth behind the System, e.g. skirting boards, timber plates, old wallpaper etc. Structural repairs or works to remove items likely to puncture the membrane must be carried out if evidence of

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rot or mould exists, this should be treated with Wykamol Microtech Biocide.

- b. If the walls are uneven or areas have deteriorated, any large depressions should be levelled and made good to ensure a solid fixing.
- c. When assessing floor applications, consideration should be given to the type of finish that is required.
- d. The floor must be cleared of oil, loose material and any sharp edges should be levelled out. Any holes or severe depressions should be filled. When a timber floor is preferred, then more consideration should be given to achieve a flat substrate prior to laying the membrane. This will relieve any undue movement when fitting a final floor finish.
- e. The design of the drainage system should be agreed, implemented and tested before covering by the membrane. The exception to this is where the Wykamol Perimeter Channel is sat above the slab or raft. Flood tests should be made to check the slab or raft is flat and level prior to the installation of the Perimeter Channel, but the system can only be fully tested once the floor membrane and some form of resistance to water pressure is placed above the membrane such as temporary boards with bags of ballast or sand placed above, or the finished screed floor covering.
- f. When fixing the system to flat soffits you must ensure that there is a fall to create proper drainage and prevent ponding. Any sagging of the membrane should not be great enough for ponding to take place.

### Wall Application

The Wykamol CM8 or CM3 wall membrane is fixed with the studs against the wall to create an air/depressurisation gap. If the CM8 Mesh or CM3 Mesh is used the mesh faces the room space, or towards the installer.

The membrane can be fixed either vertically or horizontally. When making this decision, you will need to take into account the size of the area to be lined, and the height of the walls relative to the width of the membrane. Horizontal fixing requires fewer cuts and jointing but the full roll is very heavy

at first. Vertical fixing has very much lighter strips to fix, but requires that each of these is taped back together again. You may find that vertical fixing is easier, but requires more Wykamol butyl Tape for jointing.

The membrane is fixed to the wall using the Wykamol sealed brick plug fixing. The Sealed fixing should have a waterproof seal applied to the collar using a soft rubber sealing washer or Wykamol Rope fitted to the plug for sealing to the wall membrane.

Place the wall membrane in position as level as you can judge by eye. Using a 10mm drill bit, drill through the centre of a stud near the top and edge to a depth greater than the fixing. The fixings should never be to near edges or joints. The fixing is then hammered into the pre-drilled hole until the plug sits flush in the stud. The rubber washer re-seals the hole. Level the membrane using the spirit level or laser level if used, and fix another plug about 1m along at the top of the sheet.





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The membrane will now be hanging level to the wall.

If you are fixing horizontally, continue fixing every 1m until you have reached the end of the roll or you have covered all of the wall(s) to be treated. It is very important to regularly check the level. If the membrane is not level, you may well find that the membrane is kinked and looks unsightly, it will also dive down when fitted around corners.

If you are fixing vertically, hang each subsequent sheet by the two fixings as described above. The subsequent sheet should overlap by at least the width of the flange of the new sheet using the Wykamol tape. You may find it easier to interlock the first stud of the new sheet to the last stud of the last sheet as this helps to keep the new sheet level. If sealing by interlocking stud to stud joints, this should be a minimum of 4 studs as the overlap and seal using the Wykamol rope. The joints, seals or overlaps have to be sealed with Wykamol Butyl tape, rope, overtape or corner detail depending on the type of joint/seal.

Always clean both edges of the membrane before making a seal.

Clean the flange and studs of both sheets of membrane at the joints/overlaps with a clean rag or wash with clean water, do not use soap or detergents, as these will leave traces on the membrane, which may affect the seal at a later date, or make sealing more difficult.



When you have fixed the new sheet level with the correct overlap, pull off the backing paper from the tape or rope and peel down whilst applying pressure to the flange or stud joint.

Once all the backing paper has been removed, apply more pressure with the palm of your hand to further seal the whole of the joint. A Hot Air Gun should be used to help sealing in cold or damp conditions.

**Note.** A warm air gun can be used in cold or damp conditions, to help seal the joints, seals and overlaps, rubbing a clean cloth or wooden roller over the joint where it has been warmed, be careful not to use too much heat

### Fixing Centres

Once the Wykamol membrane is hanging off the top fixings the rest of the Sealed fixing plugs need to be fixed.

The spacing of these fixings is dependent on the type of wall finish to be used:

Timber battens may require 400mm centres vertically and 600mm horizontally.

Barrel Vaults require tighter centres. (250- 300 mm centres until the shoulder of the arch) to stop any water ponding behind the membrane.

Fixed metal track (many types) 600mm centres vertically and 800mm horizontally.

Brick or block walls restrained to the retaining wall using ties should have the fixings at centres to provide the correct number of restraints at the correct centres.

Free standing timber and metal frames and free-standing block walls do not require specific fixing centres. In these cases, use sufficient fixings to ensure the membrane is neat and tidy and reasonably tight to the wall, especially around corners and reveals.

Always keep fixings away from your joints, seals and overlaps.

When fixing the system to flat soffits (with a fall) you must ensure that enough fixings are used to keep the membrane tight to the soffits with no sagging.

All fixings should be in line both horizontally and vertically.

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## Battens

Battens should be pre-treated and of a minimum dimension of 25mm x 38mm although you may find that 25mm x 50mm offers better fixing at the edge of the plasterboard.

The battens can be fixed into the fixing plugs without piercing the membrane, by using size 10 (5mm) self-tapping screws. The plug will take 30mm of screw, so be sure to purchase the correct length for the thickness of batten.

Over-tightening of over length screws may loosen the plug depending on the substrate. Be very careful not to puncture the membrane when drilling and fixing the battens. Battens should be fixed so that all plasterboard edges are supported. Use a timber treated batten or treat with a preservative. (Wykabor Cut End) to protect cut battens.

Once the battens are fitted into position, plasterboard can be fixed to them using screws or clout nails or preferably plasterboard screws. Care should be taken not to exceed the depth of the battens with the screws, and thereby puncture the membrane.

## Alternate Fixings

Other finishes may be employed depending on the requirements of the specifier.

**Free standing frames** - This method should be employed if the wall is undulating, as with some stone structures or where space loss is a secondary consideration. The frame would be fixed to the soffit and the floor finish as required.

With the increasing requirement of insulation to meet current U values, the use of free-standing frames (metal or timber) are becoming more popular, the thickness of insulation required is often in excess of the thickness of the frame, and so no wall thickness is not lost when using this method.

Because the frame is free standing and has no relationship with the wall membrane, very few fixings are required and so this wall finish above allows for the fastest and most efficient method of fixing membrane to the wall.

**Proprietary Fixing Systems** - Fixing systems such as Gypliner, Lafarge or others can be used with Wykamol membrane. It is also possible to use metal profile systems when constructing new internal walls. These can be fixed without bridging the membrane.

**Internal Block Walls** - If preferred the system can provide a water and vapour proof barrier, and then be lined with a block or brick inner skin.

## Services

If there are any services through the wall and floor, the membrane can be cut and trimmed around them and the gap filled and sealed using Wykamol Rope as a gasket and Corner Detail Tape over the service pipe and membrane to create a neat seal. If necessary, a patch of membrane or plain DPC (PVC) is laid over and Sealed to the service with Wykamol Rope and around its perimeter with Corner Detail Tape.

It should be noted that protrusions through the floor slab/raft should be avoided wherever possible as they create weaknesses that may allow unnecessary water ingress depending on the design of drainage.

The specified floor finish can now be laid directly over the floor membrane, which must not be punctured by any fixings through the floor. When a timber floor finish is preferred you must allow an expansion gap around the wall edge. Speak to the supplier of the floor finish to confirm the correct size of this expansion gap.

**Flat Soffit Application using Wykamol cm8** - As previously mentioned earlier in this document,

Wykamol cavity drain membrane should not be fixed to the underside of a flat soffit unless a fall exists or a fall can be created in the soffit itself. The soffit should first be measured to establish the desired lengths or widths of membrane required to cover the area and then a further 200mm of membrane should be added to the measurements, to allow for the membrane to be lapped down all the peripheral walls.

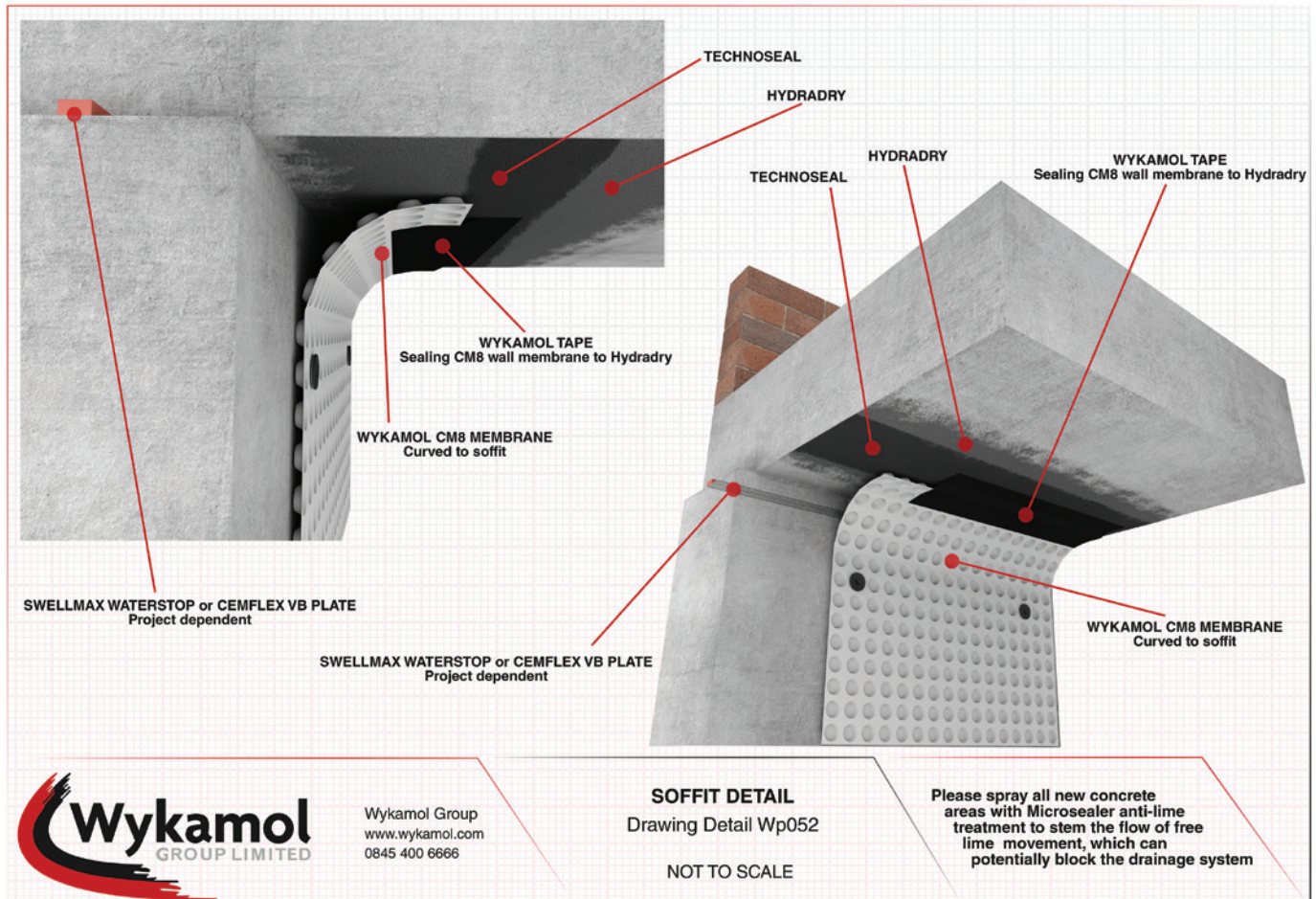
Apply sealing rope to the Wykamol Brick plugs as previously described. Then around the perimeter edges of the membrane, fold the membrane inward 200mm to form a positive creased and create a down lap.

Offer the membrane up to the soffit and position the down lap creases into the junction between the soffit and wall.

Drill and fix enough Wykamol brick plugs through the membrane and into the soffit to hold the membrane in place with the studs against the soffit.



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**NB** where ever the soffit membrane meets the wall, a 200mm down lap must be allowed and formed as above.

Offer the next length/sheet of membrane up to the soffit and position the flange over the studs of the first sheet, fix and secure the membrane as described above. Repeat this operation until all the membrane sheets are held in place.

Thoroughly clean the flange and the studs where the seal is to be made as previously described for wall application. Apply Wykamol sealing tape to the stud area, which the flange will cover and press home onto the area between the studs.

The membrane should now be sealed to form one continuous sheet, Wykamol sealed brick plugs can now be fixed through the membrane, in positions to accommodate the chosen dry lining system. **NB** it is important to ensure that the membrane is taut (approx. 250mm - 300mm centres) against the soffit and doesn't

sag, otherwise water ponding will occur and the membrane/seals could fail.

Internal and external corners are formed in exactly the same way as that which has been previously described in 'Floor application using Wykamol cm8 with membrane upstand' except in this case, they will be formed in reverse and be upside down.

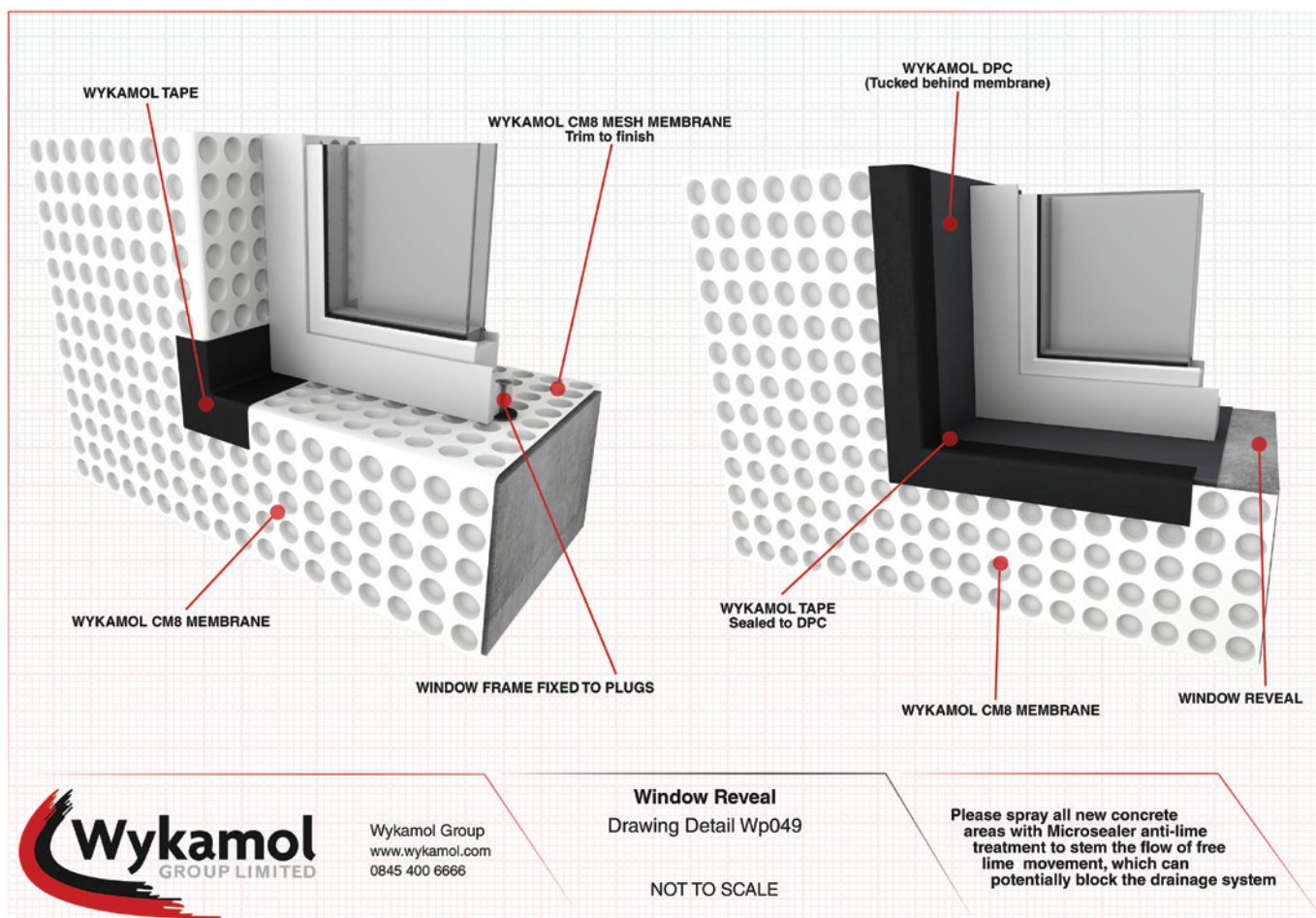
**Vaulted ceilings** - Always fit down the vault, never across the vault, otherwise all the joints will be in direct contact with any water ingress. Ensure that all the joints are made on the dry side of the membranes.

Always use the Wykamol sealed fixings at 250mm-300mm centres, to keep the membrane tight and stop any water build up, any water ingress needs to flow quickly to the drainage at the foot of the walls.

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**Doors and Windows** - Door and window frames and timber surrounds should always be removed to enable Wykamol membrane to be extended around or into door and window reveals to maintain the continuity of the waterproofing system and to also provide a physical barrier between the frames and damp masonry.

In situations where the Wykamol membrane would restrict or limit the profile of replaced frames, then Wykamol wall/floor junction or Wykamol DPC plain can be used to line and protect the reveals instead. An overlap of the DPC and membrane should be formed to create a sealed overlap.



## Floor membranes

**Preparation** - Please refer to our section on preparation and attend to any preparatory work prior to installation. Always clean both edges of the membrane before making a seal.

**Drainage Requirement** - To comply with BS8102 2009, you must assume that the structure will be subjected to water ingress at some time.

**Methods of Drainage** - The drainage must effectively remove all water from below the membrane and take the water to a point of discharge such as a sump station or a form of safe natural drainage. Standing water can block the membrane with silt or lime scale so it is important for water to flow uninterrupted to the drainage point. Wykamol Perimeter drainage should always be used in conjunction with cavity drainage floor membranes to form part of your design and installation guarantees.

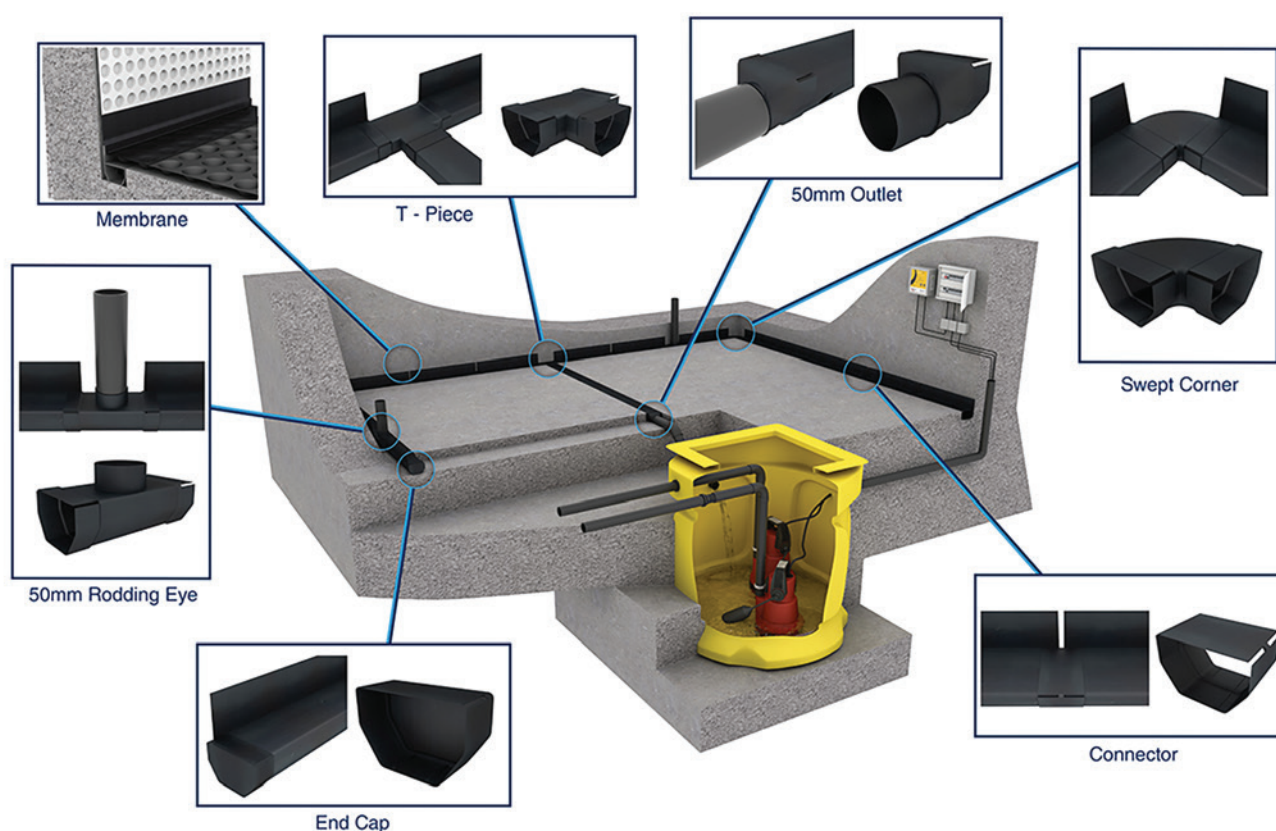


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### Wykamol Perimeter Drain & Floor Drain -

Perimeter Drain and Floor drain sits in at the wall/floor junction or just off and collects water from behind the wall membrane and receives water at the wall-floor junction or close to the junction.

They are a designed method of removing water as it can interface with sump chambers, stack pipes, gullies, waste pipes etc. Perimeter Drain and Floor Drain can be serviced by inserting flushing points into the system mostly on each change of elevation for maintenance purposes.



### Central Drainage

When a new slab is being laid this presents the opportunity to install a Central Drainage system if required as part of the design. A network of 100mm pipe work laid to evacuate water from the slab under the CM20 floor membrane to a groundwater pump station. Please refer to our Technical department if unsure.

Wykamol Lime-Sealer should always be applied to new slabs. This will lock in free limes present within the slab.

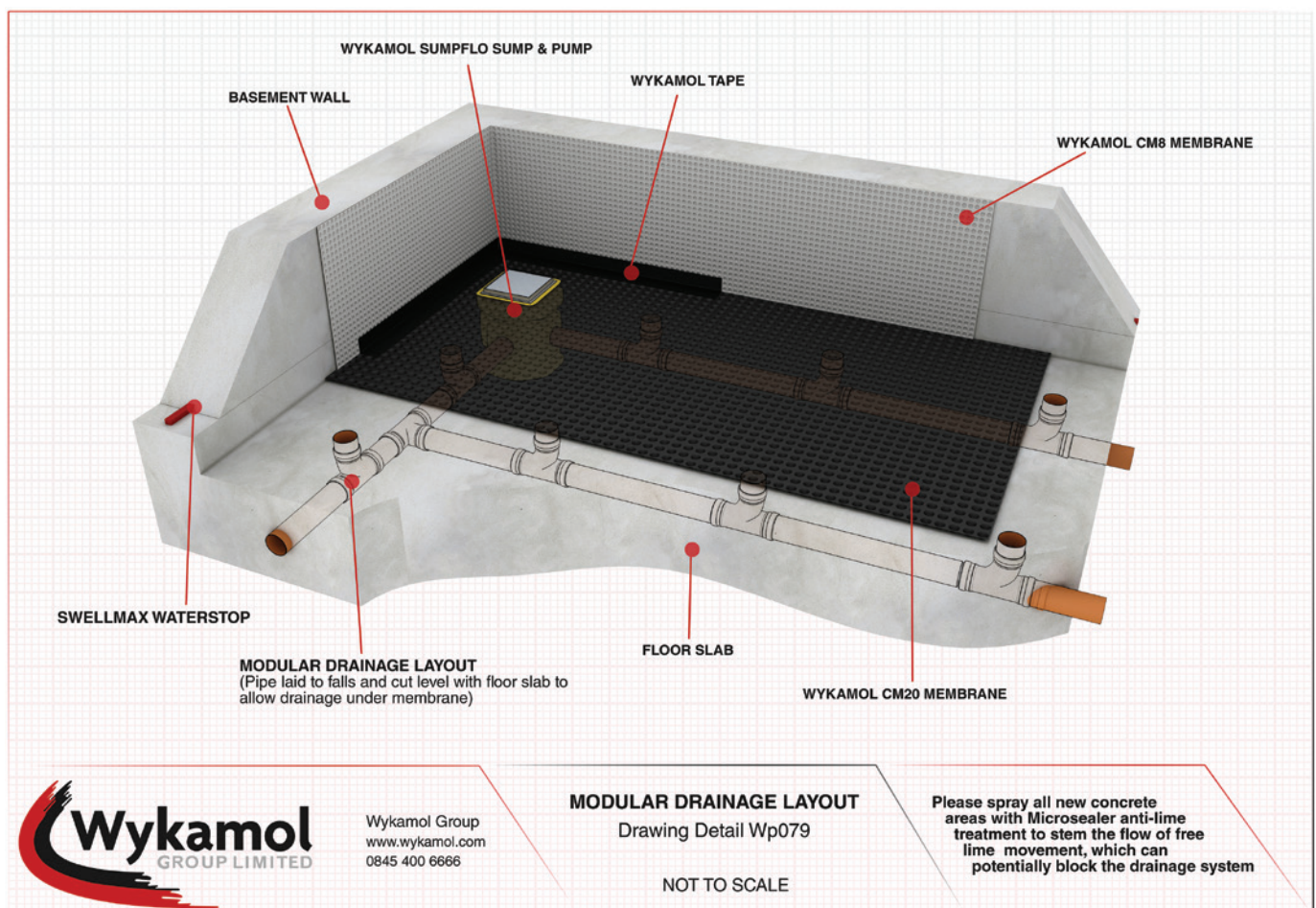
**Floor application using CM 20-** Once the membrane has been fitted to the walls and before the dry lining system is installed, the floor membrane needs to be laid. As mentioned earlier in this document CM20 membrane is recommended on floors unless there is a head height restriction, in which case WYKAMOL CM8 can be used, but the installation of CM8 differs slightly from that of CM20 and will be explained.



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**Installation of Wykamol CM8 floor membrane** - Starting at one side of the room, unroll the membrane with the studs down and cut to fit the room as one would a carpet, seal to the perimeter channel or return up the wall membrane approx. 150mm and seal with Wykamol Corner detail tape depending on the design. The next membrane width is rolled out so that the flanged edge overlaps onto the edge of the previous roll of

membrane. Clean both edges. Wykamol Tape is then applied to the edge of previous roll of membrane with the backing paper still intact. Check the two widths for alignment, with the flange covering the backing paper. Starting from the middle of the joint, remove the backing paper and press down on the joint sealing the two sections together. This process is repeated until all areas are covered.



Where the floor membrane is required to be jointed to horizontal DPC's through internal and external walls, these joints should be overlapped and sealed with Wykamol Corner Detail Tape.

Ensure both surfaces are clean and dry before attempting to make these joints. If there are any services up through the floor, the membrane can be cut and trimmed around them, and the gap filled and sealed using the Wykamol range of tapes. If necessary, a patch of membrane or plain DPC (PVC) is laid over and sealed to the service with Wykamol Rope and around its perimeter with

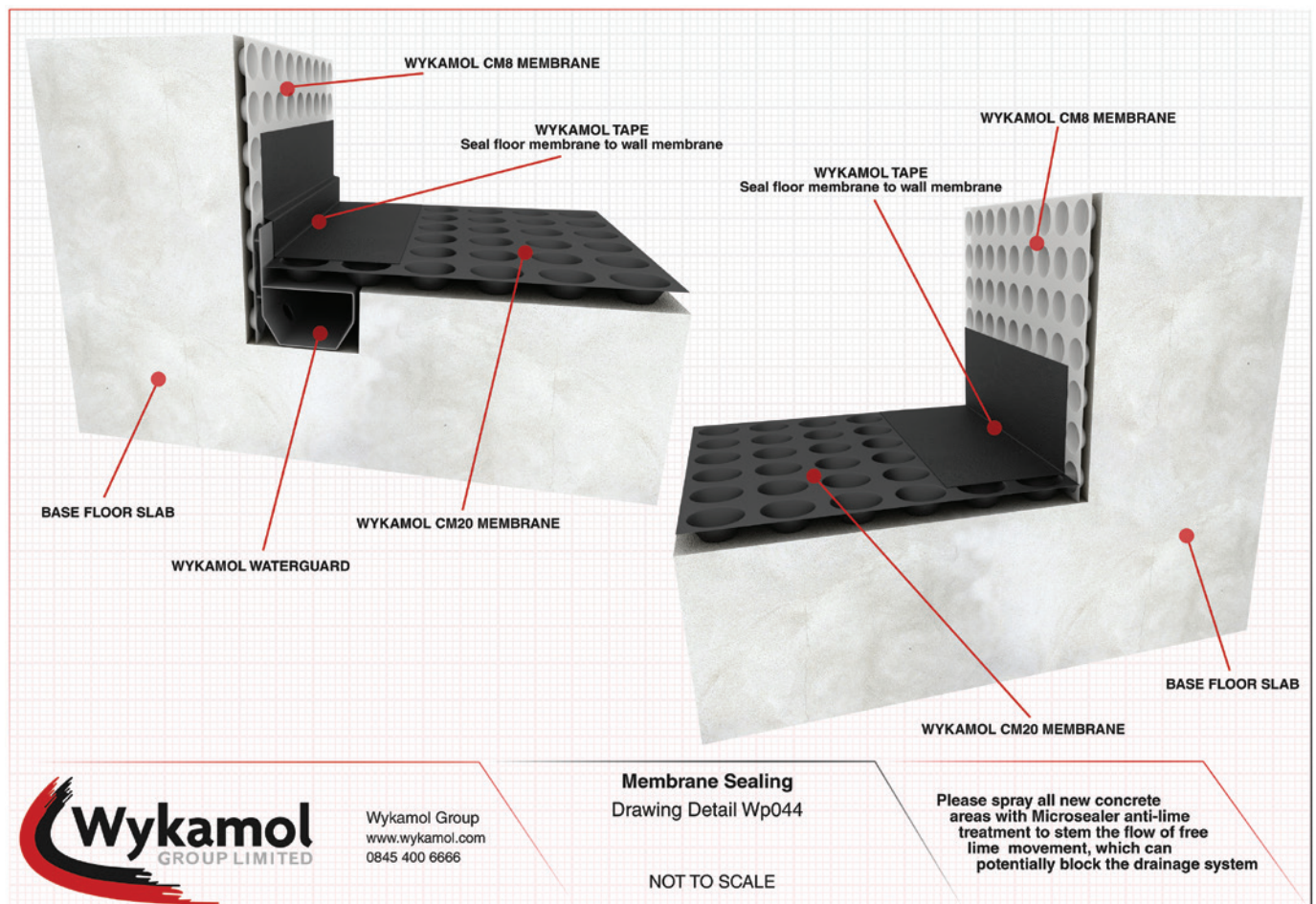
Corner Detail Tape. It should be noted that protrusions through the floor slab should be avoided or kept to a minimum wherever possible as they create weaknesses that may allow unnecessary water ingress.

The specified floor finish can now be laid directly over the floor membrane, which must not be punctured by any fixings through the floor. When a timber floor finish is preferred you must allow an expansion gap around the wall edge. Speak to the supplier of the floor finish to confirm the correct size of this expansion gap.

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**Installation of CM20 membrane to the floor** - Starting at one side of the room, unroll the membrane with the studs down and cut to fit the room as one would a carpet, seal to the perimeter channel or the CM8 wall membrane using Wykamol Corner detail tape depending on the design. (do not return the CM20 up the wall membrane) The next membrane width is rolled out so that the flanged edge overlaps onto the edge of the previous roll

of membrane. Clean both edges. Wykamol Tape is then applied to the edge of previous roll of membrane with the backing paper still intact. Check the two widths for alignment, with the flange covering the backing paper. Starting from the middle of the joint, remove the backing paper and press down on the joint sealing the two sections together. This process is repeated until all areas are covered.



Where the floor membrane is required to be jointed to horizontal DPC's through internal and external walls, these joints should be overlapped and sealed with Wykamol Corner Detail Tape.

To form internal and external angles using Wykamol wall/floor junction, the wall/floor junction is cut to the centre line and bent either inwards or outwards depending on the angle. The edges are then sealed with tape to the membrane in the same manner described above. If the one-sided adhesive corner strip

is chosen to link the floor and wall membrane, the corner strip is folded in half along the length of the piece to be used and positioned with the crease into the angle as described for the wall/floor junction. Once correctly aligned, carefully pull off the backing paper and press firmly out with the palm of the hand onto the floor and wall membranes. Internal and external angles can be formed in the same manner as the Wykamol wall/floor junction but because it is a one-sided self-adhesive material and will stick to itself, no additional sealing tape is required.



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Ensure both surfaces are clean and dry before attempting to make these joints. If there are any services up through the floor, the membrane can be cut and trimmed around them, and the gap filled and sealed using the Wykamol range of tapes. If necessary, a patch of membrane or plain DPC (PVC) is laid over and sealed to the service with Wykamol Rope and around its perimeter with Corner Detail Tape. It should be noted that protrusions through the floor slab should be avoided or kept to a minimum wherever possible as they create weaknesses that may allow unnecessary water ingress.

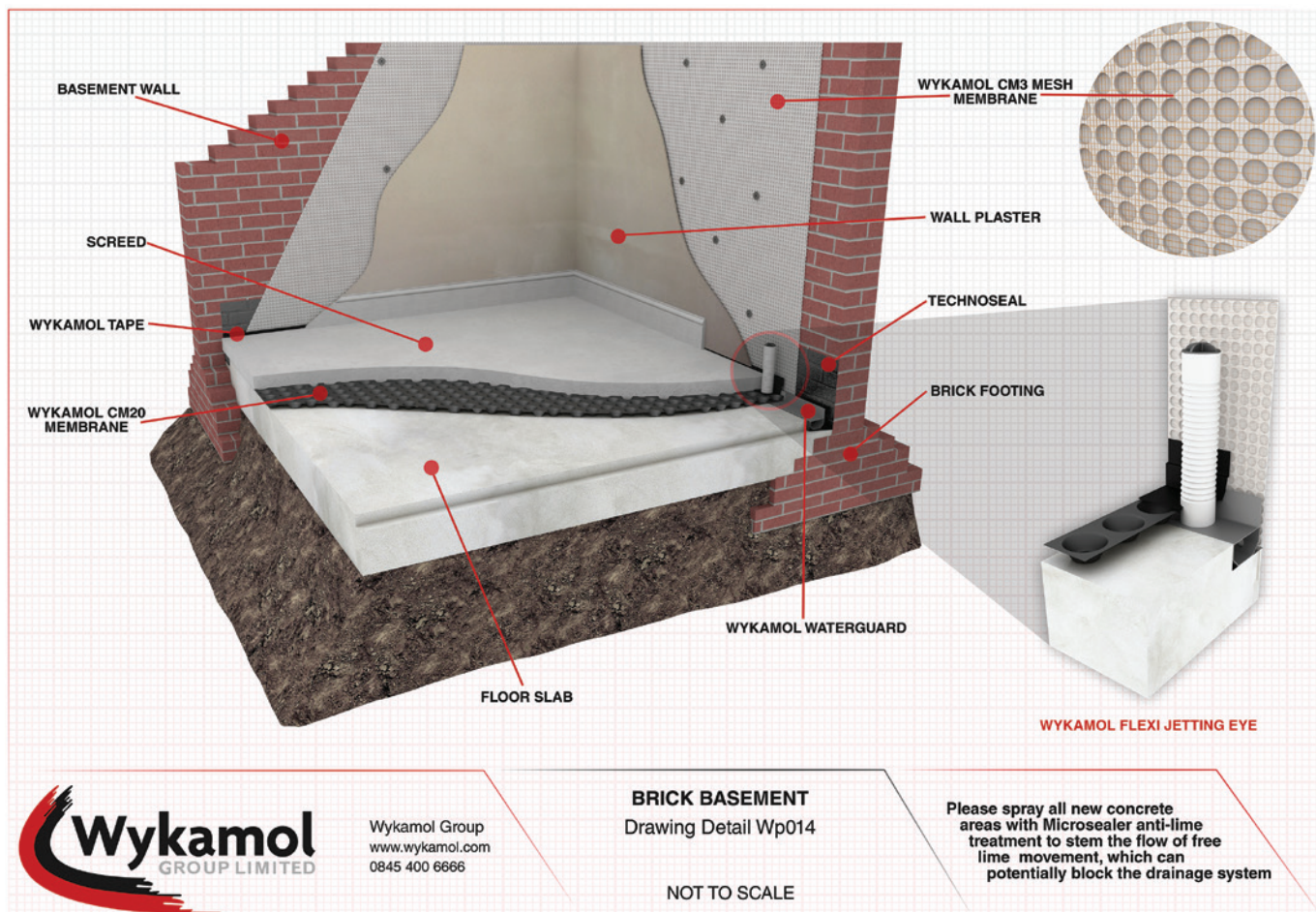
Where knowledge of the ground conditions including the water table is unclear and the condition of an existing slab to be used is uncertain, CM20 should be used as either the main floor membrane or as a lost drainage layer with another floor membrane above acting as the vapour control layer.

It is very rare for water to pass through a solid concrete slab, or concrete raft, but where the slab or raft is of questionable quality it is possible for water to pass through cracks in a poorly constructed floor. If the quality of the slab is questionable, CM 20 should be used, or replace with a new concrete slab. Seek a structural engineer's advice.

In 'at risk' sites and head height allowing, it is highly recommended to install CM20. This product has an air gap volume equal to 14Ltrs/m<sup>2</sup> and a greater resistance to hydrostatic pressure.

Where the CM20 is to be used a lost drainage layer, advice should be sought with our technical department.

## Installation of CM8 Mesh and CM3 Mesh plaster membranes



Wykamol Group  
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## FOR WYKAMOL CAVITY DRAIN MEMBRANES, AQUA CHANNEL AND SUMP PUMPS TO BELOW GROUND STRUCTURES

Wykamol mesh membranes are used in both new build and retro fit basements where space is at a premium and or the choice of finish can be render, plaster, or dot and dab plaster board.

It is also used to remediate above ground damp walls and offer insulated finishes on cold external walls above ground.

Wykamol CM8 Mesh or CM3 Mesh should not be used on floors.

Important preparation.

- a. All timber fixtures and other organic material must be removed to prevent risk of fungal or bacterial growth behind the System, e.g. skirting boards, timber plates, old wallpaper etc. Structural repairs or works to remove items likely to puncture the membrane must be carried out. If evidence of rot or mould exists, this should be treated with Wykamol Microtech Biocide.
- b. If the walls are uneven or areas have deteriorated, any large depressions should be levelled and made good to ensure a solid fixing.
- c. When assessing floor applications, consideration should be given to the type of finish that is required. The floor must be cleared of oil, loose material and any sharp edges should be levelled out. Any holes or severe depressions should be filled. When a timber floor is preferred, then more consideration should be given to achieve a flat substrate prior to laying the membrane. This will relieve any undue movement when fitting a final floor finish.
- d. The design of the drainage system (if below ground) should be agreed, implemented and tested before covering by the membrane. The exception to this is where the Wykamol Perimeter Channel is sat above the slab or raft. Flood tests should be made to check the slab or raft is flat and level prior to the installation of the Perimeter Channel, but the system can only be fully tested once the floor membrane and some form of resistance to water pressure is placed above the membrane such as temporary boards with bags of ballast or sand placed above, or the finished screed floor covering.
- e. When fixing the system to flat soffits you must ensure that there is a fall to create proper drainage and prevent ponding. Any sagging of the membrane should not be great enough for ponding to take place.

### Fixings for CM8 Mesh and CM3 Mesh membranes.

Mesh membranes should be fixed to the walls using Wykamol Plaster Plugs above ground and Wykamol sealed brick plugs below ground. An 8mm drill bit is needed for the plaster fixings and a 10mm drill bit for the sealed fixings and drill to a depth greater than the length of the plug. In below ground environments plug fixings should be sealed around the collar using preformed waterproof seals or Wykamol Rope subject to how wet the substrate is, or working on vaulted arches.

The membrane must fit tight against the structure with no voids or hollow areas left between the wall and the membrane, as this could cause bonding problems between the membrane and the plaster/render. Care should also be taken at corners to ensure the membrane is fitted tightly into the corner so to avoid snagging or tearing with a trowel.

Above ground and on non-soil retaining walls Plug fixings do not necessarily or always need to be sealed.

Fix in a square at 250mm centres (300mm maximum for Dot & Dab). All fixings will should normally be a maximum of 250mm from each other.

It is essential fixings are no farther apart than this specification to avoid rippling of the membrane and subsequent cracking of the applied finish. The membrane needs to be tight to allow for finishing plasters & Dot & Dab dry lining over the membrane

Where a Dot and Dab finish is being applied centres may in some cases be reduced to 300mm centres.

### Sealing below ground CM8 Mesh membrane.

Flange to stud – Use Wykamol Tape

Dimple to stud – Use Wykamol Rope

Overlap joints – use Wykamol Fleece/Fibre tape or Corner detail

### Sealing above ground (damp) CM3 Mesh membrane

Butt to Butt Joint or over tape – Use Wykamol Fleece/Fibre Tape

**Dry lining** - In the remediation of a damp wall the CM3 mesh membrane can be installed in a dry lining finish using Dot & Dab.

On the dry side of the membrane the use of a vapour check plaster board product is not recommended to guard against the effects of interstitial condensation.

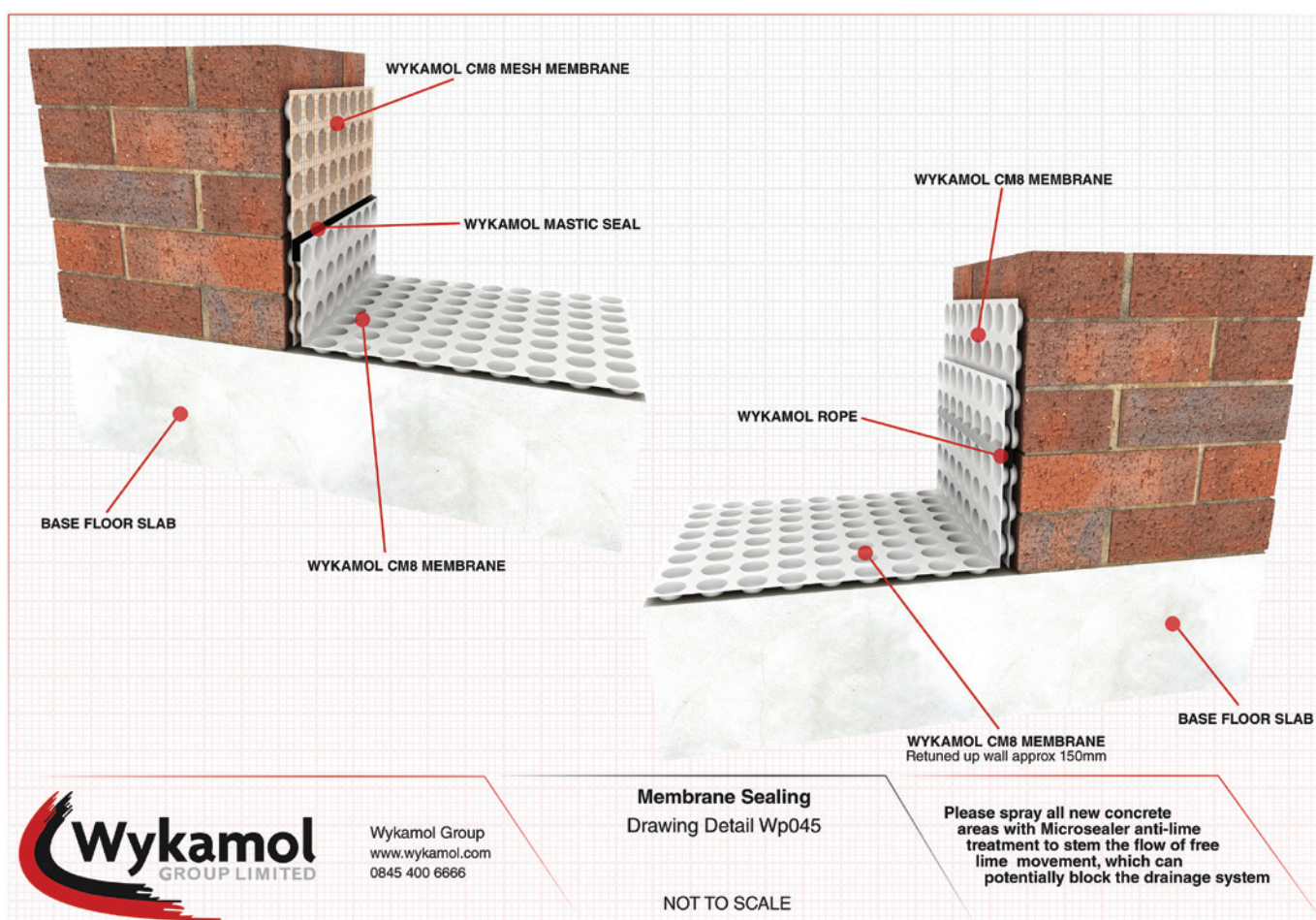
# INSTALLATION GUIDE

**Finishes** - Wykamol mesh membrane products can be finished by rendering, plastering or applying dot and dab adhesive and plaster board.

Mesh membranes can be finished in accordance with normal plastering techniques (BS 5492:1990) using proprietary lightweight plasters e.g. Tilcon 'Whitewall', Thistle 'Carlite Bonding', or a 6:1:1 sand, cement, lime render.

If you are using lime mortars, please call our technical department for further advice as we may need to speak to the lime mortar manufacture.

**NB** Manufacturers recommended drying times may vary according to atmospheric conditions.



## Central Drainage

For internal cement renders the mix to be six parts clean sharp sand/one-part lime or plasticizer/one-part cement. A two-coat application is recommended allowing 7-10 day between coats. Drying time is important because shrinkage cracks may appear.

Note: All plasters and renders etc. must be to a minimum total

depth of 15mm. The undercoat should be applied with firm pressure to the depth of the studs and cover the mesh and be well scratched by means of a wire scratcher. When the scratch coat has set, the floating coat should be applied to a final overall finish of 15mm and lightly scratched to provide a firm key for the final coat, which should be to a minimum thickness of 3mm.



## FOR WYKAMOL CAVITY DRAIN MEMBRANES, AQUA CHANNEL AND SUMP PUMPS TO BELOW GROUND STRUCTURES

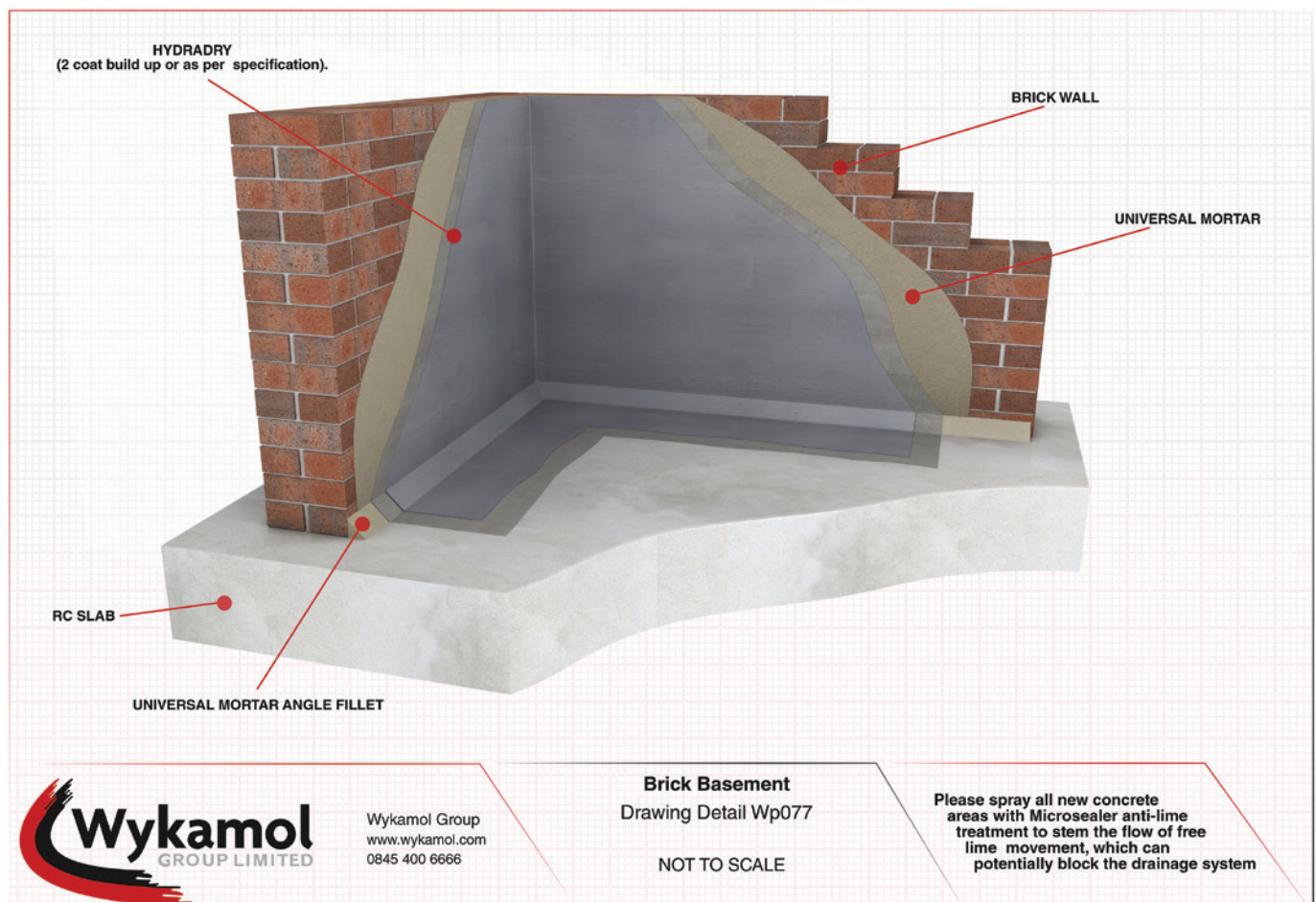
All plasters and renders should be applied strictly in accordance with the manufacturer's instructions, and good plastering/ rendering practice as described in BS5492 and BS5262 Code of Practice.

Do not apply decoration until plaster is thoroughly dry. Note: If plasters other than those specified above are used, they will not conform to the Wykamol manufacturer's specification and will therefore invalidate any guarantee on the material. If any special renders or plasters are to be considered,

technical advice must be sought from the Wykamol technical representative, or technical department.

For dry lining use a conventional or water-resistant bonding plaster in dabs to a minimum thickness of 6mm/ 8 mm and covering at least 50% of the membrane surface area. After the plastered, dry-lined or rendered surface has dried, the surface can be painted or wallpapered using traditional methods and materials without delay.

For more technical information on plaster and renders, please see our full plaster and render guide.







# INSTALLATION GUIDE FOR WYKAMOL CAVITY DRAIN MEMBRANES, AQUA CHANNEL AND SUMP PUMPS TO BELOW GROUND STRUCTURES

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