HydraDRY / HydraPLUG

CEMENTITIOUS WATERPROOFING SYSTEM

SPECIAL PROPERTIES

- **Waterproofs cellars and basements Suitable for brick, stone, block, concrete, etc.**
- **Resists hydrostatic pressure up to 5 metres head**
- **Can be applied to saturated surfaces**
- **Easy brush application**
- **Suitable for use in contact with potable Water**
- **Approved by the British Board of Agrément**

DESCRIPTION

Wykamol HydraDRY is a cementitious compound designed for application to the internal surfaces of walls and the associated solid floors of cellars, basements and other areas below ground level and subject to penetrating dampness. The **HydraDRY** system prevents ingress of liquid water and works by forming a physical and chemical bond with the substrate. It provides a monolithic waterproof membrane yet still allows some vapour transmission thereby reducing the risk of condensation. **HydraDRY** can provide sufficient protection of a 'Grade 3' basement as defined in Table 1 of BS8102 : 1990 and conforms with Category 7 of the BCA basement waterproofing design and site guides.

Wykamol HydraPLUG is a cementitious quick-setting compound which is mixed with water and applied as a putty. It can be used to provide anchor sites for wall fixings and to stop active water leaks.

SITE WORK

Preparation and Design
It is essential that preparation of the surfaces to be tanked is carried out to a very high standard to ensure that a good physical key is obtained. All fixtures, fittings (e.g. timber wall plugs), plaster or other wall coverings should be removed.
It is strongly recommended that grit blasting is used to prepare the wall surface although where major contamination is present needle guns or "comb" hacking systems (resulting in a rough-textured finish) can be used.
Where necessary defective brickwork should be replaced and poor mortar joints repaired. If the substrate is irregular, e.g. random stone construction, a 3:1 sand/cement scratch coat should be applied to provide a sound, even base prior to the application of **HydraDRY**.
It is important that good quality sharp, washed sand is used; a waterproofing additive may be included provided the application of **HydraDRY** is commenced within 48 hours.
N.B. It is essential to determine the suitability of the substance to accept a cement-based coating. All traces of any gypsum-based materials must be completely removed. Where it is known or suspected that high levels of salt contamination i.e. sulphates, nitrates are present in the substrate, mortar joints should be deeply raked out and an SBR-sulphate resisting cement primer and re-pointing mix used prior to the application of

HydraDRY (see 'Application').Where the building structure has cracked and/or is subject to subsidence, it should be established whether the movement of ground is still active. **HydraDRY** is a relatively rigid material and is not recommended where movement is likely (e.g. under roads, pavements etc.)
Where active water leaks are present it must be established that the structure is capable of taking the increased load which may result from waterproofing work. Alternatively, take measures to reduce the water table.
If a few minor leaks exist these should be cut out to leave a square hole in the substrate. The holes can then be filled using **HydraPLUG** mixed to stiff putty. It is important that the **HydraPLUG** is pushed firmly into the hole to ensure that it is totally filled. If severe leaks are experienced pressure vents should be formed by following a similar procedure, but incorporating hollow pipes into the holes, fixed using **HydraPLUG**. The water can be drained into buckets or directly into the drainage system. **HydraDRY** is then applied in the normal manner. When the **HydraDRY** system has cured each vent is carefully removed and the hole plugged with **HydraPLUG** prior to the application of two coats of **HydraDRY**.
Wall/floor and corner joints usually need special preparation to avoid sharp changes of angle in the tanking membrane. The joints should be thoroughly raked out, cleaned and wetted prior to application of Wykamol Fillet Seal or an SBR/cement primer and SBR-modified 3:1 sand/cement fillet (see 'Application' diagram).
The **HydraDRY** membrane should be applied the full height of any soil retaining structures and at least 150 mm beyond the damp-proof course (if a chemical DPC is being installed this should be a water-based or injection mortar-type system and the **HydraDRY** applied before dpc reduced suction). In free-standing basement walls it may be possible to install a horizontal DPC to control capacity moisture movement at or just above floor level, but only if the resting water table height is never above floor level. Similarly, vertical DPC's (set back approx. 500 mm) may be installed in such walls to 'isolate' them from soil retaining structures as long as **HydraDRY** is applied a full 100 mm back from the wall/wall joint.
Alternatively, if any doubt exists concerning water table heights, all walls and floors in basements should be tanked.
Where external ground level is above basement ceiling level and of solid masonry construction it will be necessary to treat the ceiling with **HydraDRY**. Wooden ceilings with joists bearing on walls to be treated with **HydraDRY** should be isolated and reformed and/or other measures taken to protect the timbers from decay (further advice available on request).
In the majority of tanking operations it is preferable to replace existing concrete floors with a new floor incorporating a damp-proof membrane.
However, if the floor is known to be structurally sound and the surface in good mechanical condition it is possible to use **HydraDRY** as a DPM followed by the application of a suitable screed.
However, vapour impermeable or moisture sensitive floor coverings such as vinyls or timber flooring should be avoided unless a physical DPM complying with CP102 is used.

APPLICATION

Ensure powder is stored at room temperature for a minimum 12 hours prior to use.

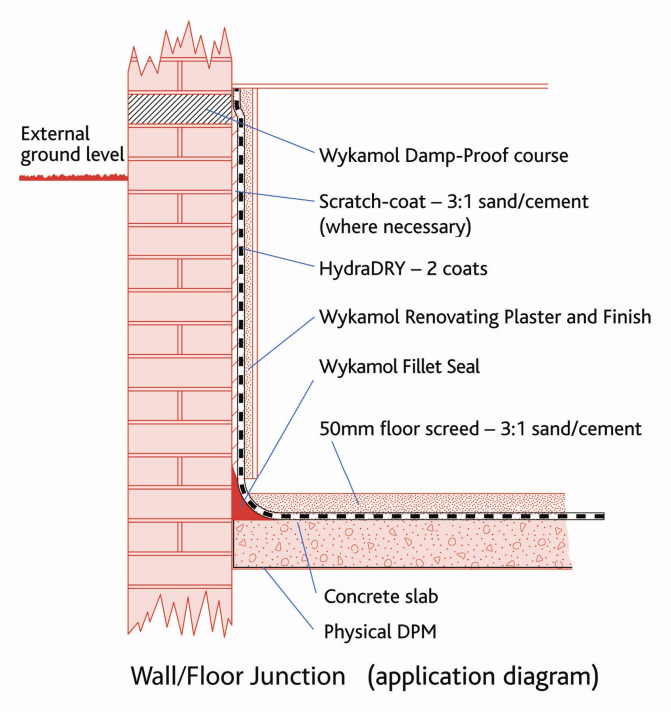
During application the temperature of both the substrate and materials must not fall below 5ºC. In winter months avoid using chilled mixing water. Use warm water (20ºC) for **HydraDRY** and **HydraPLUG.**

General
Immediately prior to application of **HydraDRY** or backing coats the substrate to be treated should be cleared of all dust etc. and thoroughly wetted with clean water. At the time of application all surfaces must be damp but free of surface water.
HydraDRY powder should be mixed with clean water to a brushable slurry paste consistency (approx. 6.5 litres/25kg **HydraDRY** powder). Mixed material should be used within 30 minutes.
HydraPLUG powder should be mixed 4 parts powder to 1 part water (20℃) by volume. For active water leaks, deep cracks and fillets mix to a stiff putty consistency. Mix only sufficient powder that can be placed with 2 minutes.
HydraDRY should be applied using a stiff bristled brush or broom (wash frequently to avoid clogging). Two coats of **HydraDRY** should be applied at a thickness of 1.5 mm per coat. It is essential that the first coat is brushed well into the surface to ensure a good bond with the substrate. The second coat may be applied as soon as the initial application has dried sufficiently to form a firm base. This will normally be between 2-16 hours depending upon site conditions (allow more time for curing then temperatures fall below 10ºC).Where **HydraDRY** is applied by towel (reduce gauging water slightly) this must be restricted to the second coat and a "stippled" finish left (use applicator brush) to provide a physical key for subsequent replastering.
HydraDRY should not be applied in a thickness greater than 3-4 mm (2 coats).Where each application cannot be finished within a single working day it is essential than an overlap of at least 250 mm is used to prevent butt joints.
Work should not be stopped at corners or other natural breaks in the construction.

Salts
If the basement has a known history of aggressive salts specific precaution should be taken to deal with these (the type of salts present should be determined by analysis). In particular **HydraDRY** is not suitable for use in areas of high sulphate content (where the sulphate

content exceeds Class 3 limits of BRE deposit 363.) It may be possible to impart improved salt resistance to **HydraDRY** by incorporating Wykamol SBR latex into the gauging liquid (i.e. 1:1 with water). In other situations an SBR primer/SBR render based on sulphate resisting cement may be advisable (see 'wall/floor joint' detail). In very severe cases of poor wall stability or acute salting conditions consideration should be given to alternative strategies for achieving a dry wall/floor surface (advice available on request).

Floors
When a new floor is being laid, the physical membrane should be cut off at the top of the slab and the procedure noted under wall/floor joint followed prior to the laying of the final screed.



Wall/Floor Junction (application diagram)

Wall/floor and corner joints
Detailing at the wall floor joint must be carried out to a high standard. Wykamol Fillet Seal is a cementitous mix designed specifically for the task. Alternatively two coats of an SBR primer bonding coat are applied (1 part SBR:2 parts cement by volume). As soon as possible thereafter a 3:1 sand/cement mix incorporating a good quality sharp washed sand and gauged with SBR:water (1:1) is used to form a fillet at least 50 mm high and 50 mm deep at the wall/floor joint. The fillet is trowel applied taking care not to pierce the SBR primer coat. The edges of the filet should be "feathered" to give a smooth curved appearance (this may be achieved by using a glass bottle). As soon as the fillet has set firm the application of **HydraDRY** should proceed (if the SBR-modified fillet fully cures a fresh coat of bonding primer will be necessary to re-key the surface).
Where the **HydraDRY** is not being used over the whole floor area it must extend a minimum 250 mm across the floor (the second coat should stop 50 mm back from the first). If a sandwich bitumen membrane is being incorporated this may be applied directly to the **HydraDRY** and screeded in the normal manner. N.B. Bitumen emulsions are unsuitable for these situations.

N.B. If the wall:floor joint is a source of active water leaks cut a square-shaped chase (not a v-notch) at the base of the wall and fill with **HydraPLUG** before proceeding.

FINISHING

Replastering
Replastering is an integral part of the tanking specification, protects **HydraDRY** from impact damage and reduces the incidence of condensation.
Wykamol Renovating Plaster is particularly recommended as a means to avoid cold surfaces but a sand:cement plaster incorporating an integral waterproofer may also be used.
Replastering should be carried out in accordance with BS5492:1990 and the appropriate Wykamol Replastering Specification data sheet as soon as the final HydraDRY coat has set to form a firm base (12-48 hours). If the **HydraDRY** is left longer prior to replastering an SBR-modified cement slurry may be required to overcome low suction in the substrate.
N.B. Gypsum based plasters must not be used in direct contact with **HydraDRY**. Use only stainless steel metal angle beads to form details on external corners etc. (use SBR-modified mortar to fix). In hot weather keep the plaster/tanking moist (e.g. mist spraying, polythene sheet) over the first 48-72 hours to encourage full curing and strength development.

Reinstatement
The success of any tanking system depends upon the integrity of the system being maintained. Therefore, conventional fixing methods, i.e. screws, etc. cannot be used and alternative fixing methods have to be employed.
For lightweight fixings it is suggested that adhesives are used to stick items such as skirting boards, electrical conduit etc. A wide range of products are available for this purpose, e.g. polyurethane mastic's.
For heavy duty fixing points, before application of **HydraDRY**, oversized holes should be drilled. These can then be plugged with **HydraPLUG** and a plastic insert. For major fixings a larger size hole should be prepared, i.e. a half brick and the same basic procedure followed.
In exceptional circumstances heavy duty fixings may be made after the completion of the **HydraDRY** system by using chemical anchor systems. i.e. epoxy mortars, two-pack resin systems, but this is not recommended.

Decoration
On completion of the **HydraDRY** system it is important that the system is allowed to dry out naturally without

the use of radiant or fan heaters, dehumidifiers or forced ventilation (convector heaters to provide temperatures above 10ºC may be acceptable). Once the surface is substantially dry, paint or other finishes may be applied, it is essential that all decoration is vapour permeable and it is suggested that an emulsion paint is used.
In tanked basements the provision of adequate background heating and ventilation is essential to ensure condensation risks are controlled.

PRODUCT DATA

Appearance	Pale grey powder
Covering Capacity	**HydraDRY** – approximately 3 kg per square metre per coat (two coats recommended)
Pack Size	**HydraDRY** 25 kg. **HydraPLUG** 5 kg
Shelf Life/Storage	6 months: store in a cool dry place
Performance	Comprehensive strength (25 mm cube) Bend strength (3 point loading) : 98 N Tensile strength : 237kN/m2 Sheer bond strength (to old concrete) : 128kN/m2 Pull off strength : 321kN/m2
Permeability	(liquid 5 m head) : Nil
Permeability	(vapour) : 63 g/m2/day (tested to BS3177)
Drying Time	Dependent on substrate and climatic conditions
Cleaning	Tools should be cleaned with water before cement sets; with acid-based mortar remover thereafter.
Safety	Irritant powder (handle as ordinary portland cement). Full details of handling precautions etc, are given on the product label and further information on emergency procedures etc. is given in our **HydraDRY** safety data sheet available in request.

TECHNICAL INFORMATION

This data sheet is intended for the use of professional remedial operators and is compiled accordingly. Further guidance on the use of masonry biocides as part of a strategy for the control of dry rot can be found in Remedial timber treatment in buildings' (HSE Books. ISBN 0-11-885987-0) and the BWPDA Code of Practice for Remedial Timber Treatments.
For further advice on the use of Wykamol products, contact the Technical Department at the address below.

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 02/3961

Issue Date : January 2012

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