

Waterproofing

Structural Waterproofing from Rawell



Pre-hydrated, High Density Bentonite

RAWMAT® HDB Membranes and
RAWSEAL® HDB Waterstops
High Density Bentonite Structural Waterproofing



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Providing leading-edge solutions

Rawell Environmental Limited is one of the world's premier suppliers of bentonite-based waterproofing materials. For building and civil engineering projects our unique system of RAWMAT® HDB (High Density Bentonite) Membranes and RAWSEAL® HDB Waterstops delivers leading-edge solutions that offer a demonstrable range of advantages over conventional dry bentonite and other rival systems.

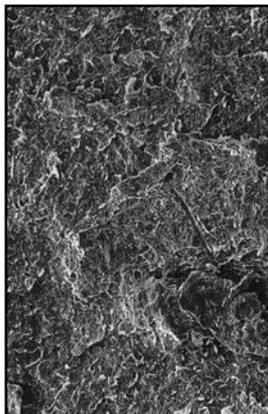
Founded in 1976 by current Chairman, Bryan Flynn, Rawell has built its success on years of experience in this market and a highly focused and proactive approach.

Our high quality personal service and close attention to detail have won us an enviable international reputation. Rawell's customers enjoy total reassurance that our products will function with complete reliability for the whole life of the structures to which they are applied.

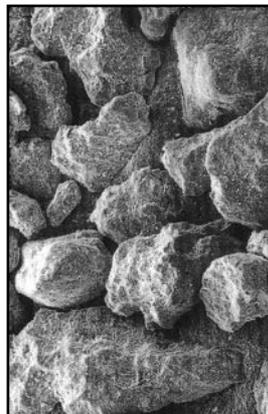
Rawell's impressive list of clients and projects include household names such as The Channel Tunnel, Canary Wharf, Manchester Airport and Scottish Widows, while our projects have ranged worldwide from the Copenhagen and Milan Metro's, high speed rail links with new Airports in Norway and Hong Kong, to the Britomart Underground Station in Auckland, New Zealand.

Satellite view of Wyoming, USA

For details of Rawell products and services visit www.rawell.com where you can find more information suited to your specific needs, or call +44 (0) 151 632 5771



High Density Bentonite,
note dense surface



Dry Bentonite, note voids
around particles

What is Bentonite?

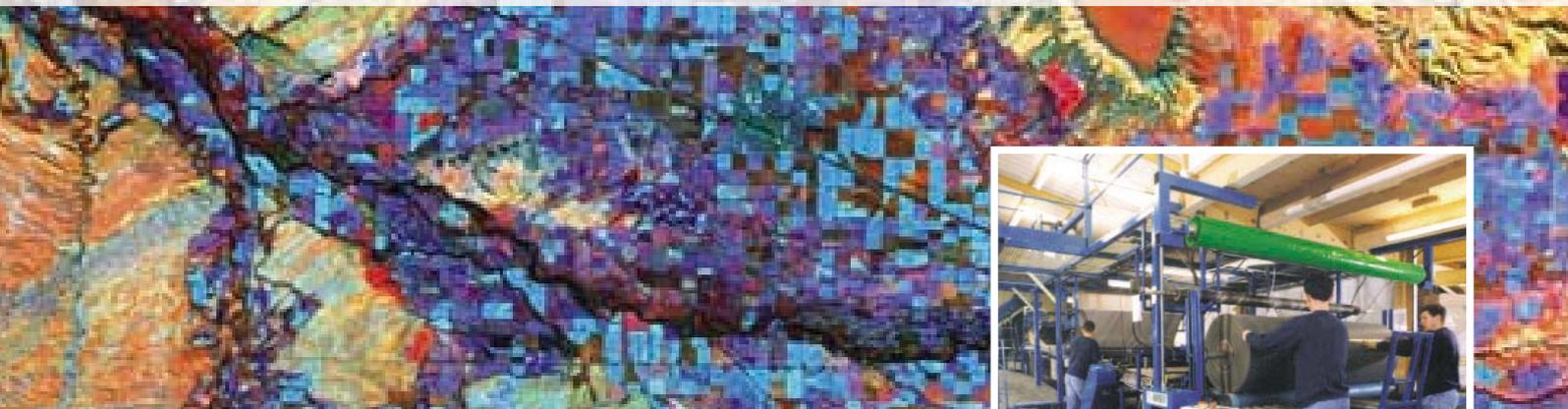
Bentonite is a natural inert clay formed from volcanic ash and found predominantly in Wyoming, USA. It absorbs water and can swell to form an impermeable mass that prevents the passage of liquid, these swell characteristics are harnessed to provide waterproofing properties.

However, in-situ hydration of bentonite may leave the clay susceptible to chemical degradation.

Cracking and shrinking can be induced by ground contaminants and are well-known results of failure in dry bentonite systems.

To avoid this, Rawell has developed a revolutionary waterproofing material by using it's own patented process to polymerise and pre-hydrate the bentonite. The clay is produced into rolls of membrane and lengths of waterstops.

The resulting pre-hydrated bentonite clay has extreme high density with exceptional resistance to ion exchange and chemical attack. The plasticine-like core also ensures no movement of clay in handling and no loss of the bentonite in cutting around penetrations. It also withstands minor movement through its ability to swell and ensure the continuity of the waterproofing system. This is what makes RAWMAT® HDB unique.

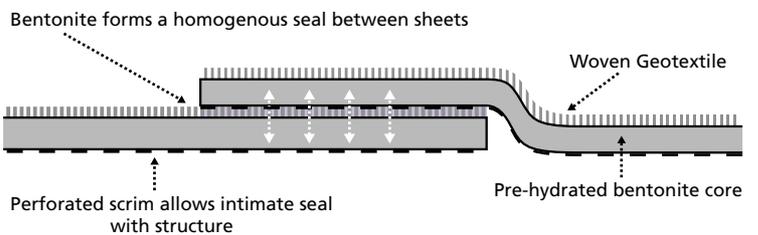


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RAWMAT® HDB - Type S



A unique range of benefits

RAWMAT® HDB has been developed through extensive research and experience over many years to overcome the difficulties experienced by other waterproofing systems.

As well as its long list of advantages over conventional dry bentonite systems, RAWMAT® HDB also affords a range of specific benefits when compared with rival thermoplastic, bituminous, and liquid-applied products.

Joints are self-sealing at the overlap, with no wicking of liquid either here or through the geotextile carrying fabrics. Tracking of liquid is also eliminated because these specialist fabrics are carefully chosen to ensure the bentonite achieves an intimate seal with the structure.

Practical and cost-effective

RAWMAT® HDB comes in rolls which are easy to handle and can be installed quickly and simply by unskilled labour and in any weather.

RAWMAT® HDB Waterstops consist of flexible construction joint sealants and angle fillets which provide a watertight joint by expanding in contact with liquid to form a compressive seal in the concrete.

The sheets of RAWMAT® HDB are simply nailed to the structure - unlike traditional 'peel and stick' or 'torch applied' materials - and are flexible enough to be easily sealed around corners and penetrations. RAWMAT® HDB can be applied to 'green' concrete in all weathers and require no primers, adhesives or protection boards.



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Specific advantages - over dry bentonite products

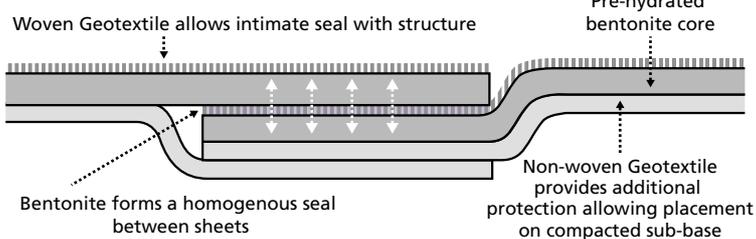
- Unique factory pre-hydration process and QC checks avoid performance uncertainty and guarantee effectiveness
- Patented vacuum extrusion creates non granular plasticine-like consistency - bentonite cannot fall out
- Pre-hydration of bentonite with liquid polymers protects RAWMAT® HDB against ionic exchange
- No tracking of liquids - bentonite core bonds tightly to structure
- Immediate gas and vapour barrier guaranteed thanks to pre-hydration process
- Self-sealing overlaps - no additional bentonite required and no leakage through laps
- Delivered to site as an impermeable membrane

Additional advantages - over thermoplastic, bituminous, and liquid-applied products

- Oversite blinding often unnecessary - may be laid directly onto formation
- Can be laid in any weather and onto wet concrete or other surfaces
- Rapid, simple installation by unskilled labour
- Forms self sealing overlaps, no welding, tapes or rolling required to seal joints
- Robust and flexible - withstands construction site conditions
- A natural material which functions for the life of the building
- Self heals minor structural movement
- Resistant to chemical attack
- Natural material containing no solvents or VOC's



RAWMAT® HDB - Type P



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Our Product Range

RAWMAT® HDB Membranes

RAWMAT® HDB achieves impressive Hydraulic Conductivity readings even in the presence of high levels of soluble calcium and magnesium. The composite structure of RAWMAT® HDB is very stable and can be subjected to repeated freeze/thaw and wet/dry cycles without reducing its waterproofing properties.

This factory pre-hydrated High Density Bentonite system has not lost any of the benefits of high swelling smectite clay and consequently RAWMAT® HDB retains the ability to self heal if punctured and swell and heal cracks which may form in concrete surfaces to which it is applied.

The dense structure of the membrane also creates a barrier to prevent the ingress of vapours and gases.

The products are non toxic and chemically inert posing no health and safety issues

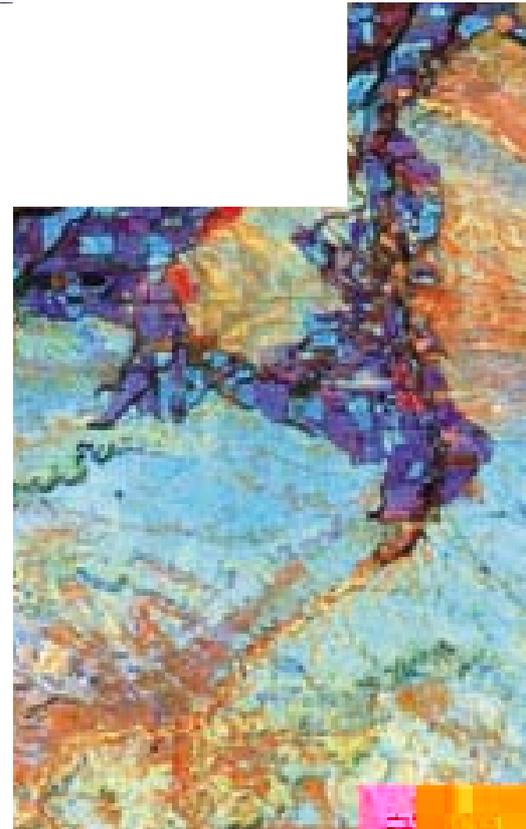
RAWSEAL® HDB Waterstops

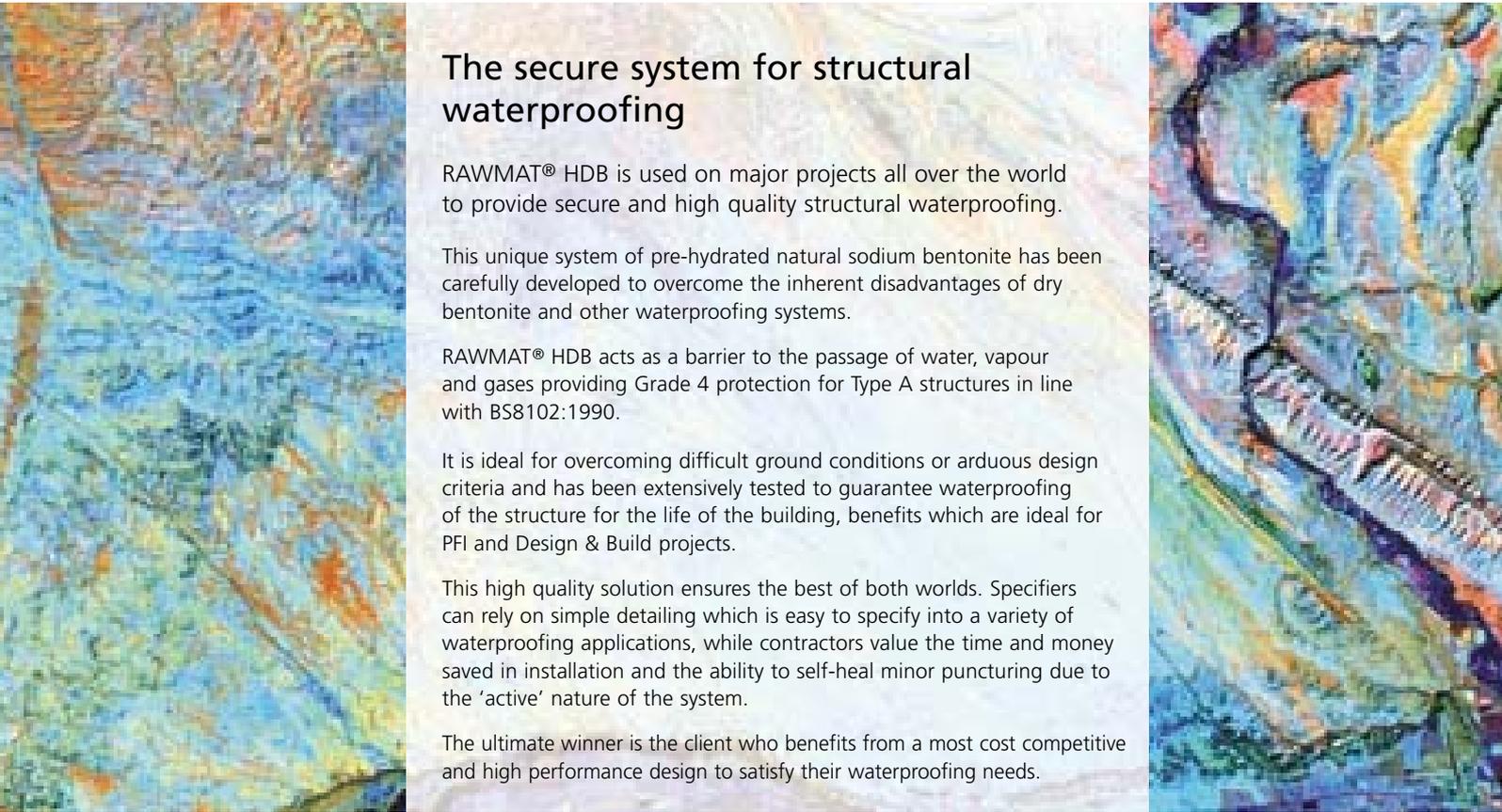
RAWSEAL® HDB Waterstop range consists of flexible construction joint sealants and angle fillets which provide a watertight seal by expanding in contact with liquid.

The Bentonite mass swells to form a permanent impermeable barrier within the concrete joint.

The RAWSEAL® HDB products are fixed into rebates formed in the concrete and can be glued to steel piles and PVC ducts.

Having cleaned the surface to be sealed of dust and debris, the coils are fixed using RAWTITE Rapid Bond Adhesive or nails and joined by butting or splicing together to form a continuous waterstop both horizontally and vertically.



The background of the text area is a large, abstract, textured image with a mix of blue, green, and brown tones, resembling a close-up of a natural material or a complex geological formation.

The secure system for structural waterproofing

RAWMAT® HDB is used on major projects all over the world to provide secure and high quality structural waterproofing.

This unique system of pre-hydrated natural sodium bentonite has been carefully developed to overcome the inherent disadvantages of dry bentonite and other waterproofing systems.

RAWMAT® HDB acts as a barrier to the passage of water, vapour and gases providing Grade 4 protection for Type A structures in line with BS8102:1990.

It is ideal for overcoming difficult ground conditions or arduous design criteria and has been extensively tested to guarantee waterproofing of the structure for the life of the building, benefits which are ideal for PFI and Design & Build projects.

This high quality solution ensures the best of both worlds. Specifiers can rely on simple detailing which is easy to specify into a variety of waterproofing applications, while contractors value the time and money saved in installation and the ability to self-heal minor puncturing due to the 'active' nature of the system.

The ultimate winner is the client who benefits from a most cost competitive and high performance design to satisfy their waterproofing needs.

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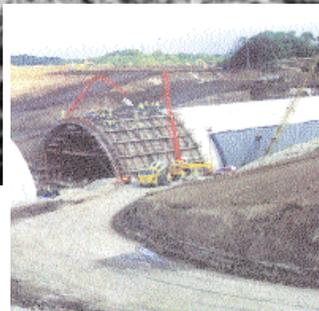
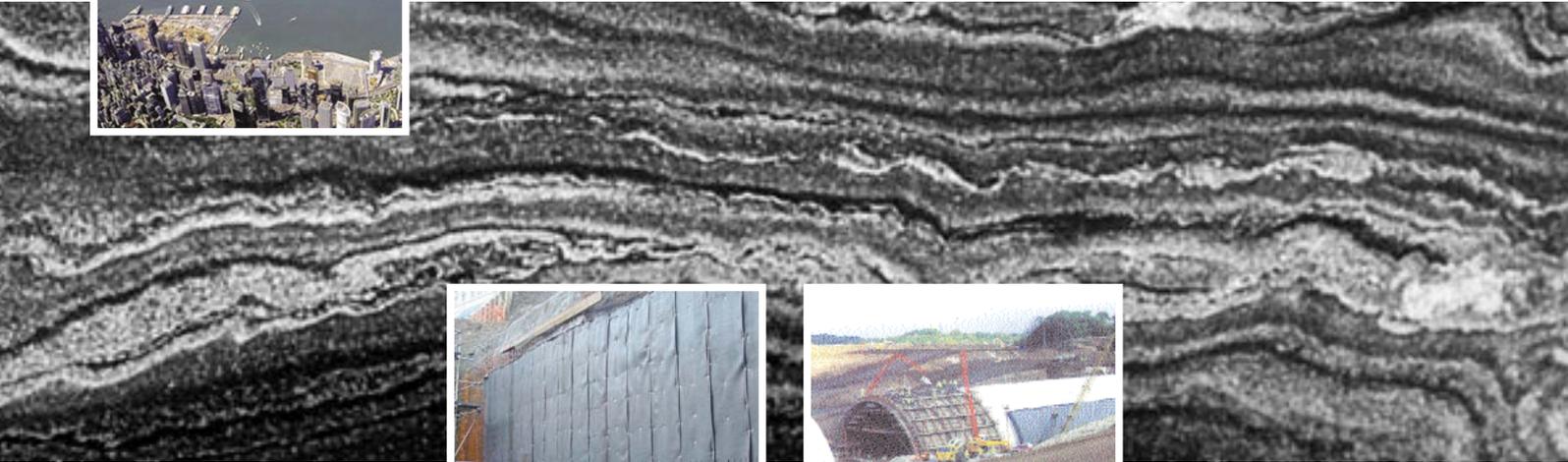
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Rawell actively seeks close involvement with architects, engineers, contractors and clients throughout the project, from feasibility study to final construction. We are able to provide expertise born of wide experience to help resolve difficult or complex application problems at any stage.

Rawell reserves the right to change product specification and instructions without notice. The information contained herein is to the best of our knowledge, true and accurate; it is of an illustrative nature only and does not form any contract or intended contract with any purchaser or installer, and supersedes previous information.

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