

The Watertight Case for CEMflex VB Active Waterstop

The most successfully tested
joint waterstop in the world

CEMflex
THE ACTIVE WATERSTOP [®]



The Problem

Water-resistant concrete structures have gained increasing importance in recent years. However, given that the joints in these constructions have often proven the Achilles heel, the associated sealing solutions warrant particular attention on the part of designers, specifiers and contractors alike.

Sadly, all too frequently errors in both detailing and workmanship - due to a lack of familiarity with the various joint sealing systems, their underlying principles and practical application - can all too easily result in costly leakages and damage.

Traditional Joint Sealing Systems

BS 8102:2009 Code of practice for protection of below ground structures against water from the ground classifies joint sealing systems (or waterstops) into three distinct categories: passive, active (to include hydrophilic Strips and crystallisation slurries) or permeable hose systems.

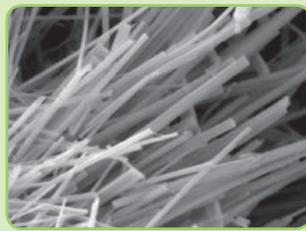
Although all of the aforementioned types of waterstops have proven effective, they are known to have a number of disadvantages: premature swelling, limited swelling capacity or cycles. Many are also inflexible, difficult, and slow to install.

CEMflex Active Waterstop - The Ultimate Solution

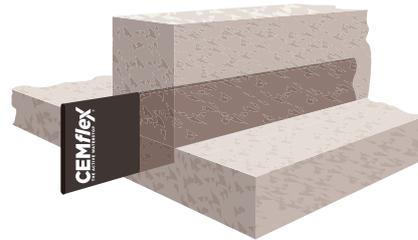
The introduction of the patented CEMflex Active Waterstop has revolutionised the sealing of non-movement joints in concrete substructures. The CEMflex Active Waterstop functions as both an active and passive barrier to the transmission of water through the joint. The steel plate creates a physical barrier whilst the active coating reacts with the alkalinity of the concrete to form Calcium Hydroxide (Free Lime) which supports the natural self-healing (sintering) process of the concrete to seal cracks and eliminate any water ingress. Unlike conventional crystallisation waterproofing the CEMflex Active process is a form of crystallisation that does not create any salts which could have an adverse effect on the reinforcing steel which supports the concrete structure.



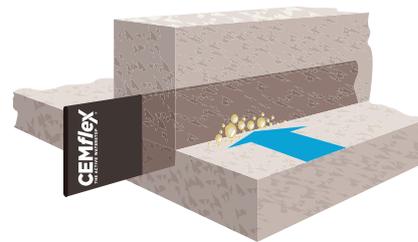
CHP Process



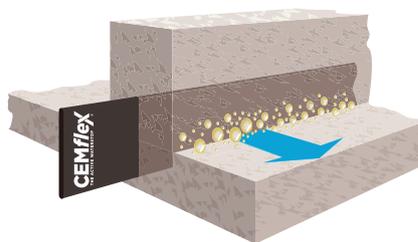
Under a Microscope



CEMflex VB Plate is cast centrally along and perpendicular to the construction joint.



The fresh concrete activates the patented coating on the plate causing the coating to soften and expand slightly penetrating any cracks where it solidifies and seals the joint.

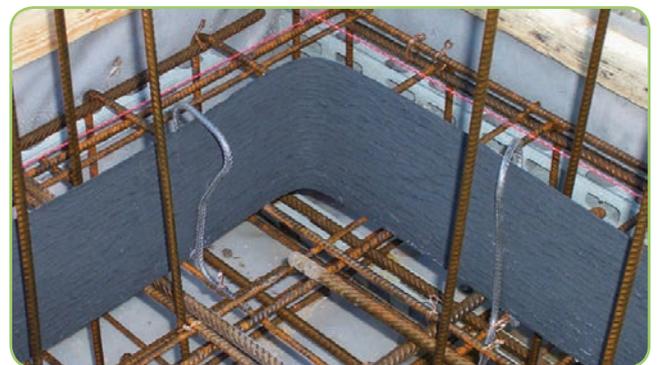


This process is reactive every time water or moisture comes into contact with the coating during the lifetime of the structure.

The CEMflex Active Waterstop System is fast, effective and easy to use

CEMflex Active Waterstop can be installed in one of two simple methods: either by fixing to the steel reinforcement pre-pour or by pushing the plate, a minimum of 30mm, into freshly poured concrete. CEMflex Active Waterstop can be installed both horizontally and vertically and is easily connected to PVC Waterstops in movement joints to form a continuous watertight joint system.

The elements are strong yet malleable so angles/corners can be formed by hand without damage to the patented CEMflex coating. To connect elements simply overlap the plates by 50mm and secure with a CEMflex Clip. Once the element is encased in the concrete the special patented CEMflex coating is activated by the alkalinity of the concrete thus starting the Active process of formation of "free lime" and this supports the sintering of the two elements together to form a monolithic waterstop.



CEMflex Active Waterstop has many advantages over conventional waterstops

- ▶ Fully Weatherproof System- no premature activation of the coating on contact with rainwater.
- ▶ Studies show up to 80% installation labour saving over traditional waterstops
- ▶ Life expectancy of 100 years
- ▶ In the event of water ingress the patented coating will reactivate at any time throughout the lifetime of element
- ▶ Can be installed both pre and post pour
- ▶ No collapse or displacement of the waterstop when subjected to concrete poured from above
- ▶ No special installation tools required
- ▶ No welding required
- ▶ Simple design dramatically reduces the potential for poor installation or expensive remedial works
- ▶ No sticky adhesive tapes to remove or dispose of
- ▶ Can be used in conjunction with other waterstop systems: PVC Waterstops for movement joints, injectable hose systems or hydrophilic waterstops



Application Areas / Compatible Systems

BS8102:2009 Type A, B, and C Waterproofing
Protection Membranes & Joint Waterstops



Getting it right first time, on time, every time

CEMflex Active Waterstop has been designed to provide the highest level of efficacy of any joint waterstop available whilst also being the simplest to fit.

The effectiveness of the CEMflex Active Waterstop has been tested successfully under more severe conditions than any other waterstop on the market providing you with the reassurance that you need.

When you decide to install CEMflex be confident that you are choosing the best joint waterproofing solution available.

CEMflex Active Waterstop Sets the Standards

 BBA certified to 5 bar water pressure (with a safety factor of 2.5)	 abP-MPA Building Supervisor General Test Certificate	 iBMB (P-5147/258/09) Tested to 5 bar water pressure	 80 year design life	 Swedish Water Tightness Approval
 Drinking Water Approval	 Drinking Water Approval DVGW Code of Practice W347	 German Water Tightness Approval	 Austrian Water Tightness Approval	



Solutions from SURFASOLOGY™



Injection Hose Technology

CEM

A single-walled PVC based injection hose.



Injection Hose Technology

Predimax

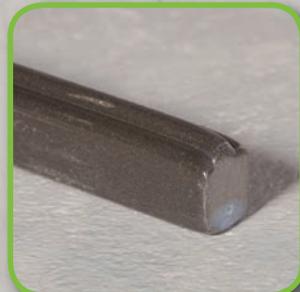
A double-jacket PVC based injection hose.



Bentonite

Quellmax Blackstop

Bentonite waterstop tape which provides strong, rapid, and reliable swelling.



Bentonite

Quellmax Plus

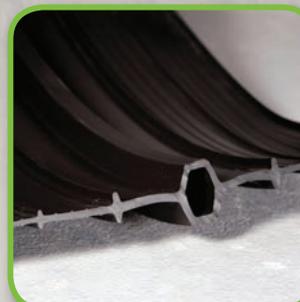
Bentonite waterstop tape with a patented rain protection layer, which delays swelling effect of the waterstop on contact with water for c. 72 hours.



TPE Hydrophilic Rubber

CEMswell

An extruded rubber-based compound that can swell 5 to 10 times its original size while maintaining its dimensional stability.



PVC

CEMproof PVC Waterbars

A range of internally and externally placed PVC Waterstops used for the protection of both movement and non-movement joints in reinforced concrete structures.

