

AquaBlok+™

Reactive Hole Plug and Sealant Aids in Pollution Prevention

By adding reactive media or catalysts to the AquaBlok® delivery vector, the hydratable composite particles quickly form subsurface seals around targeted objects such as well casings, caissons, pillars, piping, or other engineered structures when introduced into the environment. The reactive nature of the improved sealant is such that organic compounds which partition into the sealant will be destroyed. Inorganic compounds that tend to migrate along the preferred path of the boreholes or engineered structures will be effectively sequestered, thereby preventing extended or cross-contamination of sub-aqueous environments. PATENTS PENDING.

Technology Overview

AquaBlok is a patented, composite-aggregate technology resembling small stones and typically comprised of a dense aggregate core, clay or clay sized materials, and polymers (Figure 1).

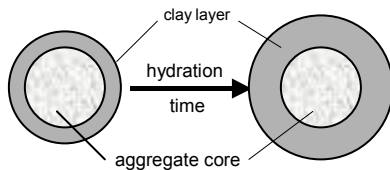


Figure 1. Configuration of Typical AquaBlok Particle (not to scale)

AquaBlok's clay (sealant) component consists largely of bentonite clay. However, other clay minerals can be incorporated to meet project-specific needs. Other technology parameters (particle size, relative clay content, etc.) can also be modified, as appropriate. As AquaBlok particles expand when hydrated, the mass coalesces into a contiguous, impermeable (5×10^{-9} cm/sec) and relatively soft body of material. Once developed, hydrated AquaBlok can act as an effective physical, hydraulic, and chemical barrier by virtue of its relatively cohesive and homogeneous character, low permeability to water, and chemically active (sorptive) nature.

Problem Statement

A low-permeability, hydraulic seal is often required during construction of monitoring, remedial action, and extraction wells related to a variety of industry processes to minimize the potential for vertical transfer of contaminated ground water, oil, or brine along the well's annular space. Such transfers pose a risk in that pollutant migration can contaminate adjacent aquifers.

Solution – Reactive Sealant

The use of AquaBlok+ (AB+) reactive hole plug helps ensure that cross contamination of aquifers does not occur during site investigation, delineation and remedial actions. In addition, rebound of contaminants, which may be attributed to the sorptive nature of conventional sealants, can be avoided.

Creating a reactive hydraulic seal above a well's screened interval generally involves installation of a low-permeability reactive cap directly over sand or other granular material previously placed in the well's annular space, adjacent to the well screen (Figure 2).

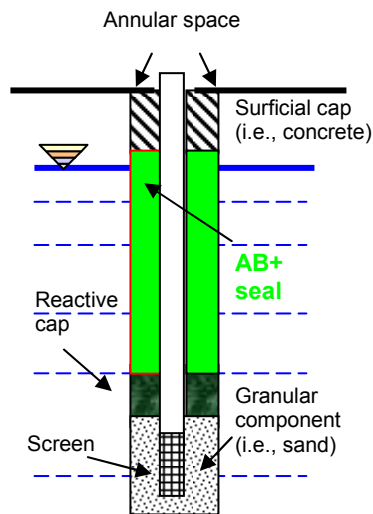


Figure 2. Schematic of well constructed with AB+ Hole Plug.

The reactive cap and remainder of the hole plug for the annular space can be comprised of AB+ rather than conventional grouting materials. It provides comparable performance to bentonite pellets, and superior performance to bentonite flakes or chips in

placement and elimination of "bridging" within the annular space.

Bridging results in the formation of an ineffective bentonite cap positioned above, rather than contiguous with, the underlying granular surface. Such a hydraulic gap could create pathways for the release or uncontrolled transfer of contaminated ground waters from one aquifer to another.

AquaBlok+ Improvements over Conventional Approaches:

- Easy application and fast settling = reduced field time
- Uniform distribution minimizes bridging
- Contiguous and effective reactive well seal
- Reactive matrix = no rebound of contaminants
- Improved remedial performance
- Cost effective



AquaBlok+ Hole Plug pellets are easy to handle and place. No mixing or special equipment is required.

Cost: Quantity pricing available based on packaging requirements. Volume discounts apply.



An AquaBlok® Remediation Technology Representative

For more information please call us on **(888) 295-8661**, or send an email to: info@adventus.us

We are online on:
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