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PFAS contaminated concrete, asphalt, other solid wastes can continue to impact soil and water for decades.

The **ISSUE** is how to manage/remediate these polluted sources.

SOLUTION

THE AMBIOLOCK® RANGE OF PRODUCTS

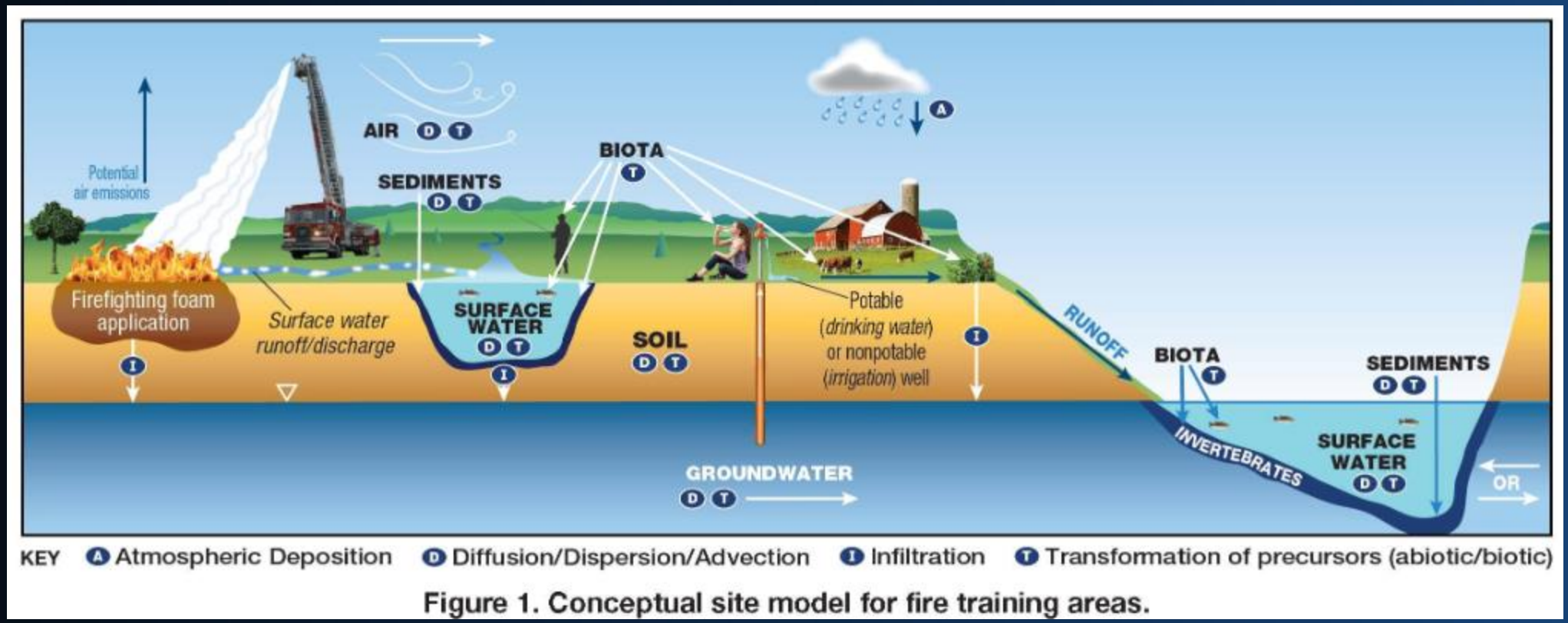


Figure 1. Conceptual site model for fire training areas.

AMBIOLOCK

AMBISEAL

AMBIPROTECT

AMBIOLOCK®

Employing physical binding mechanisms, AMBIOLOCK restricts and limits PFAS movement through a stabilised concrete substrate matrix. Mechanisms for managing PFAS leaching out of solid material like impacted concrete. This patented technology controls and manages any existing impacted source materials through a process of encapsulation and stabilisation. It allows for Re-Use/Recycling of impacted material on-site, or controlled disposal of the impacted material on or off-site.

AMBIOLOCK + **CONCRETE** + **PFAS IMPACTED MATERIAL**

Liquid - water
Concrete
Bituman

Solid Wastes
Soils
Other

AMBIOLOCK can be incorporated into a concrete substate mix to achieve equal or greater material strength when compared to untreated concrete, while reducing leachable fractions of PFAS by up to 99%.

Trial Results

The following tables and figures detail the performance of Ambiolock for its proposed reuse in pavements and aprons. In short, its was noted that 99% of PFAS was arrested in the Ambiolock treated concrete (test period = 1 year) and that Ambiolock achieved a compressive strength equal to or greater than non-treated concreted, including for stabilised sand. Note that "Base" refers to types of concrete untreated with Ambiolock and are used here as a performance rate indicator. Ambiolock application conducted at low, nominal and high dose.

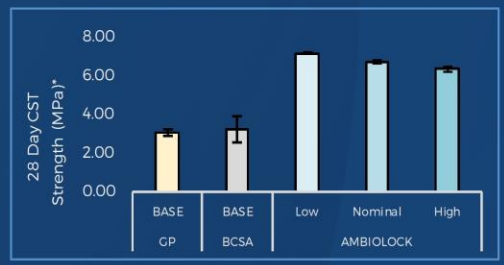


Figure 2. Performance comparison between compressive strength for stabilized sands. Note: all 32MPa concretes passed 32MPa hurdle (not shown here).

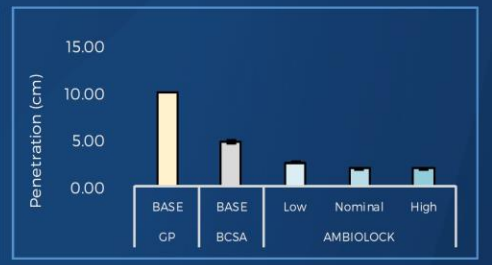
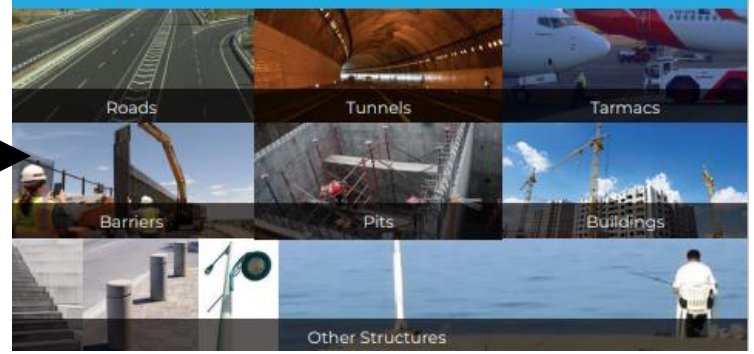


Figure 3. Performance comparison between permeabilities for stabilized sands. Note: BASE GP result exceeds measures (<10cm)

Applying AMBIOLOCK Treated Concrete

Recycle/Reuse Options

AMBIOLOCK provides numerous structural options with PFAS controlled materials



Controlled Disposal

Conclusion: AMBIOLOCK technology allows for the Reuse/Recycling of PFAS impacted materials on-site to create circular economy benefits. AMBIOLOCK use can allow for extensive savings compared to off-site landfill disposal, while minimising risk long-term.

AMBIOSEAL

How AMBIOSEAL technology works

AMBIOSEAL is a two stage application utilising proprietary technology for controlling and managing any existing PFAS impacted structural materials through a non-toxic chemical treatment which achieves physical immobilization.

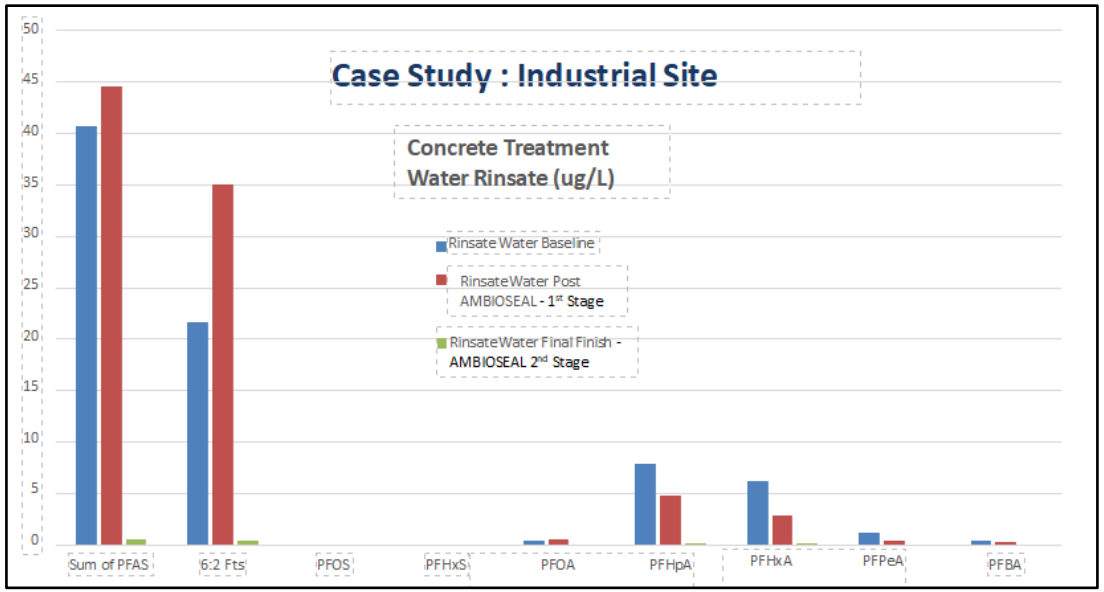
1st Stage – product applied on concrete structure

Sprayed or rolled on, provides a unique coating and penetrant hindering liquid and chemical contaminant transport from the impacted concrete or adjacent impacted materials.

+

2nd Stage - added protection and resistance

The 2nd coating enhances the long term wear resistance of an AMBIOSEAL coated concrete surface and assures maximum control of surface contaminant leaching.



Case Study : Fire Training Ground (FTG)

Analytes	Acidic		Neutral*		Alkaline	
(µg /L)	Initial Measured Concentration	Final Treated Results	Initial Measured Concentration	Final Treated Results	Initial Measured Concentration	Final Treated Results
PFOS	395	0.04	22.6	0.02	33.4	0.01
PFOA	17.2	0.01	1.6	0.001	1.43	0.001
Sum of PFHxS & PFOS	439	0.07	27.8	0.02	39.4	0.008
Sum of PFAS	482	0.14	48.5	0.04	58.9	0.017

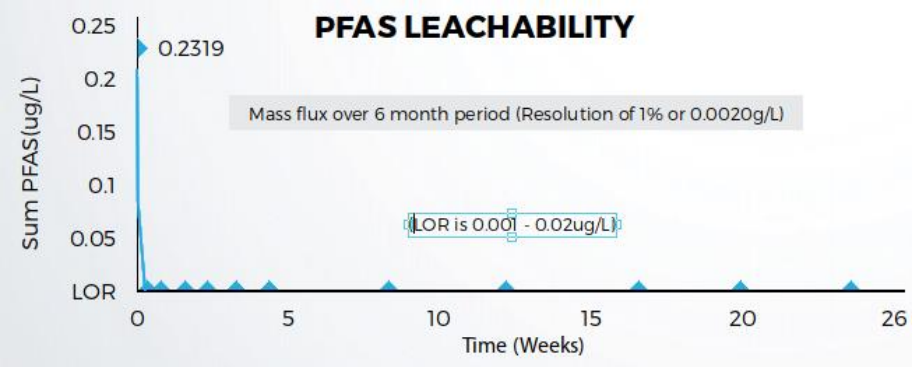
FTG Samples Tested
Acidic Conditions—reflecting Landfill Leachate
Alkaline/Basic Conditions—reflects landfills in a LimestoneEnvironment
Neutral Conditions* – broadly simulates the Natural Environment, and behavior of a Treated Concrete Pad

Some tested performance characteristics of the AMBIOSEAL technology

- Highly resistance to aggressive chemicals
- Effective at sealing cracks in concrete
- Compressive strength better than untreated concrete
- Heat resistance better than untreated concrete
- Skid resistant compared to untreated concrete

Conclusion: AMBIOSEAL technology limits PFAS migration from *Impacted Environments. A*llowing for the ongoing use of *Impacted Areas (i.e. truck wash bays, training facilities, airport infrastructure)* while minimising and managing contaminant leaching from the structure.

AMBIOPROTECT is a proprietary product added at the time of batching during the manufacture of various concrete structures. It protects these structures from PFAS, and other potential contaminants, from nearby sources.



AMBIOPROTECT incorporated into a concrete substate mix to achieve equal or greater material strength when compared to untreated concrete, restricting potential PFAS impact by up to **99%**.

Environment

The AMBIOPROTECT technology limits retention of PFAS and/or other contaminants, helping to ensure that AMBIOPROTECT treated structures do not become potential secondary sources of contamination, and risk to human health or environmental.

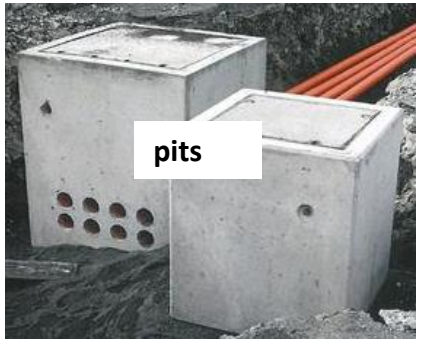
Health & Safety

Workplace Health & Safety obligates a legal Duty of Care conforming with the standard criterion of what is reasonably practicable. Legally, Directors, Business Owners, Managers and others must eliminate risks in the workplace, and if not practicable to eliminate these, then minimise the risks to the extent possible. AMBIOLOCKPROTECT, and sister products, provide a cost-effective and viable solution for eliminating and managing PFAS risks associated with contaminated infrastructure.

Added Benefit

For every 1,000 m^3 of concrete produced using AMBIOPROTECT, a possible reduction of approximately 82,000 kg CO_2 may be achieved - reducing embodied carbon by around 10-15%+

Concrete Structures Manufactured On-site & Precast



Conclusion: AMBIOPROTECT technology protects treated structures from contamination by PFAS and other pollutants. AMBIOPROTECT provides an inexpensive solution to assist in protecting new infrastructure from nearby sources of contamination.

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