

All Bloc™

CONCRETE ADMIX

ENDWATER

Concrete Waterproofing Solutions

EndWater Solutions, LLC

All Bloc™

CONCRETE ADMIX



CONCRETE JUST EVOLVED...



Water Resistant • Freeze-Thaw Tolerant • Stronger
Inhibits Rust • Increased Durability • Contaminant Resistant
Halts Efflorescence • Longer Service Life



Introducing All Bloc™

Introducing the evolution of concrete; the newest permeability reducing admixture for hydrostatic conditions (PRAH).

All Bloc™, a product of EndWater Solutions, LLC, contributes enhancements to concrete, leading to long-term cost savings and maximizes time on overall construction.

It replaces the need for multiple products, and becomes an all-in-one solution for improving strength, and life-span of concrete. **All Bloc™** virtually eliminates water absorption, improves compressive strength, reduces chloride ion penetration, dramatically enhances freeze-thaw tolerance, and greatly increases the durability. The end result is the revolutionary creation of hydrophobic concrete and cement-based products.

Preferably added at the ready-mix plant, **All Bloc™** eliminates the guesswork, mixing & handling of bulky bags or heavy containers at the pour site. **All Bloc™** is easy-to-mix during batching and simply requires adequate mixing; then pour and finish like normal.

Experienced concrete finishers have stated that the workability is greatly improved, another plus for **All Bloc™**.

Once it's added to the mix, **All Bloc™** is permanently infused throughout the concrete and doesn’t require anything to reactivate its waterproofing benefits. There is also no further need for sprays or coatings to achieve waterproofing. **All Bloc™** works with or replaces accelerators, retardants, plasticizers, corrosion inhibitors, and more.

Benefits of All Bloc™

- Virtually eliminates water absorption and other contaminants
- Measurably higher crush test results
- Increases durability and extends service life of concrete
- Resists Chloride Ion Penetration
- Excellent Freeze-Thaw tolerance
- Inhibits rust and deterioration of rebar, cable, and wire mesh
- Improves erosion resistance
- Inhibits mold, mildew and stains from contaminants
- Blocks efflorescence of minerals
- Makes concrete resistant to oil contaminants
- Improves workability of concrete finishing
- Adds plasticizer properties; less bleed water
- Adds water hydration properties; eliminates need for water reducer
- Increases air entrainment



Residential	Foundations, ICF walls, slabs-on-grade, basement damp-proofing, driveways, sidewalks, patios, columns
Commercial & Civil	Highways & bridges, parking structures, retaining walls, tilt walls, warehouse/distribution slabs, data centers, pavers & CMU
Water / Wastewater	Sewage & water treatment plants, potable-water tanks, concrete pipe, septic systems, canals, swimming pools
Industrial & Chemical	Secondary containment, chemical containment pits, plant floors, heavy-duty grout & mortar
Marine & Coastal	Seawalls, piers, bridges, saltwater-exposed structures, freeze-thaw critical zones (military-spec proven)
Military & Defense	Runways, bunkers, hangars, blast barriers, hardened aircraft shelters
DOE & Power Infrastructure	Secondary containment, waste vaults, transmission-tower foundations, substation pads, cable trenches, security barriers

POTENTIAL APPLICATIONS

All Bloc™ can be used in a wide variety of applications such as concrete slabs, retaining & foundation walls, footings, sidewalks & driveways, and lawn ornaments. It can be used for damp proofing basements, below grade parking, sewage plants, swimming pools, chemical retaining pits, water containment tanks, concrete pipe, and canals. **All Bloc™** also works great in grout, mortar, pavers, and concrete block.

All Bloc™ liquid admixture, is a cost effective, one-time treatment with permanent results.



FACTS ABOUT All Bloc™

99% Better than 99% permeability reduction under hydrostatic conditions

Water Permeability (DIN 1048)

After 28 days of wet curing, water permeability testing was performed on four cylinders (4"x8"), control and **All Bloc™**. Each cylinder was placed in an apparatus that applied 72.5 psi of water pressure to the bottom of each cylinder for a period of 72 hours.

All Bloc™ greatly outperformed the control samples in all 4 water permeability tests. Control cylinders experienced nearly total penetration (7 3/16" average), while All Bloc™ cylinders showed minimal surface water penetration (no water penetration was visible in 2 cylinders). All Bloc™ is competitive with any permeability reducing admixture for hydrostatic conditions (PRAH) in the concrete industry.

Compressive Strength

In lab testing, **All Bloc™** had a positive effect on the overall compressive strength of the concrete, when compared to control samples. Ultimately, **All Bloc™** increased the compressive strength of the concrete cylinders (4"x8") at 7-days, 28-days, and 56-days. Plasticizer properties affected by **All Bloc™** indicate an increase of Air Entrainment by about 3% to 3.5%. The cost of adding Air to the concrete mixture is therefore eliminated.

In a 7-day, 28-day, and 56-day compressive strength test, All Bloc™ outperformed the control cylinders by over 20%.

39% Strength increase in 7-day break test

23% Strength increase in 28-day break test

22% Strength increase in 56-Day break test (Air cured)

Plastic Properties

Control
Slump: **5"**
Air Content: **1.7%**
Unit Weight: **147.6 lbs/ft³**
Concrete Temp: **76°F**

All Bloc™
Slump: **4"**
Air Content: **3.5%**
Unit Weight: **147.2 lbs/ft³**
Concrete Temp: **75°F**

Concrete mix

Cement: **12.9 Lbs**
F Ash: **3.7 lbs**
Limestone #57: **67.6 lbs**
River Sand: **53.6 lbs**
Water: **9.8 lbs**

3000 psi concrete

*In accordance with ASTM, ACI, & Approved for use by Agencies of US Department of Defense

Lab Testing by MTSU School of Concrete and Construction

CIM CONCRETE INDUSTRY MANAGEMENT



CONCRETE

Rapid Chloride Ion Penetration (-64%)

All Bloc™ was tested against a typical 3000 psi concrete using the "Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration" (ASTM C 1202). The Control samples averaged 6,750 Coulombs penetration, while **All Bloc™** samples averaged only 2,400 Coulombs, a 64% reduction in chloride ion penetration. Low penetration indicates that **All Bloc™** admixture produces concrete that would perform very well in corrosive environments and inhibit rust. environments and inhibit rust.

Freeze-Thaw (323 cycles)

The "Standard Test Method for Resistance to Rapid Freezing and Thawing", ASTM C 666 (Standard of min 300-350 cycles or failure of 60% Elasticity Value) was conducted with a temperature range of 44 F to -4 F (slight widening of standard 40 F to 0 F). The Control samples (3000 psi mix) failed at an average number of 59 Cycles representing 40% Loss of Dynamic Modulus Frequency (Hz). With **All Bloc™** admixture, the concrete samples never failed and the testing was terminated after 323 Cycles with concrete integrity maintained.

Durability Factor (96.5) & Lifecycle Performance

Freeze-thaw testing demonstrates a significant improvement in the concrete durability when incorporating **All Bloc™** admixture. The calculated Durability Factor (DF) for the **All Bloc™** concrete was 96.5, compared with 5.86 for the standard concrete mix. In addition, the concrete incorporating **All Bloc™** exhibited an average 126% improvement in elasticity. A Durability Factor of 96.5 strongly indicates substantially improved resistance to freeze-thaw deterioration and the potential for significantly extended service life. Using **All Bloc™** admixture delivers improved performance in harsh environments, reduced lifecycle costs, lower total cost of ownership, and reduced lifecycle carbon emissions.

Plastic Properties

Control	All Bloc™
Slump: **2"**	Slump: **3"**
Air Content: **2.1%**	Air Content: **5.4%**
Unit Weight: **150.0 lbs/ft3**	Unit Weight: **145.3 lbs/ft3**
Concrete Temp: **76°F**	Concrete Temp: **77°F**

Concrete mix

Cement: **16.7 Lbs**
Limestone #57: **67.6 lbs**
River Sand: **53.6 lbs**
Water: **9.8 lbs**

3000 psi concrete

-64%
Chloride Ion Penetration

323
Freeze-Thaw Cycles
Zero Failure

96.5
Durability Factor
DF reference scale: 0-100%

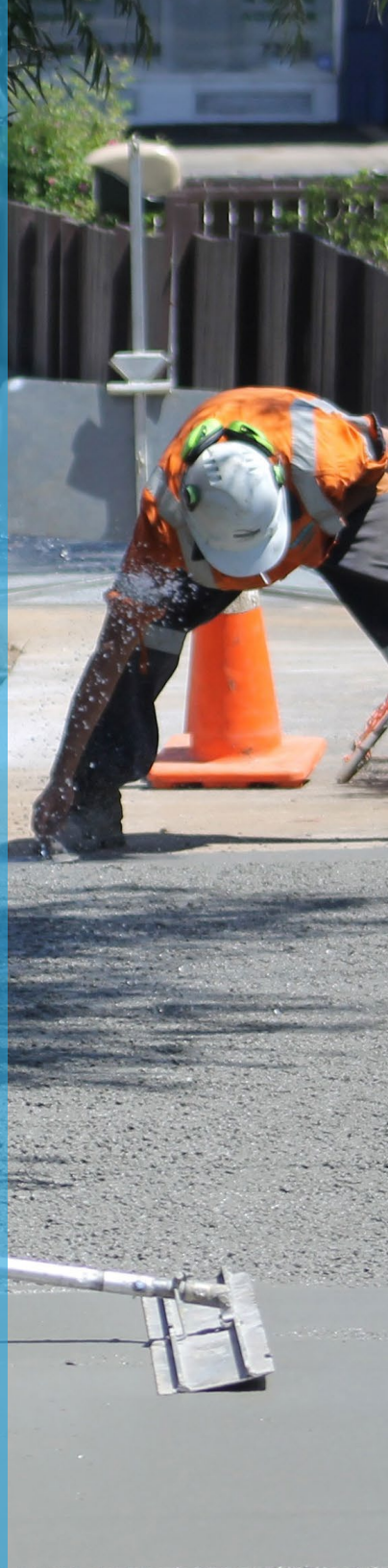
*In accordance with ASTM, ACI, & Approved for use by Agencies of US Department of Defense

Lab Testing by MTSU School of Concrete and Construction

CIM CONCRETE INDUSTRY MANAGEMENT







EndWater Solutions, LLC
Texas - 713.823.7146
Tennessee - 931.302.2100
Virginia - 423.240.6419
Washington - 360-558-0295