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Product Distinction:

Barrier One WPX is a demonstrated & certified complex sodium silicate-based Type "S" Waterproofing Admixture (per ASTM C494/ C494M). It is an integral waterproofing agent that produces low – permeability concrete across a wide spectrum of mix designs without the potential of contributing to surface coating delamination. WPX is typically utilized in footings, elevator pits, foundations, retaining walls and water retaining structures such as Water Treatment Plants (WTP) or Waste WTP projects that require demonstrated integral waterproofing capabilities. WPX is classified as a PRAH by ACI 212.3 R & is a recommended admix in combatting hydrostatic head pressures found in both below / above grade water retaining structures. Dosing WPX into your mix design provides results within 48 hrs. Integument H₂O is not required to activate this product. Bonding agents are not necessarily required to achieve sufficient bond for cementitious overlays or resinous coatings.

WPX compliments natural autogenous crack healing attributes present in many mix designs while improving other engineering qualities such as strength gain, shrinkage reduction, freeze thaw resistance, corrosion resistance, chloride resistance and carbonation resistance. WPX hydraulic conductivity pressure resistive capabilities have been certified through independent US Corp of Engineers CRD -48 testing .

Technical Data:

Appearance: Translucent Orange	Toxicity/ Vapors / Odors: None
Dosage: 12 oz. / Total 100 lbs. cwt	Flammability: None
Decanting: Not Required	Specific gravity: 1.28
Shelf Life: One Year from delivery	Ship Weight: 10.2 lbs./gal (net)
Freeze Temp: 32°F	Storage Temp: above 36°F
Rapid Strength Gain: Yes	VOCs: 0 g/l
Na ₂ SiO ₃ Complex Formula: Yes	Chlorine Content Added: None
Capillary Break: Yes	NSF / ANSI 61 Compliant

Dispensing:

- Utilized with Normal & Lightweight mix designs. Mix review required.
- Compatible with well consolidated steel & composite fibers.
- Dosage "WPX": 12oz volume / 100 lb. total cementitious with 1:1 mix water replacement. W/Cm mix design ranges of 0.40 to 0.52
 - "WPX" should be dosed separately from other admixes & at the tail-end of the load. Separate withheld tail water addition is acceptable. **Do not allow WPX to come in contact with dry cementitious materials.**
- For dosing accuracy & reporting, batch plant application are recommended. Onsite dosing is acceptable with minimum 7+ minute drum rotation and documented delivery ticket.
- Do not let the "WPX" material freeze at any point prior to application.

Concrete Performance:

- "WPX" has no deleterious concrete effect & does not accelerate or retard mix set times per ASTM C494 testing. It facilitates finishing by reducing bleed-water; creating a creamier / richer undiluted paste.
- Early strength gains are to be expected.
- Water reducing admixes are acceptable to achieve slumps > +4".
- "WPX" has minimal impact on slump. (≤ 0.5" slump loss)
- Added shrinkage reduction admixtures (SRA) or crystalline product utilization are not recommended.

Curing & Chemical Resistance:

Approved "WPX" mix design reviews offer an essential quality control component with regards to the project's long-term success. Barrier One Concrete Admixtures agrees with ACI in that; utilization of the "best" curing / material application practices are critical. One of the most effective means of improving the durability and service life of concrete is to prevent intrusion of deleterious substances into the concrete substrate. The less permeable the concrete; the more sustainable it becomes. Unlike membranes that deteriorate over time, a "WPX" application cannot delaminate, be punctured or damaged during back-filling. WPX reduces the possibility of ongoing concrete maintenance needs.

Aggressive deterioration substances such as chloride ions, airborne carbon dioxide and soil sulfates can diffuse into untreated concrete via surface micro cracks as well as pore and capillary tracts found in the substrate. Carbon dioxide intrusion can initiate steel reinforcement corrosion – contributing to an overall concrete pH reduction in the 9 - 9.5 range. "WPX" significantly reduces concrete porosity integrally by creating a non-soluble structure which further aides in the concrete's ability to naturally heal. This capillary block further reduces the diffusion rates of both gasses and liquids.

All chloride & sulfite chemical intrusions must be in the form of a liquid to attack concrete. This is a common problem for marine structures, roadway abutments & bridges. Independent permeability and chemical resistance studies attest to "WPX"'s ability to extend the service life of concrete by as much as twice (2X) when compared to an untreated control mix in the most difficult circumstances.

Typical Industry / Specification Considerations:

Curing compounds have no deleterious effect on "WPX" performance. **However**, if a curing compound or form release agent is utilized, coating manufacturer guidelines regarding surface prep must be followed.

The "WPX" material shall not be allowed to freeze any time before dosing. The "WPX" admix is dosed separately at the tail end of a RM truck directly into the concrete and mixed for a minimum of 7+ minutes. "WPX" is not surface applied. This technology is compatible with plasticizers, & both high / low range water reducers. It is fully compatible with fly ash & slag replacement. "WPX" is not compatible with the addition of crystallines or shrinkage reduction admixtures. "WPX" will not accelerate nor retard your mix set. As described by finishers; "WPX" reduces bleed water - which in turn leads to a smoother / creamier paste.

The environmental impact of any concrete placement can have effect both now and in the future. "WPX" offers extended service life and reduced maintenance - minimizing the full impact that the structure may have over its planned life cycle