

### Product Distinction:

Barrier One "PIA"® is an advanced concrete enhancement technology developed by chemistry, concrete & flooring experts, to expedite fast – track projects. "PIA" technology is proven to integrally densify & reduce slab permeability without the use of sodium silicates.

"PIA"s proprietary USA manufactured ingredients are integrally combined with existing elements of your mix design initiating capillary breaks within the concrete. These chemical reactions create abundant insoluble hydration products; permanently disrupting your concrete's natural capillary / pore structures. These reactions eliminate the movement of critical level moisture vapor emissions into & out of the concrete.

"PIA" admix is molecularly marked & has been extensively tested in both laboratory and field conditions.. This admix has demonstrated increased early strength gains creating a denser concrete resulting in reduced slab curl. "PIA" is an independently certified to reduce shrinkage, ASR, & corrosion while demonstrating permeability results.

### Technical Data:

Appearance: Translucent Blue	Toxicity/ Vapors / Odors: None
Dosage: 14 oz. / Total 100 lbs. cwt	Flammability: None
Ph: 11.3	Specific gravity: 1.22
Shelf Life: One Year from delivery	Ship Weight: 9.6 lbs./gal (net)
Freeze Temp: 32°F	Decanting: Not Required
HPD: Available / tested	VOCs: 0 g/l
Sodium Silicates: None	Chlorine Content Added: None
Capillary Break: Yes	NSF / ANSI 61 Compliant

### Dispensing:

- Utilized w/ Normal & LW mix designs. Mix review required.
- Compatible w/ well consolidated steel & composite fibers.
- Dosage "PIA": 14oz volume / 100 lb. total cementitious w/ 1:1 mix water replacement. W/Cm mix design ranges of 0.31 to 0.52
- "PIA" should be dosed separately from other admixes & at the tail-end of the load. Separate withheld tail water addition is acceptable.
- For dosing accuracy & reporting, batch plant application is recommended. Onsite dosing is acceptable with minimum 7+ minute drum rotation and documented delivery ticket.
- Do not let the "PIA" material freeze at any point prior to application.
- Approved for ANSI A118.4, ANSI A118.11, ANSI A118.15 Mortars

### Concrete Performance:

- "PIA" 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.
- Water reducing admixes are acceptable to achieve slumps > +4".
- "PIA" has minimal impact on slump. (≤ 0.5" slump loss)
- Added shrinkage reduction admixtures (SRA) or crystalline product utilization are not recommended.
- 3" minimum slab depth for warranty consideration per ASTM 302.1R

### Curing:

The Company concurs with ACI 302.2R-06 that any slab receiving moisture sensitive flooring; "shall be cured & covered with waterproof paper, plastic sheets, or a combination of the two for 3 to 7 days". Although leaving the plastic down longer is acceptable; "PIA" dosed slabs only require 24 -48 hours of cure by this means & method. Curing compounds have no deleterious effect on "PIA" performance. **However**, if a curing compound is utilized, adhesive manufacturer guidelines regarding floor prep must be followed per ASTM F-710.

### Typical Industry / Specification Requirements:

Approved "PIA" mix design reviews offer an essential quality control component with regards to the project's success. Classified as a C-494 Type "S" liquid admix; "PIA" technology will not interfere with the bonding of cures, primers, adhesives, thin-sets, resinous coatings or cementitious underlayment products. The material shall not be allowed to freeze anytime before dosing. The "PIA" admix is dosed separately at the tail end of a RM truck directly into the concrete and mixed for a minimum of 7+ minutes. The "PIA" is integral to the mix design & not surface applied. This technology is compatible with plasticizers, & with both high & low range water reducers but, should not be utilized with crystallines or other shrinkage reduction admixtures. "PIA" will not accelerate nor retard your mix set and is described by finishers as reducing bleed water which in turn leads to a smoother / creamier paste.

The use of Barrier One "PIA" admixture must be registered prior to any concrete placement for warranty consideration. In most instances, a certified / independent 3<sup>rd</sup> party serves as the project's inspection company of record and is present at every concrete placement. This onsite agency is typically hired by the Owner or GC & casts daily cylinders for structural, petrographic or hydraulic conductivity testing analysis. These contracted representatives will be contacted by the Company and must be present on all dosed "PIA" jobsite placements. One daily cylinder collected by this agency will be tested by the Company for internal quality control assessments and in part utilized for future warranty consideration.

All slabs on ground (SOG) require the use of an ASTM E 1745 certified vapor retarder (VR) Class A or B, installed and detailed per ASTM E 1643. This is a basic industry standard required by both ACI 302.2 R & ASTM F-710. For all SOG applications, flooring manufacturers require that the VR be adequately detailed & be in direct contact with the concrete - photographic documentation is expected.

Barrier One admixtures do not rely on random field moisture testing (FMT) data points for its warranty consideration. Although, if FMT is adequately conducted the Company could offer warranty consideration up to 25 lbs. per ASTM F1869 or 100% RH per ASTM F2170.

Extensive independent bond testing has been conducted on project sites for all types of adhesive & cementitious related products. In short; if your natural / synthetic or cementitious material adequately bonds to a nonporous densified – burnished, power-troweled surface or a shotblasted substrate ... the material will adhere to "PIA" dosed concrete.

Standards are periodically revised, consult with the issuing organizations as to the current edition of the applicable standards. Upon meeting relevant flooring manufacture material design application & installation instruction requirements for a defined "nonporous" concrete substrate with serviceable space conditions; "PIA" utilization allows flooring installation in as little as 7 days. Failure to follow the concrete & flooring industry's "best" placement, finishing and curing practices or failure to follow adequate design & floor application specifications, including floor prep & "best" manufacturer installation practices will void warranty consideration. See exclusive & separate "Life of the Concrete"® Warranty for further detail.