

Vapor Lock™ 20/20

MVRA - MOISTURE VAPOR REDUCING ADMIXTURE
ASTM C494 Type S Admixture

Product Description

Vapor Lock 20/20 is an liquid admixture designed to provide a permanent capillary break that greatly reduces the permeability in concrete. A complex aqueous solution that reacts with the calcium hydroxide present from cement hydration and the extra mix water (not needed for hydration) creating relatively large amounts of additional c-s-h gel. This extra c-s-h disrupts the formation of a capillary system and provides for a slower, controlled "internal cure" that allows for greater and more thorough cement hydration. It is clear in appearance and weights approximately 9.8 lbs./gallon.

Product Advantages

- Produces a concrete with an Ultra Low Permeability (warranted to be less than 0.174 US Perms) that does not allow for the movement of water or moisture/vapor through the concrete.
- Acts a Moisture/Vapor Reducing Admixture (MVRA) that when used in conjunction with several common sense practices provides for a formal written 10-Year plus Warranty and a third-party \$20 Million (CAD) project specific Insurance policy under written by Lloyds of London.
- By greatly reducing the egress/ingress of water and moisture, and thus ions and sulfates entering the matrix, Vapor Lock provides for a denser, more *Durable* plain or restrained piece of concrete.
- Because of greater hydration and more developed cement pore structure with Vapor Lock, it produces concrete with significantly less Long-Term drying shrinkage, in either plain or restrained concrete. Slab curl and ASR is also greatly reduced. Compressive strength is **not** lowered.

Product Uses

Vapor Lock should be used whenever a moisture "intolerant" flooring, coatings or paints are being used. It is equally effective in horizontal slabs and vertical walls, and is crucial in lightweight aggregate mixes, due to the extra water that is involved. Highly recommended in truncated construction schedules (any time 30 days per inch of concrete thickness within a conditioned environment is not possible) and when non-breathable flooring and coatings are specified (particularly heat-welded seams, rubbers, etc.) Healthcare and Sports flooring are both high risk areas that would dictate use as well. Flooring, Coatings & Paint can usually be installed 25 days after concrete placement; earlier installs are possible with certain modifications.

Product Warranty

Vapor Lock 20/20 Admixture is warranted to be free from defects and to perform as intended. Beyond that, there is a Performance Warranty (If your floor fails...we will replace it) & a third party Insurance policy available when the below requirements are met -

1. A Class A Vapor Retarder, conditioned and tested to act as a Barrier (per ACI guidelines, 0.01 US Perms) is properly installed (per ASTM D1643 and the manufacturer's guidelines) and used directly under the concrete slab-on-grade. This does not apply for suspended slabs.

CSI MasterFormat Involving Vapor Lock -

03 00 00 Concrete -
 03 30 00 Cast-in-Place Concrete
 03 40 00 Precast Concrete
 03 50 00 Cast Decks and Underlayment

07 00 00 Thermal and Moisture Protection -
09 00 00 Finishes -
 09 60 00 Flooring
 09 70 00 Wall Finishes
 09 90 00 Painting and Coating

2. The mix being used shall be submitted to SPG for approval and does not exceed 0.52 w/cm ratio in design.
3. From each day of Vapor Lock placements, two 4"x 8" test cylinders are prepared per ACI guidelines from two random trucks and stored in a cool, dry place. Specimens will be collected, kept and tested at SPG's expense.
4. For first time participants, there should be a pre-job meeting with everyone involved, discussing contents of Spec Data information; including beginning finishing procedures 10-15 minutes earlier (as there is little to no bleed water on the surface), similar set and finish procedures, and any vapor barrier installation questions.
5. Curing procedures are highly recommended in hotter/windier/drier areas and either 2-3 mil visqueen over the surface for 48 hours or a self-desiccating, water-based curing compound are the norm. Normal floor prep involves some sanding/mechanical surface abrasion to insure any curing compound remaining, is removed prior to flooring - but all critical paths in this regard should be discussed prior to execution.
6. At least one test specimen will be tested per ASTM D5084 - Coefficient of Permeability, by SPG (manufacturer) and the results will be referenced in both the warranty and insurance documents.
7. There are two tests performed by SPG prior to the main significant flooring/coating installations; a modified Mat Test (ASTM D4263 modified with ASTM F2659/Tramex Meter) and a bond test performed in conjunction with the flooring contractor. Results will also be referenced in the warranty and insurance documents.

Finishability

The rheology of Vapor Lock enhanced concrete is increased with additional fines and an absence of bleed water (after screeding and floating). Most mixes experience about a ½ inch increase in slump and a noticeable increase in paste. This allows for a superior finish; either a rough broom or hard towed finish with tighter surface tolerances.

Packaging & Handling

Vapor Lock is sold and supplied only through commercial ready mix producers and licensed pre-cast facilities. It is measured and added under the direction of only state licensed readymix weight masters. It comes in 275 & 330 gallons standard IBC totes and 55-gallon drums. It has a one year shelf life and should not be allowed to freeze.

The Vapor Lock admixture shall be considered part of the total water in the mix design. The admixture shall be delivered as a ready-to-use liquid product and shall require no mixing at the batching plant or job site. In regards to actual mix performance, pre-testing is recommended. Please consult your SPG/Vapor Lock representative for guidance. Vapor Lock is a registered trademark of Specialty Products Group.

Addition Rates & Dispensing

Vapor Lock is dosed based of off cementitious material - 10 ounces per hundred weight. *Both cement and supplemental materials (fly ash, slag, etc.) are taken into account.* Vapor Lock should be added with the majority of head waters, which usually occurs in the beginning sequence. Either portable dosing units or permanent, high-volume, automatic dosing systems wired directly into the batching panel are available.

Compatibility with Other Admixtures

Vapor Lock can be used with a full array of other types and other manufacturers of admixtures - with the exception of another Shrinkage Reducing Admixture. DELAMINATION WILL OCCUR. Other admixtures should be kept separate from Vapor Lock and added under their own directions. Vapor Lock can be used with air entrained mixes.

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