Product Information

PREVent-C®
Shrinkage-reducing Admixture

Description: Shrinkage-reducing and crack-control admixture for cementitious mixes.

Typical Properties:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Free-flowing powder, off-white to light brown</td>
</tr>
<tr>
<td>Density</td>
<td></td>
</tr>
<tr>
<td>Loose bulk density (lb/ft³)</td>
<td>43.3</td>
</tr>
<tr>
<td>Tapped bulk density (lb/ft³)</td>
<td>59.5</td>
</tr>
<tr>
<td>pH (10% aqueous slurry)</td>
<td>10-11</td>
</tr>
</tbody>
</table>

Product Description: PREVent-C admixture is a specially formulated powder that provides dual functionality to prevent cracking or curling caused by shrinkage. PREVent-C can reduce shrinkage-induced cracking by as much as 90 to 100%, depending on mix design and amount of PREVent-C used. A minimum of 80% shrinkage reduction can be expected in most cases. Based on new, innovative technology developed by PremierCPG, the material is designed to facilitate expansion of concrete at the same rate as drying shrinkage during the curing period, and to reduce the capillary surface tension of pore water. Surface tension of capillary pore water has been linked to formation of a meniscus during hydration, which accounts, at least partially, for shrinkage. Expansion ceases within 28 days during hydration and does not continue once the concrete has hardened. PREVent-C has no known detrimental effects on either plastic or hardened properties of concrete and cementitious mixes. In air-entrained concrete, a small increase in air-entraining admixture may be necessary to obtain desired air content. Admixture meets ASTM C 494 Type S standards.

Uses: PREVent-C can be used in all types of concretes and mortars, whether cast-in-place, mass, precast or prestressed. The material can be used in straight Portland cement mixes or blended cement mixes. Typical applications include bridge decks, parking structures, dams, runways, stadiums, flooring applications, decorative concrete, and masonry or tile grouts and mortars. The material is especially effective where concrete is highly restrained, like with most steel or other reinforced concrete applications. It is also effective with both air-entrained and non-air entrained concrete. Because it is

For orders or technical questions, contact Premier CPG Customer Service at 1-800-227-4287, or your local distributor.
a free-flowing powder, PREVent-C can be pre-blended with dry packaged mixes, mortars and grouts, or added at the time of use. The material also is effective for use with shotcrete mixes. PREVent-C reduces both drying and autogenous shrinkage-induced macrocracks and microcracks in concrete, which enhances its sustainability. PREVent-C does not contain chlorides or other materials that could contribute to corrosivity of reinforcing steel.

Performance: Figure 1 illustrates the effectiveness of PREVent-C in reducing drying shrinkage in ASTM C157. At 5 addition, based on cement content, PREVent-C reduced shrinkage microstrain to below 0.06 in 28 days and did not exceed 0.09% even after 56 days in mixes at both 0.35 w/c and 0.45 w/c. This level of shrinkage-versus-control is expected to significantly reduce shrinkage-induced cracking.

Testing in mortar on the ASTM C1581 ring test yielded no cracking after >200 days, at which time the test was stopped as microstrain actually was decreasing slightly, indicating no cracking was expected.
PRE Vent-C may cause slight retardation of set time, varying according to the mix and source of cement. When using PRE Vent-C, a slight decrease in air content may be experienced that can easily be adjusted by a small increase in the addition rate of air-entraining agent. No known negative effects on strength gain or plastic properties of concrete are expected by the addition of PRE Vent-C to the concrete mix.

Benefits:

- Significantly reduces shrinkage cracking
- Reduces compressive creep
- Reduces autogenous shrinkage
- Improves durability
- Decreases curling and related cracks
- More effective and economical than alternative SRAs
- Allows for reduced usage of control joints
- Reduces water and salt infiltration by reducing cracks

Addition Rates:

Typical PRE Vent-C addition rates are 5% w/w addition, based on cement content, or 5 lbs. for each 100 lbs. of cement in concrete, mortar or grout. Depending on the mix, this usage level is expected to decrease shrinkage cracking and creep by more than 80%. Addition rate can be varied (higher or lower) to obtain the desired shrinkage-cracking requirements. It is recommended that trial mixes be tested according to ASTM C157 prior to placement.

TO PREVENT DRYING SHRINKAGE, ENSURE THAT PROPER CURING IS PROVIDED WHEN PLACING CONCRETE. PRE Vent-C is not designed to compensate for improper or inadequate curing procedures.

Usage:

PRE Vent-C should be added to the mix as a powder, just like cement or pozzolans. Do not pre-dissolve or mix as a slurry in water before adding. PRE Vent-C should be added to the mix before other admixtures or water. Allow sufficient time for mixing (minimum 60 seconds) to ensure even distribution of product in the mix.

Material has been tested for compatibility with several admixtures. While no negative interactions have been observed, it is always prudent to test mixes with other admixtures being used to avoid unexpected negative effects.

For orders or technical questions, contact Premier CPG Customer Service at 1-800-227-4287, or your local distributor.
PRE Vent-C® Shrinkage-reducing Admixture

Packaging: PRE Vent-C is available in 50-lb. lined bags and 1,000- and 2,000-lb. lined bulk sacks. Bulk truckload or railcar delivery is available upon request.

Handling and Storage: Store in a dry, protected place. The product is stable under normal conditions of dry storage. Do not allow water to get inside containers; reaction with water will cause the product to swell, generate heat, and expand its container. Exposed, unprotected material will absorb moisture and carbon dioxide from the air. Minimize the generation of dust during handling and transfer of material. While PRE Vent-C has low toxicity, appropriate personal protective equipment always should be worn when handling material. See MSDS for more information.

PREV-C® is a U.S. trademark of PREMIER CPG, a division of Premier Magnesia, LLC
300 Barr Harbor Drive, Suite 250, West Conshohocken, PA 19428
Telephone 1-800-227-4287 www.premiercpg.com

PRODUCT WARRANTY: Premier warrants that its Products shall be free from defects in material and workmanship and shall substantially conform to Premier’s Product specifications upon shipment. If Buyer believes this warranty has been breached, it will provide written notice to Premier as soon as the defect becomes apparent, but no later than six (6) months from the date of shipment. If during the warranty period the Products are found to be defective in material or workmanship or fail to substantially conform to Premier’s Product specifications, Premier will furnish replacement Products, ex-works jobsite, or at Premier’s option, refund the purchase price, provided the Buyer has stored and installed the Products in accordance with Premier’s instructions and provided further that Premier is given the opportunity to inspect and test the Products within fifteen (15) days from when the defect becomes apparent and is given access to all necessary operating records with respect to the use of the Products. THE EXPRESS WARRANTY SET FORTH IN THIS ARTICLE IS EXCLUSIVE, AND NO OTHER WARRANTIES OF ANY KIND, WHETHER STATUTORY, ORAL, WRITTEN, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY. THE BUYER’S EXCLUSIVE REMEDIES AND PREMIER’S ONLY OBLIGATIONS ARISING OUT OF OR IN CONNECTION WITH DEFECTIVE MATERIAL OR WORKMANSHIP, WHETHER BASED ON WARRANTY, CONTRACT, TORT (INCLUDING NEGLIGENCE) OR OTHERWISE, SHALL BE THOSE STATED HEREIN.

LIMITATION OF LIABILITY: The liability of Premier, its agents, employees, subcontractors and suppliers with respect to any and all claims arising out of the performance or nonperformance of obligations in connection with the design, manufacture, sale, delivery, storage, installation or use of the Products or the rendition of services, whether based on contract, warranty, tort (including negligence), strict liability or otherwise, shall not exceed the Contract Price and shall in no event include damages for loss of profits or revenue or the loss of use of either; loss by reason of plant shutdown or inability to operate at rated capacity; increased expense of operation of plant or equipment; increased costs of purchasing or providing equipment, materials, supplies or services outside of Seller’s scope of supply; or incidental or consequential damages of any nature. No such claims shall be asserted against Seller, its agents, employees, subcontractors or suppliers, unless the injury, loss or damage giving rise to the claims is sustained prior to the expiration of the period of warranty specified herein, and no suit or action thereon shall be instituted or maintained unless it is filed in a court of competent jurisdiction within one (1) year after the date the cause of action accrues. This LIMITATION OF LIABILITY Article shall apply to and prevail over any and all provisions contained in any of the documents comprising the Contract.

For orders or technical questions, contact Premier CPG Customer Service at 1-800-227-4287, or your local distributor.