

## FR-1

## Water Reducing Admixture

Fritz-Pak FR-1 is a dry, powdered admixture packaged in a ready-to-use, **water-soluble bag**. FR-1 is formulated to produce a more uniform and workable mix that yields stronger more durable concrete with less water. FR-1 is recommended for stuccos, bagged concrete, grout, and other cement based materials. It does not contain calcium chloride or other corrosive materials.



No 95910

## MEETS STANDARDS

ASTM C-494 Type D;  
AASHTO M-194; CRD C-87

## PACKAGING:

<b>SIZE</b>	1 lb. Bags
<b>BAGS/CASE</b>	30
<b>CASES/PALLET</b>	25

*Also available in 50 lb. bags*

## ADVANTAGES

- Increased compressive & flexural strengths
- Improved cohesiveness & reduced segregation in the mix
- Improved concrete durability
- Reduced water requirements up to 10%



## DOSAGE

Use a dosage rate equal to 1.5 to 2.0 ounces per 100 pounds (1.0 to 1.2 grams per kilogram) of total cementitious materials (0.10 to 0.12%). Using FR-1 at the recommended dosage rate, 5 to 7 percent water reduction can be achieved. Concrete temperature, ambient temperature or concrete mixes containing accelerators, retarders, or special admixtures such as silica fume may require dosage rates outside the recommended range. Contact your Fritz-Pak distributor with any questions concerning the dosage rates for this product. It is recommended that testing be done to determine the suitability of FR-1 to your mix designs.

## DIRECTIONS

1. Determine the amount of FR-1 required. See Recommended Dosage Rate.
2. Each FR-1 package is double bagged. Remove the protective outer bag and add the water-soluble Fritz-Pak inner bag to the concrete mix. The entire inner bag will easily dissolve.
3. Mix at high speed for 5 to 7 minutes to insure that the FR-1 is uniformly dispersed throughout the mix. Improper mixing can result in poor performance.

## FREQUENTLY ASKED QUESTIONS

- Q.** What is the shelf life of FR-1?  
**A.** If stored properly, about 1-2 years. If the material ever seems hard or caked, do not use it. It will not break up in the mix.
- Q.** What is the difference between a water reducer and a superplasticizer?  
**A.** Both have the ability to chemically disperse cement, without the addition of water. That is why they are called water reducers. A water reducer has a limited capability in dispersion or water reduction, usually no more than 10% water reduction. A superplasticizer is a much stronger material and can reduce water content up to 40 %.
- Q.** Will FR-1 discolor the concrete?  
**A.** No, at the recommend dosage rate FR-1 will not discolor the concrete
- Q.** Does FR-1 affect the strength of the concrete?  
**A.** Yes, if you use less water when adding FR-1, your concrete will be stronger. If your water content is not changed, strength is not changed.

- Q.** Will it change the set time?  
**A.** Yes. It is a slight retarder.
- Q.** Will FR-1 effect the air content?  
**A.** No.
- Q.** What standards does it meet?  
**A.** Meets ASTM C-494 Type D, AASHTO M-194 & CRD C-87.
- Q.** Can I lower my cement content?  
**A.** Yes. By lowering the water/cement ratio you can expect higher strengths. You can lower your cement content to lower your strength to meet your specification.
- Q.** What are the best applications of FR-1?  
**A.** FR-1 is extensively used as an ingredient in the manufacture of stuccos, bagged concrete, mortars, color hardeners and other cement based materials. Besides water reduction, it can also be used as a retarder for products used in warm weather conditions.

## COMPATIBILITY & PRECAUTIONS

FR-1 is compatible with most concrete and cement admixtures. When using more than one admixture, each product should be dispensed separately. FR-1 does not contain calcium chloride, nitrates, or other potentially corrosive materials. Store in a dry location, protected from breakage, deterioration, and contamination. FR-1 is not subject to damage from freezing temperatures.

## WARRANTY

The information and recommendations in this publication are, to the best of our knowledge, reliable. Suggestions made concerning uses or applications are only the opinion of Fritz-Pak Corporation and users should make their own tests to determine the suitability of these products for their own particular purposes. Because of numerous factors affecting results, Fritz-Pak Corporation makes no warranty of any kind, expressed or implied, including those of merchantability and fitness for purpose. Statements herein, therefore, should not be construed as representations or warranties. The responsibility of Fritz-Pak Corporation for claims arising out of breach of warranty, negligence, strict liability, or otherwise are limited to the purchase price of the materials.

© 2023 Fritz-Pak Corporation