

## NON-SHRINK GROUT FLUIDIFIER

### ADVANTAGES

- Increased compressive, shear and bond strength.
- Increased water retention.
- Reduced water requirements.
- Extended working life.
- Higher strengths may be achieved more economically.
- Easily adaptable to leaner mixes.
- Improves grout workability with no loss in strength.
- Expansion provides better contact with surrounding surfaces.
- Improves water-tightness by reducing cracks and cold joints.
- Improves cohesiveness and decreases bleeding and segregation.
- Reduced time and labor costs for placement.
- Allows ease of placement in difficult areas such as high density steel reinforcement.

### DESCRIPTION

Fritz-Pak NS-7 is a ready-to-use dry powdered admixture for portland cement grouts. NS-7 is formulated to produce a more uniform and workable non-shrink grout with less water, improved flowability and extended set times. As a non-shrink additive, NS-7 will allow slow, controlled, in-place expansion prior to hardening. As a grout fluidifier, NS-7 will greatly enhance flowability allowing ease of placement with extended handling and set times. NS-7 also significantly reduces water requirements, 10 to 20 percent, yielding increased compressive and flexural strengths. NS-7 is recommended for all types of high-lift portland cement grouting applications where improved non-shrink performance with increased flowability is desired. NS-7 does not contain calcium chloride, nitrites, nitrates or other potentially corrosive materials and is compatible with all standard grout additives.

### DIRECTIONS

NS-7 should be added in powdered form to the grout mix at the job site, rather than the plant, to ensure no reduction in expansive action and to provide maximum flowability.

1. NS-7 should be used in grouts containing at least six sacks of Type I or Type II portland cement. NS-7 may be added before or after



- adding water into the mix. If using the 1-lb water soluble bags to prepare the grout, one bag per sack of cement is the recommended dosage.
2. Each NS-7 bag is double-bagged. Remove the protective outer plastic bag and introduce the entire inner water soluble bag and its contents into the mix.
  3. Mix thoroughly for at least 5 minutes after adding water. **Improper mixing can result in poor performance.**

### RECOMMENDED DOSAGE RATE

**One pound of Fritz-Pak NS-7 is recommended for each 100 pounds of cementitious material (1% bwc) to provide proper expansion and fluidifying characteristics.** Grout temperature, ambient temperatures or grout mixes containing accelerators, retarders, or special admixtures such as silicafume may require dosage rates outside the recommended range. Contact your Fritz-Pak distributor with any questions concerning the dosage rates for this product. We recommend that testing be done to determine the suitability of NS-7 to your grout mixes.

### COMPATIBILITY

NS-7 is compatible with all air-entraining admixtures, calcium chloride and other admixtures. When used with other admixtures, each one must be dispensed separately into the mix.

### PACKAGING

- 42-lb (19-kg) paper bag, 60 bags per pallet (item #97080)
- 1-lb (454-g) water soluble bag, 30 bags per case, 42 cases per pallet (item #97081)

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### FAQs

- Q. What is the shelf life of NS-7?  
A. If stored properly, about 2-4 years. **If the material ever seems hard or caked, do not use it. It will not break up in the mix.**
- Q. How does NS-7 work and produce a non-shrink grout?  
A. It contains an ingredient that generates gas and produces expansion. Expansion occurs before set in order to fill all voids and cavities.
- Q. Is the expansion destructive?  
A. No. Since the expansion is made by gas, it will not be strong enough to break any forms.
- Q. Is there any expansion after setting?  
A. No.
- Q. What type of gas is generated?  
A. Hydrogen.
- Q. Are there any special guidelines for the application of non-shrink grouts made with NS-7?  
A. Generation of gas starts within 5 minutes of adding water and will continue for approximately 1 ½ hours. The sooner the grout is placed, the greater the expansion it will give. The grout should not sit more than 1 ½ hours before it is used.
- Q. Does NS-7 work with calcium aluminate cements?  
A. Yes. It is also effective with fast set cements.
- Q. Does NS-7 contain a water reducer?  
A. Yes.
- Q. For grouts made with NS-7, do I follow standard concrete testing procedures?  
A. No. Compressive strength needs to be tested using restrained cylinders or molds.

If not done this way, compression strengths will be lower. See ASTM C 1107 for further reference.

- Q. Can I use NS-7 for block fill material?  
A. Yes.
- Q. What are the standards for NS-7?  
A. NS-7 is used to produce non-shrink grouts. It is the grout produced that needs to conform to the specifications. With NS-7 you can produce grouts that conform to ASTM C 1107, Grade "A" Pre-Hardening Volume-Adjusting.
- Q. What are the best applications for NS-7?  
A. NS-7 is used to prepare non-shrink grouts used in block filling, hollow core filling, ICF grouting, back filling in tunnels, back filling of pipes and in general for filling voids where low to moderate strengths are required.

### PRECAUTIONS

NS-7 is not recommended as a non-shrink additive for conventional concrete applications. All Fritz-Pak Concrete Admixtures should be stored in a dry location protected from breakage, deterioration and contamination. They are 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.

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