



FRITZ-PAK NCA

Non-Chloride Accelerator

ADVANTAGES

- Accelerates the set-time
- Provides higher early strength
- **NCA** does not promote steel corrosion.
- Dosage can be increased for faster acceleration
- **NCA** can be easily stored for use as needed.
- The material does not require heated warehousing.
- Can be used in all weather.
- Acceleration is dependent on the dosage used.
- The need for protection and heating of concrete in cold climates is reduced or eliminated.
- Allows faster reuse and stripping of forms.
- Suitable for all types of concrete.
- **NCA** is packaged in a patented water-soluble Fritz-Pak inner bag for convenient use at the plant or job site.

DESCRIPTION

Fritz-Pak **NCA** is a non-chloride accelerator in powdered form. It is packaged in water soluble bags for easy addition to concrete ready mix trucks. It shortens set times while increasing early compressive strength. Fritz-Pak **NCA** does not contain calcium chloride or any other materials that promote corrosion in steel. Unlike some other non-chloride accelerators, such as those containing calcium nitrite, Fritz-Pak **NCA** is not hazardous. No special handling, storage or transportation expense is required.

RECOMMENDED DOSAGE RATE

Dosage rate varies depending on temperature and the amount of acceleration desired. Increased dosages provide higher acceleration rates. Recommended dosage is 1-3 bags per cu yard of concrete (1-3 lbs/cwt – 1-3% by weight of cement). Higher dosages may be used for faster acceleration. Some typical effects of Fritz-Pak **NCA** at different temperatures are presented below. Dosage percentages are percent of Fritz-Pak **NCA** by weight of cement.

Table 1. Observed changes in set time with use of **Fritz-Pak NCA** at different temperatures and different dosages. Dosage expressed in percent of **Fritz-Pak NCA** by weight of cement.

TEMPERATURE		INITIAL SET TIME (HH:MM)			FINAL SET TIME (HH:MM)		
°C	°F	Control	1% NCA	2% NCA	Control	1% NCA	2% NCA
4.4	39	7:12	5:24	3:48	11:36	8:42	6:48
21.3	66	4:18	3:12	2:18	6:18	4:36	3:54
38.1	93	2:12	1:36	1:24	3:36	3:06	2:24
TEMPERATURE		INITIAL SET ACCELERATION (HH:MM)			FINAL SET ACCELERATION (HH:MM)		
°C	°F	Control	1% NCA	2% NCA	Control	1% NCA	2% NCA
4.4	39	00:00	1:48	3:24	00:00	2:54	4:48
21.3	66	00:00	1:06	2:00	00:00	1:42	2:24
38.1	93	00:00	0:36	0:48	00:00	0:30	1:12

continued...

DIRECTIONS

1. Determine the amount of **NCA** required. See Recommended Dosage Rate.
2. Each **NCA** package is double bagged. Remove the protective outer bag and add the entire water-soluble Fritz-Pak inner bag and contents to the wet concrete mix. The inner bag will easily dissolve.
3. Mix thoroughly for at least 5 minutes at high speed to ensure proper dispersion throughout the mix.
4. When working at low temperatures, users should follow the ACI Guidelines and Specifications for Cold Weather Concreting (ACI 306R-88 and ACI 306.1-90).

COMPATIBILITY

Fritz-Pak **NCA** is compatible with most concrete admixtures. When used with other admixtures, each one should be dispensed separately into the mix. Effectiveness of **NCA** is dependent on the proportion of C3A to SO₃ in the cement. Higher acceleration will be obtained in cements with ratios greater than 4.0. In general, higher accelerations will be obtained in mixes with type I, III or white cement.

APPLICABLE STANDARDS

ASTM C-494 Types C and E. Certification pending.

Notes:

PACKAGING

Fritz-Pak **NCA**

- 5 lb (2.27 kg) water soluble bag, 8 bags per case, 384 bags per pallet (item #98450)

PRECAUTIONS AND STORAGE

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. However, the inner bag may become somewhat brittle at very low temperatures and should be handled carefully.

DISCLAIMER

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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Also available:

- **Mini Delayed Set**
Small (8-oz) bag retarder for emergencies, small concrete batches, concrete pump hoppers or for wash-water stabilization
- **Standard Delayed Set**
Delayed set admixture for set retardation with minimal effect on concrete early strength development. In 2-lb bags.
- **FR-1**
Retarder with water reduction capabilities.
- **Expo-Rock**
Concrete surface retarder for production of exposed aggregate finishes
- **Specialty Retarders**

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Contact Fritz-Pak for information on:

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