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# RUSSTECH<sup>®</sup>

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## CSA RETARDER

### *SPECIALIZED SET RETARDING ADMIXTURE FOR CALCIUM SULFOALUMINATE CEMENT SYSTEMS*

#### **DESCRIPTION:**

**CSA RETARDER** is a set retarding admixture designed for use with Calcium Sulfoaluminate Cement Systems. It will extend the working time based on dosage to facilitate the placing and finishing of concrete while providing control over the set time.

#### **ADVANTAGES:**

- Designed especially for Calcium Sulfoaluminate Cement Systems
- Provides variable control of setting time based on dosage rate
- Increases strengths both compressive and flexural
- Increases density and relative durability
- Resists damage caused by freezing and thawing
- Helps reduce segregation
- Provides superior finishability on all flatwork and pre-cast surfaces
- Improves pumpability of concrete

#### **SPECIFICATIONS:**

Conforms to:  
ASTM C 494 Types B and D  
AASHTO M 194 Types B and D  
CRD C 87 Types B and D  
All other Federal and State specifications

#### **TECHNICAL NOTE:**

**CSA RETARDER** does not contain calcium chloride or any chloride-based components. It will not promote or contribute to corrosion of reinforcing steel in concrete.

#### **COMPATIBILITY:**

**CSA RETARDER** is compatible with all types of Portland cement, class C and F fly ash, silica fume, fibers, approved air entraining, water-reducing, and superplasticizing admixtures.

**CSA RETARDER** can be used in white, colored, and architectural concrete. For best results, each admixture must be added separately into the concrete mix.

#### **STORAGE:**

**CSA RETARDER** may freeze at temperatures below 35° F (2° C).

Although freezing does not harm **CSA RETARDER**, precautions should be taken to protect it from freezing. If it should happen to freeze, thaw and reconstitute with mechanical agitation. **DO NOT USE PRESSURIZED AIR FOR AGITATION.**

#### **PACKAGING:**

5-gallon pails, 55-gallon drums,  
275-gallon tote tanks, and bulk delivery

#### **SHELF LIFE:**

12 months

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ADMIXTURES

**How can the working time for Calcium Sulfoaluminate Cement Systems concrete mixes be extended?**

The working time for Calcium Sulfoaluminate Cement Systems concrete mixes can be extended in two ways:

1. Reducing the mix temperature by using chilled water. As a rule of thumb, working time will increase by a minute for every degree drop in concrete temperature.
2. Using the retarding agent **CSA RETARDER** in the proper dose as estimated in ounces per 100 lbs. of cement. The following table illustrates the approximate dose of **CSA RETARDER** for one hour of working time. Since site conditions and aggregate qualities affect the setting time largely, actual concrete test pours should be conducted to determine the **CSA RETARDER** specific dose for site and mix conditions.

<b>Ambient Temperature (°F)</b>	<b>Batching Temperature (°F)</b>	<b>CSA RETARDER DOSE (oz./100 lbs. CSA cement)</b>
40 – 50°	50°	6 – 8
50 – 60°	55°	8 – 10
60 – 70°	60°(cold water)	10 – 12
70 – 80°	60° (cold water)	12 – 14
80 – 90°	60° (cold water)	14 – 16



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