

# RUSSTECH<sup>®</sup>

## RUSSTECH CSF

### *CONDENSED SILICA FUME ADMIXTURE FOR CONCRETE*

#### DESCRIPTION:

**RUSSTECH CSF** is manufactured from the highest grade silica fume and is used to produce ultra-high strength, high durability concrete.

**RUSSTECH CSF** consists of highly reactive ultra-fine particles and contains 92% to 97% silicon dioxide and has an average specific gravity of 2.20. Other silica fumes, with lower amounts of silicon dioxide, may contain other unwanted elements and compounds such as carbon. Higher levels of carbon, as indicated by loss on ignition, darken concrete and can lead to problems with entrained air.

#### ADVANTAGES:

- Improves the relative durability of concrete by lowering the permeability of the concrete significantly.
- Increases early and ultimate strengths both compressive and flexural
- Ultra-high strength concrete exceeding compressive strengths of 15,000 psi and 6,000,000 psi modulus of elasticity
- Increases aggressive chemical resistance up to 15 times that of normal concrete
- Increases density
- Reduces damage caused by freezing and thawing
- Increases the abrasion resistance of the concrete
- Reduces surface bleeding
- Effective corrosion inhibiting system that resists the ingress of water-borne salt contaminants (de-icing salts or marine salts)
- Reduces segregation

#### SPECIFICATIONS:

**RUSSTECH CSF** conforms to ASTM C 1240, Standard Specification for Silica Fume for Use in Hydraulic Cement and Mortar.

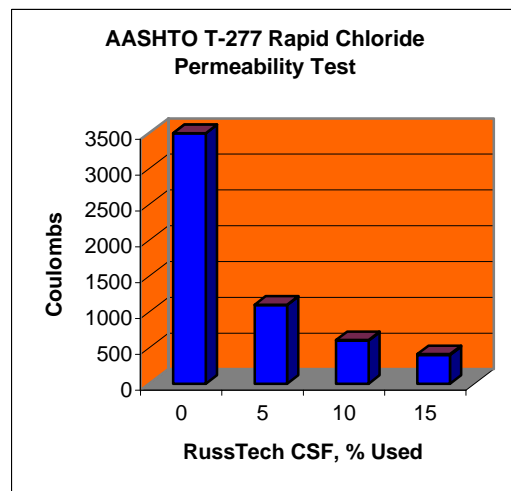
#### HOW THE PRODUCT WORKS:

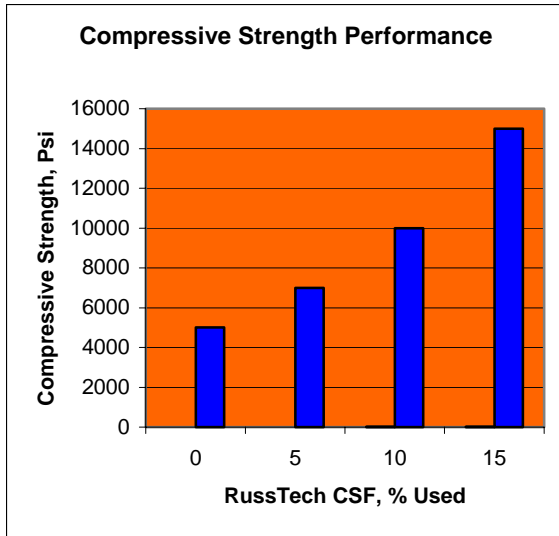
**RUSSTECH CSF** is a highly reactive pozzolan that reacts with the cement and converts weak calcium hydroxide crystals into useful calcium silicate hydrate gel. The abundance of ultra-fine silica fume places thousands of particles for each cement grain in a typical concrete mixture. The sub-micron particles are dispersed in spaces around and between the cement grains, leading to uniform distribution of particle sizes and high density concrete.

#### AASHTO T-277 Chloride Permeability Test Based On Electrical Charge Passed

Charge Passed (Coulombs)	Chloride Permeability	W/C Ratio
>4000	High	>0.60
2000-4000	Moderate	0.40-0.50
1000-2000	Low	<0.40
100-1000	Very Low	Latex
<100	Negligible	Polymer

**RUSSTECH CSF** significantly reduces the permeability of the concrete and increases the compressive strength.





### USES:

**RUSSTECH CSF** can be used to consistently produce high durability and high strength concrete wherever this application is necessary. Some examples where dramatically reduced permeability and additional protection from corrosion (de-icing salts) are necessary, would be parking garages, bridges, high early strength concrete, Precast, Prestressed applications. These high performance characteristics enable concrete to attain ultra-high strength and extended service years of the concrete.

**RUSSTECH CSF** enhances the durability of the concrete when in the presence of aggressive chemical attack, also, extending the service years of the concrete in harsh environments.

### TECHNICAL NOTE:

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

### DOSAGE RATE:

**RUSSTECH CSF** is recommended for use at a rate of 5 to 15% by weight of the cement. Dosage rates may vary depending on the application and desired concrete properties.

Because local job conditions vary, contact your local RussTech technical service representative for further assistance if using this product outside recommended dosage ranges or when combining with other admixtures.

### COMPATIBILITY:

**RUSSTECH CSF** is compatible with all types Portland cement, class C and F flyash, fibers, air entraining, water reducing, corrosion-inhibitors and superplasticizing admixtures. For best results, each admixture must be introduced separately into the concrete mix.

### STORAGE/HANDLING:

**RUSSTECH CSF** stores, handles, and batches similar to Portland cement. Bulk storage can be in a normal silo. Consult your RussTech technical service representative for proper procedures for discharging and optimum storage silo conditions with bulk delivery.

### PACKAGING:

**RUSSTECH CSF** is available in bulk delivery, bulk bags, and 25 lb. or 50 lb. shreddable bags.

### SHELF LIFE:

**RUSSTECH CSF**, packaged in bags, can be stored indefinitely provided it is kept in a dry environment .

### VISIT US ON THE WEB AT:

[www.RussTechnet.com](http://www.RussTechnet.com)



**RussTech Inc.**

"We Add The Difference"