

PRODUCT NAME

Adi-Con™ CSF
Condensed Silica Fume (Microsilica)
Admixture



MANUFACTURER

Gemite® Products Inc.
Toll Free: 888-4-GEMITE (888-443-6483)
E-mail: techinfo@gemite.com
Web Site: www.gemite.com

USA
160-3480 East Robinson Rd.
Amherst, New York 14228
Phone 888-443-6483

FEATURES

- **High Compressive Strength**
The high pozzolanic reactivity of the superfine particles & effect of chemical admixtures increase the compressive strength of concrete. The cross-sectional thickness, or cement content, can be reduced resulting in lower material costs.
- **Tensile and Flexural Strength**
Increased tensile and flexural strength.
- **High Abrasion & Impact Resistance**
Considerable improvement in the structure of hydrated cement paste results in high abrasion resistance and impact resistance of *Adi-Con CSF* modified concrete. The impact resistance is further improved by the addition of polymer fiber.
- **High Resistance to Chemical Attack**
Adi-Con CSF reacts with free lime (calcium hydroxide) in cement paste and forms more chemically resistant calcium silicate compounds. Superfine particle size (below 1 micron) further increases the chemical resistance by providing very dense, low permeability cement paste structure, resistant to penetration by weak acids, concentrated salt solutions (chlorides, sulfates) and high caustic solutions.
- **Reduction of Rebar Corrosion**
Adi-Con CSF reduces permeability of concrete and minimizes the chloride penetration that causes steel rebar corrosion.
- **Reduced Segregation**
The addition of fine particles increases the concrete cohesion resulting in lower segregation and bleeding.
- **Improved Freeze/Thaw Durability**
The freeze/thaw resistance is improved as a result of the high tensile strength of the cement paste binder. The air-entrained stability of *Adi-Con CSF* modified concrete improves freeze/thaw resistance.

PRODUCT DESCRIPTION

Basic Use

Adi-Con CSF improves concrete performance and increases strength & durability, which is hard to achieve with standard concrete. The compressive strengths of concrete can be increased by 20-30% and more by addition of *Adi-Con CSF*, depending on mix design and quality of aggregates,

The chemical resistance of *Adi-Con CSF* modified concrete is much better than conventional concrete, especially beneficial in chemical processing facilities. *Adi-Con CSF* is excellent for floor slabs, columns, equipment bases, concrete tanks & storage vessels.

The low permeability of *Adi-Con CSF* concrete is essential in new construction / restoration of concrete bridges and parking decks, where resistance to chloride penetration is essential.

In wet or dry shotcrete, *Adi-Con CSF* reduces rebound, allows a thick overhead application, provides low permeability and high strength in new construction and restoration.

Composition and Materials

Adi-Con CSF is a dry densified, microsilica (silica fume) with a high pozzolanic reactivity of the silica particles, which reduces the free lime content in cement. This reaction, in combination with other chemical admixtures, densifies the internal structure of hardened cement paste, and produces less permeable, stronger & more durable concrete.

Limitations

Addition of *Adi-Con CSF* reduces the amount of “bleed” water and modified concrete and mortar is considerably more susceptible to plastic shrinkage cracking. Prevent surface water evaporation by water misting, surface water evaporation retardant, or curing compound, applied soon after screeding and finishing. Contact Gemite Technical Service for additional information. Must not freeze for 48 hours after placing.

Health and Safety

Adi-Con CSF is a very fine amorphous silicon dioxide powder. When handling, wear dust protective mask. Harmful if digested. Keep product out of reach of children. **FOR INDUSTRIAL USE ONLY.** Consult SDS for additional information.

Color

Gray / Black

Packaging

Adi-Con CSF is usually supplied in 20 kg (44 lb) bags.

Yield

Contact Gemite Technical Service for information on dosage requirements for concrete, wet/dry shotcrete & other applications.

Storage and Transportation

Adi-Con CSF, stored on pallets in a dry, cool area has unlimited shelf-life.

TECHNICAL DATA

Contact Gemite Technical Service for advice on concrete mix designs with *Adi-Con CSF*.

Adi-Con CSF complies with AASHTO M307-90 Standard Specification "Microsilica for Use in Concrete and Mortar" and CSA Standard CAN/CSA-A23.5-M86 "Supplementary Cementing Materials".

INSTALLATION

Current Guide Specification & Application Instructions contain additional information specific to each application and must be followed.

Application

Adi-Con CSF is added to concrete on site, or at the ready mix plant. The exact dosage depends on the concrete mix design and the required performance characteristics of the concrete.

Adi-Con CSF is a raw, densified, microsilica and addition of a superplasticizer is necessary, when used in concrete or mortar.

The superplasticizer is not required when used as admixture in dry process shotcrete mixes.

Contact Gemite Technical Service for technical advice on mix design, mixing, placement, finishing & curing when using *Adi-Con CSF* modified concrete, shotcrete and mortars.

The placement and finishing of *Adi-Con CSF* modified concrete is similar to the conventional concrete.

Curing

Protect the surface against fast drying. Water fogging must be applied very soon after screeding and finishing, to reduce water evaporation.

Three (3) days of moist cure is essential to achieve the benefits of the *Adi-Con CSF* modified concrete.

Clean up

All tools & equipment must be cleaned with water immediately after use. Cured material can only be removed mechanically.

AVAILABILITY AND COST

Adi-Con CSF is available worldwide. Contact Gemite for the Representative/Distributor nearest you and pricing information.

MAINTENANCE

None required.

WARRANTY

A limited twelve (12) month Material Replacement Warranty is available. For complete details contact Gemite's Head Office.

TECHNICAL SERVICE

For technical advice on suitability of *Adi-Con CSF* for a specific application, specification assistance & application advice contact Gemite Technical Service: USA 888-443-6483 Canada 905-672-2020.

Short Specification

The microsilica admixture will be *Adi-Con CSF* manufactured by Gemite Products Inc. [USA 888-443-6483] [Canada 905-672-2020]. The microsilica additive shall be in compliance with the AASHTO M307-90 and CAN/CSA-A23.5-M86. It will be used according to the latest manufacturers Guide Specifications and Application Instructions.