

PRODUCT NAME

# Corro-Chem™ 100

Acid Resistant Mortar/Concrete



## MANUFACTURER

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## FEATURES

- Resists high concentrations of most inorganic and organic acids including nitric and sulfuric acids
- Excellent performance in high concentrations of nitric & sulfuric acid applications at elevated temperatures
- Not attacked by organic solvents
- Resistant to high thermal shock
- Resistant to high temperatures > 800°C ( 1475° F)
- Horizontal and vertical formulations
- One coat (no separate primer or membrane required)
- Thin topping
- Can be extended with aggregates
- High abrasion resistance
- Easily applied
- Vapor permeable (breathable)
- Nonflammable & Nontoxic
- Straightforward application
- No recoat window. Can be topcoated with itself
- Bonds to chemically contaminated surfaces
- Cost effective

## PRODUCT DESCRIPTION

### Basic Use

*Corro-Chem 100* is a proprietary, acid resistant mortar used primarily for the protection of concrete slabs in secondary containment structures. It can also be used in lieu of Portland cement concrete in corrosive environments for pump pads, curbs, walls, dikes, loading docks, tank/equipment support columns and bases, etc. It is resistant to most organic and inorganic acids including sulfuric, hydrochloric, acetic, phosphoric and nitric even at elevated temperatures.

When extended with recommended aggregates, *Corro-Chem 100* exhibits almost identical thermal expansion and contraction coefficients as regular Portland cement concrete. (This eliminates the need for mechanical anchoring typically required for acid resistant systems based on potassium silicate chemistry.)

Most applications require only one coat. No separate primers and/or membranes are necessary.

Compared to most competitive systems, *Corro-Chem100* requires less labor to install and materials are significantly less expensive. For vertical applications use *Corro-Chem 100 V* - vertical.

### Composition and Materials

*Corro-Chem 100* is an inorganic cement-based mortar. Both the horizontal and vertical formulations are two-component product consisting of a dry powder and a liquid additive.

### Limitations

*Corro-Chem 100* is not suitable for a continuous exposure to alkaline or caustic environments. It is not resistant to acid fluorides or hydrofluoric acid. It is designed for horizontal applications. Do not use limestone aggregate when extending *Corro-Chem 100* horizontal mortar.

### Health and Safety

Component A powder is nontoxic and nonflammable. Component B is an alkaline water solution. Use rubber gloves and protective goggles when mixing. Must avoid contact with eyes and prolonged contact with skin. **FOR INDUSTRIAL USE ONLY.** Before using, consult latest MSDS for hazard information, precautions and first aid directions.

### Packaging - Horizontal & Vertical Formulations

Component A, a powder is packaged in 22.7 (50 lb) heavy-duty Kraft bag. Liquid component B is packaged in plastic container holding 2.26 L (0.6 USG).

Shipped 40 kits (Components A and B) per pallet.

### Yield - Horizontal & Vertical Formulations

Mixed formulations yield 11.9L (0.42 ft<sup>3</sup>). When extended with 3/8 in (9mm) pea gravel or 1/4 in (6mm) crushed granite stone the horizontal product yield is 15.0 L (0.56 ft<sup>3</sup>).

### Colors

Concrete Dark Grey

### TECHNICAL DATA (Corro-Chem 100 horizontal)

Tensile Strength in Bending	4.0 - 4.9 MPa (580 - 720 psi)
Modulus of Elasticity	14 - 20 GPa (2.0 - 2.9 x 106 psi)
Compressive Strength (ASTM C109)	24.1 - 29.6 MPa (3,500 - 4,300 psi)
Thermal Expansion & Contraction	10 x 10 <sup>-6</sup> / °C (6 x 10 <sup>-6</sup> / °F)
Direct Tension Bond Strength	1.01 - 1.5 MPa (140 - 220 psi)
Fire Testing (ULC 114)	Non-combustible, 0-Flame, 0-Smoke

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July 2009

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03550 Concrete Topping  
07570 Traffic Topping

## Chemical Resistance

The chemical resistance of *Corro-Chem 100* in acid environments is similar to novolac and vinyl ester resin-based mortars and potassium silicate systems.

No separate primers or elastomeric membranes are required. *Corro-Chem 100* will not debond due to entrapped moisture and capillary pressure at the concrete and *Corro-Chem 100* interface.

Gemite requires each potential application of *Corro-Chem 100* be reviewed and approved. The following information must be supplied to Gemite:

**Environment:** List of chemicals, their concentrations, exposure temperature, pH value, frequency of chemical attack and length of time between clean-up.

**Existing Concrete:** Type concrete, compressive strength, degree of deterioration and contamination, surface treatment and description of traffic use.

## INSTALLATION

Current Guide Specification and Application Instructions contain information specific to each application and must be followed. Consult Technical Service to ensure correct surface preparation, application procedures and cure requirements.

### Surface Preparation

Remove all loose, delaminated and contaminated concrete. In the majority of applications, the removal of 3 - 12 mm (1/8 in - 1/2 in) of existing concrete is necessary, depending on deterioration, depth of contamination and specific application. Remove all grease, laitance, dirt and efflorescence using shotblasting, sandblasting or high-pressure water blast equipment with sand injection at nozzle pressures of 24-34.5 MPa (3500-5000 psi).

Contact Technical Service for detailed surface preparation procedures or for evaluation of alternative surface preparation proposals.

### Crack Treatment

Route cracks, approximately 4 cm (1 1/2 in) wide and 2.5 cm (1.0 in deep) with negative angle cuts and fill with *Corro-Chem 100* mortar. (Negative angle cuts are wider at the bottom than at the top).

### Mixing

Use 12 mm (1/2 in) drill and a mixing paddle. For larger quantities, use paddle or helix screw type mortar mixer. Place the liquid in the mixer and add powder into the liquid and mix until homogeneous and free of lumps. (If "splitting" the mix, shake the liquid component B before taking a part out" Mix a minimum of five (5) minutes. Convey mixed material in clean containers to the point of placement. When horizontal *Corro-Chem 100* is applied at thickness from 12 mm (1 1/2 in) to 25 mm (1 in), kit must be extended with 10.5 kg (23 lbs) of 6 mm (1/4 in) crushed granite stone. In thickness over 25 mm (1 in), 9 mm (3/8) clean pea gravel or 12 mm (1/2 in) stone can be used, Do not use calcite aggregates, e.g limestone, marble, etc..

## Water Saturation

Surfaces must be thoroughly saturated with clean water a minimum 30-45 minutes prior to application. Remove all standing water immediately before application to achieve a saturated surface damp condition.

## Application

Do not apply when the temperature is expected to be below 4°C (40°F) within 48 hours or when rain is imminent. Follow hot weather concreting precautions when temperatures exceed 25°C (77°F) or under sunny and windy conditions.

Apply to a uniform specified thickness. Keep a wet edge. Use hand or mechanical screed to spread the material. Use steel trowel to finish horizontal and vertical applications. When thickness requirements exceed 40 mm (1.5"), or where large variations in thickness exist, contact Technical Service. For *Corro-Chem 100 V* vertical applications apply a thin scratch coat and then "build" to recommended thickness. The minimum thickness in both, horizontal or vertical applications, is 10 mm (3/8 in).

## Curing

Air dry cure for 72 hours prior to opening to traffic. When working under tarps at freezing temperatures, use heaters.

## Clean Up

Tools must be cleaned with water immediately after use. Cured material can only be removed mechanically.

## Shelf Life and Storage

*Corro-Chem 100*, when properly stored on pallets in a dry, cool area, has a shelf life of 12 months. Do not allow liquid component B to freeze.

## AVAILABILITY AND COST

*Corro-Chem 100* is available worldwide. Contact the manufacturer for the name of the nearest Representative/Distributor for pricing information.

## Order Information

Corro-Chem 100 for Horizontal Use: Item #N901PK

Corro-Chem 100V for Vertical Use: Item #N905PK

## MAINTENANCE

None required.

## WARRANTY

A limited twelve (12) month Material Replacement Warranty is available. Contact Gemite for details.

## TECHNICAL SERVICE

For review of *Corro-Chem 100* for specific applications, specification assistance and application instructions, contact Technical Service: USA: 888-443-6483 or Canada: 905-672-2020.