Chemical Protection of Concrete

Products and Applications

Gemite®
a Global Provider
of Innovative Construction Chemicals

Delivering tomorrow's technology today

Portland cement-based concrete and mortars with improved chemical resistance

Product	Description and Use
Adi-Con CSF R	Silica fume (microsilica) based admixture for concrete; provides low permeability, chloride penetration and water-resistant concrete overlay. It is typically used in thickness 5 cm (2 in). The admixture is formulated to provide no effect on slump of concrete, and it is added either at the site to ready mix truck, or in concrete mixing plant.
Gem-Crete CR	A high-volume fibre reinforced mortar composition, enhanced with micro-silica is used as a thin, waterproofing, high abrasion and impact resistant deck overlay, in thickness varying from 12 to 50 mm (1/2 – 2 in). It is typically supplied as a concentrate and mixed on site with specified amount of sand, cement and water using mortar mixer.
Gem-Crete HF ST	A very thin deck, waterproofing overlay, varying from a minimum thickness of 6 to 10 mm (1/4 to 3/8 in), exhibiting a high abrasion and impact resistance. It is a two-component system, consisting of dry powders and a liquid additive.
Cem-Kote Barrier Cote 100	A high-performance polymer modified cement coating use in waterproofing, as a bonding agent as well as in protection. It is also a highly effective vapour retarder coating. The composition also provides improved chemical resistance.
Cem-Kote Flex CR	Flexible polymer modified cement, used as protective coating in secondary containment structures. Resistant to weak acids.

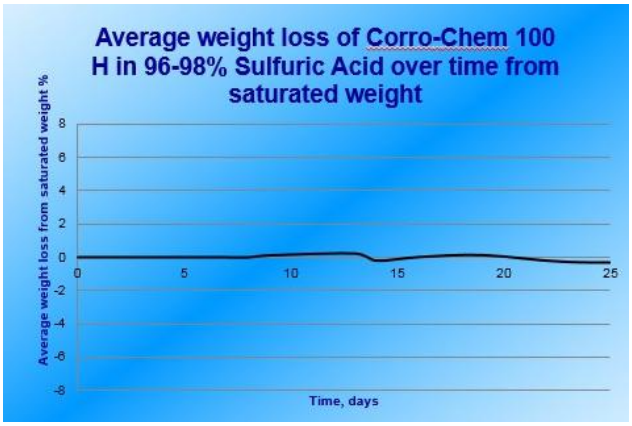
Epoxy Systems

Product	Description and Use
Cem-Kote Barrier Cote 100	A high-performance polymer modified cement coating use in waterproofing, as a bonding agent as well as in protection. It is also a highly effective vapour retarder coating, as an undercoat for epoxy resins systems, where the penetration of water or water vapour is possible from “behind” concrete layer. E.g. below grade concrete tank applications or secondary containment structures, requiring an epoxy coating for chemical resistance.
Gem-Cote EP 100	High performance, high chemical resistance epoxy coating – vertical and horizontal version. The use is mainly in protection of concrete in chemical environments. It is often used with Cem-Kote Barrier Coat 100 undercoat, when water vapour retardation is required, due to moisture coming from behind concrete layer.
Gem-Cote EP AR ST	High performance novolac resin system designed for resistance to high concentrations of sulfuric acid, and other acids - but only for a short-term exposure. Uses include secondary containment structures, or “splash and spill” floor protection applications
Gem-Cote EP AR Plus	High performance novolac resin system foe a continuous exposure to high concentrations of sulfuric acid, and other acids. Used to protect concrete in acid storage tank farms, and secondary containment structures.

Corro-Chem systems – ultra high-performance acid resistant mortars and concrete

Product	Description and Use
Corro-Chem 100	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. It is a two-component system
Corro-Chem 100 TC	This is a thin layer version of Corro-Chem 100
Corro-Chem 200	Corro-Chem 200 exhibits an excellent acid resistance and good resistance to caustic environment. It is more economical than polymer-based materials such epoxy, urethane and polyester resin mortars. It is primarily used for protection of concrete slabs exposed to acidic and caustic spills and in secondary containment structures. It is also used in the repair of concrete floors, loading docks exposed to acids. By extension of the mortar with 3/8 in (9 mm) pea gravel or ¼ in (6 mm) crushed granite stone, it can be used as acid resistant concrete. It is a two a two-component system.
Corro-Chem 300	Corro-Chem 300 is one component cement mortar, add water only, with high temperature, acid and caustic resistance. It is used is in repair of manholes exposed to hydrogen sulfide (sulfuric acid), chimneys and flue gas structures and other applications in protection of concrete and steel against acid environments.

All accessory products and manufactured and supplied by Gemite Products Inc.



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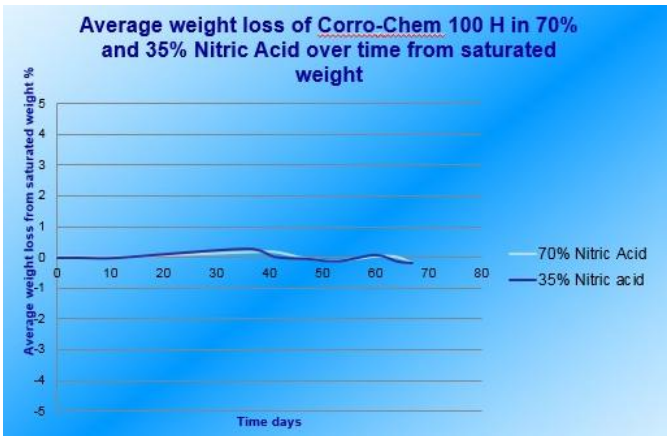

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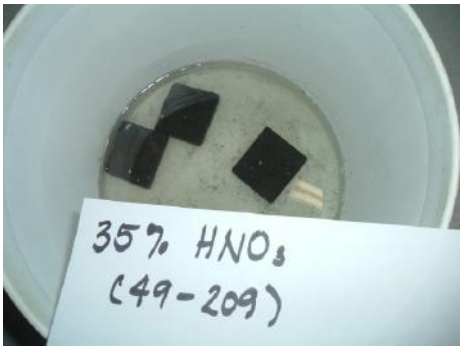

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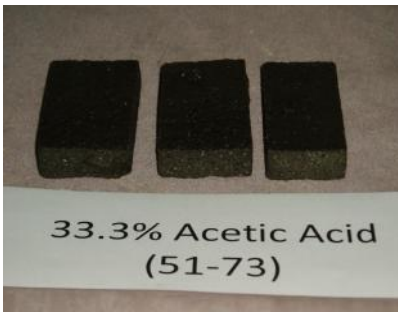

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Figures

1. Chemical resistance testing of Corro-Chem 100 in 96-98% sulfuric acid
2. Chemical resistance testing of Corro-Chem 100 in 70and 35% phosphoric acid
3. Chemical resistance testing of Corro-Chem 100 in nitric acid 35%, 100 days – note no discoloration of acid
4. Chemical resistance testing of Corro-Chem 100 in acetic acid – 35 days – no attack
5. Chemical resistance testing of Corro-Chem 100 in nitric acid, 70%, 100 days – no attack
6. Corro-Chem 100 – repair of acid sumps, Sarnia, Ontario, Canada
7. Cem-Kote Barrier Coat 100 and Gem-Cote EP 100 – sulfuric acid tanks, Eastern Passage, Nova Scotia, Canada
8. Cem-Kote Barrier Coat 100 and Gem-Cote EP 100, primary tank 36% hydrochloric acid, Sarnia, Ontario, Canada
9. Cem-Kote Barrier Coat 100 and Gem-Cote EP 100, battery plant, near Iasi, Romania
10. Cem-Kote Barrier Coat 100 and Gem-Cote EP 100, secondary containment, Gajary, Slovakia
11. Corro-Chem 100 – repair of acid sumps, Sarnia, Ontario, Canada

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SOLVING WATERPROOFING CHALLENGES WORLDWIDE

Gemite draws upon many decades of a practical experience to assist the Architect, Engineer and Contractor to find the most Efficient and Permanent Solution. From the Condition Analysis of existing structures, to continuous support during the Design and Specification process, we provide advice to assure that the best and cost efficient systems are selected.

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Worldwide Technology Leader

Our continuous Innovation, Superior Quality and Solid Reputation make Gemite the preferred industry choice for lasting and reliable solutions. The latest technology introduced by Gemite is a Nano group of products.

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Established and Field Proven Technology

Gemite material systems have been used in new construction and restoration projects ranging from small to huge. We have an international track record of successful installations for over 25 years around the globe, from the ravages of Sahara to the colds of Alaska.

Global Availability and Support

Gemite materials are available internationally, ensuring consistent quality and service to customers everywhere. Gemite guarantees a Single Source of Environmentally Responsible Materials, applied by well-trained Professional Applicators, and supported by a Global Technical Network.

LEED, Green and Safe

Gemite supports LEED Green concept and strives to maximize sustainability and environmental health by using materials with the lowest possible carbon footprint. Gemite's constant improvement of operating procedures and strict Quality Control according to its ISO 9001 Certification assures that we deliver materials with consistent quality and performance to our global Customers.

Brochures for following markets are available on request:

- Water treatment
- Wastewater treatment
- Crystalline waterproofing
- Bridges
- Parking garages
- Wall and roof coatings
- Industrial concrete
- Dams and locks
- Tunnels
- Marine structures
- Cooling towers
- Airports
- Chemical protection of concrete
- Carbon Fibre Reinforcement
- Sewers and manholes

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