

DESCRIPTION & USES

UniCrete 8 are excellent alternatives to acid brick. They are used to protect Portland cement concrete from attack from a wide range of aggressive chemicals.

UniCrete 8 can be applied from ½” to several inches thick. Applied by screed and trowel method, their installation is quick and easy. They provide a monolithic surfacing that has excellent resistance to impact and mechanical abuse and can be used to restore and protect degraded surfaces in a single application. UniCrete 8 are castable, and make excellent materials of construction. Common uses are pouring pump foundations and pre-casting of sumps and trenches.

Polymer modified concretes are easy to apply, nonflammable and have low odor.

PACKAGING/COVERAGE

UniCrete 8 are packaged in two unit sizes:

TWO CUBIC FOOT UNIT CONSISTING OF:

1 pail of Part A weighing 25 lbs.

1 pail of Part B weighing 3.6 lbs.

1 bag of polymer concrete powder weighing 70 lbs.

USER SUPPLIES:

100 lb. bag of ¼” pea-gravel

50 lb. bag of 20/40 mesh silica sand

FORTY CUBIC FOOT UNIT CONSISTING OF:

1 – 55 gallon drum of Part A weighing 500 lbs.

2 – 5 gallon pails of Part B weighing 36 lbs. each

20 bags of polymer concrete powder weighing 70 lbs. each

USER SUPPLIES:

26 – 100 lb. bags of ¼” pea-gravel

10 – 100 lb. bags of 20/40 mesh silica sand

IMPORTANT:

All user supplied aggregates must be clean, dry and supplied in plastic lined bags.

Coverage rates are affected by the condition of the surface being topped, and application thickness. The theoretical coverage rates of a two cubic foot unit of UniCrete 8 are:

Thickness	Coverage
½ in.	48 sq. ft.
1 in.	24 sq. ft.
2 in.	12 sq. ft.

Application thickness depends upon expected service conditions.

Consult Union compound Company or your local representative for specific recommendations.

STORAGE AND SHELF LIFE

Keep all UniCrete 8 components tightly sealed in their original containers until ready for use. Store at 50-75°F, out of direct sunlight. Keep aggregate dry. Properly stored, UniCrete 8 has a minimum shelf life of 36 months. Refer to batch number on label for date of manufacture.

TYPICAL PROPERTIES

Minimum Application Thickness	½ inch
Working Time @ 75°F	45 minutes *
Cure Time @ 75°F	Foot traffic: 8 hrs
Color	Gray
Hardness	Neat: 75 (ASTM D-2240, Shore D)
Compressive Strength	15,000 – 20,000 psi (ASTM C-579)
Tensile Strength	5,000 – 6,000 psi (ASTM C-307)
Flexural Strength	7,000 – 8,000 psi (ASTM C-580)
Shrinkage	Essentially none (ASTM C-531)
Coefficient of Thermal Expansion	20 x 10 ⁻⁶ in/in °F (ASTM C-531)
Effective Shrinkage (glass deflection)	No deflection (ASTM C-883)
Thermal Compatibility to Concrete	Passes (ASTM C-884)
Water Boil Absorption	Less than 0.2% (ASTM C-413)
Density	125 lbs/cu. ft.
Flammability	Non-flammable

* Significantly less at elevated temperatures or in direct sunlight.

APPLICATION GUIDELINES

Important Notes

1. The proper mix ratios are critically important. (Any variation in ratios will adversely affect performance.) Make provisions to accurately weigh out the components as required herein.

Temperature Considerations

1. The surface temperature of the concrete to be topped and the ambient air temperature should be at least 50°F while applying UniCrete 8, and while it cures.
2. Twenty-four hours before use, all materials (components A, B, and aggregate) should be stored at 70 to 85°F, to facilitate handling.
3. At the job site, in very hot weather, keep the components in a cool place, out of direct sunlight.

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Surface Preparation - General

Surfaces must be dry and free of dirt, dust, oil, grease, chemicals and other contaminants immediately prior to applying primer or UniCrete 8.

Surface Preparation of Concrete

1. Immediately prior to application of coating, concrete substrate must be: Adequately cured (generally, at least 28 days; check with Union Compound Company if concrete has cured less than 28 days)
 - . Structurally sound.
 - . Free of all dirt, dust, debris, oil, grease, fats, chemical contamination, salts, solvents, surface hardeners, incompatible curing compounds and form release agents, Latinate and tefflorescence.
 - . Concrete surfaces must be dry and must have:
 - . Tensile strength of at least 300 psi.
 - . pH in the range of 7 to 11.
 - . All fins, projections and splatter removed.
 - . All defects repaired using patching as described herein.
 - . Failed or otherwise incompatible old coatings removed.
 - . A surface texture similar to medium sandpaper (40 to 60 grit).
 Refer to Union Compound separate document “Surface Preparation – Concrete” for further instruction in the preparation of concrete surfaces.
2. Locate all expansion joints, controls joints, floor drains, equipment base plates, and mid-floor termination points. Handle them as per Union Compound separate document “Construction Details”.

Surface Preparation of Incidental Steel

Equipment base plates, etc., to be topped, along with the concrete, should be abrasive blasted to a near white metal finish with a 1 to 2 mil anchor profile. (Ref. SSPC-SP-10)

Surface Preparation for Intercoat Adhesion

1. All surfaces to receive a second application must be dry.
2. Allow topping to cure until firm to the touch before re-application.
3. For surfaces cured firm to the touch but less than 24 hours, wash with soap and water, thoroughly rinse and dry.
4. For surfaces which have cured more than 24 hours, wash with soap and water and thoroughly rinse and dry, then lightly sand or abrasive blast.

Masking

Mask surfaces that are not to be coated. These materials are difficult to remove, once applied.

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Application Equipment

UniCrete 8 may be applied using conventional concrete placement and finishing tools.

Mixing

1. Determine the number of units of UniCrete 8 to be mixed in the batch.
 - . Mix only as much material as can be placed and finished before material begins to set.

CAUTION: At elevated temperatures, or in direct sunlight, working time will be significantly reduced.
 2. Use a horizontal blade mortar mixer with at least twice the volume capacity of the material to be mixed i.e., if mixer capacity is 10 cu. ft., mix no more than 5 cu. ft. of material in a batch.)

CAUTION: Be sure your mixture runs before adding these ingredients. These are catalyzed epoxy materials that will rapidly set up inside your mixer.
 3. Mixer should be dry and clean of all foreign matter.
 4. Mixer should be in good condition and rubber blades on ends of mixing arms should make full contact with mixing tub.
 5. The following are the component measurements that, when mixed together, will yield a two cubic foot batch of UniCrete 8:
 - UniCrete 8 Part A: 25 lbs.
 - UniCrete 8 Part B: 3.6 lbs.
 - UniCrete 8 powder: 70 lbs.
 - *¼" pea-gravel: 130 lbs.
 - *20/40 mesh silica sand: 50 lbs.

*These materials are user/contractor supplied.

IMPORTANT: All aggregates must be clean, dry and supplied in plastic lined bags.
 6. In a clean pail, mix together the properly proportioned Part A and Part B. Mix for 2 minutes using a power mixer with a Jiffy type mixer attached.
 7. Turn on the mortar mixer. Be sure that the safety cover is closed. As it is running, pour in all of the mixture. Be sure to scrape all the mixture from the bucket.
 8. Slowly add the ¼" pea-gravel, followed by the polymer concrete powder, followed by the 20/40 mesh silica sand. Continue to mix until no dry aggregate appears.
 9. Discharge the mixed material into a clean wheel-barrow, turn the mixer off, and scrape it clean.
- Note: The first batch may be drier and stiffer than succeeding batches. This is to be expected and does not effect performance.



Placing

1. Place the mixed material onto the surface.
2. Maintain a minimum thickness of ½ inch. Screed strips are helpful in maintaining minimum thickness. A vibrating screed may facilitate placement.
 - . Do not feather edge.
 - . Key mid-floor termination points into the slab (see Union Compound's Construction Detail Sheets.)
3. Finish by hand tamping using a flat trowel or float.
4. If a more pronounced nonskid surface is desired, broadcast a sharp, dry grit onto the still wet surface.
5. If work is interrupted, or at the end of the day, terminate the topping in a straight and square line. Follow intercoat surface preparation instructions.
6. When used as a material of construction, UniCrete 8 may be formed and poured using standard concrete construction techniques. Line all forms with polyethylene.
7. Vertical surfaces intended for constant immersion service can be formed and poured.

CLEANUP

Clean all tools and equipment with Thinner 14

SAFETY PRECAUTIONS (FOR INDUSTRIAL USE ONLY)

- Avoid contact with eyes and skin; do not ingest or inhale.
- When working with UniCrete 8, always wear chemical goggles, rubber gloves, and appropriate work clothing.
- When working in a confined area, make provision for forced ventilation.
- Prolonged or repeated exposure to UniCrete 8 may cause skin irritation or allergic reactions.
- Refer to material safety data sheets regarding individual components.
- WARNING: Cleaning solvents are flammable. Turn mixer off before using solvents.