EMCRETE

INSTALL DATA

IMPORTANT: Do not handle or install this material until all members of your crew have read (or have been read to) all relevant MSDS sheets as well as these instructions. If any of your crew do not understand any of this information call EMSEAL.

TEMPERATURE LIMITATIONS:

The substrate temperature for installation of the EMCRETE must measure 7°C (45°F) minimum during pouring of the nosing material as well as for at least 4-hours after pouring of the nosing is completed.

USES:

These instructions are intended for the installation of EMCRETE when used alone as a patching material or to rebuild or fill joint edges to receive EMSEAL's SJS, DSM or BEJS systems, for example. The **minimum application thickness** for effective use is 3/8-inches (8mm).

For installation of EMCRETE as a component of an expansion joint system from EMSEAL such as THERMAFLEX, SJS, SJS-FP, etc., additional steps are required. Consult the specific installation sheets for each product.

These instructions apply to installation on horizontal surfaces only. For application on vertical or heavily sloped surfaces, a thickening agent "non-sag additive" and instructions for its use are available from EMSEAL.

Installation Overview (NOTE: Install in accordance with detailed instructions that follow this summary.)

- Remove all unsound concrete in or around the area to be repaired. Use proper preparation geometry to ensure a level "shelf" on which to apply the EMCRETE elastomeric concrete.
- The substrates must be perfectly clean and dry prior to installation.
- Install side forms where needed to contain the EMCRETE. (**IMPORTANT:** the EMCRETE material is self-leveling. Forms must be tight to the substrate or sealed to prevent leakage of the material through the forms).
- Apply primer to concrete areas that will receive the EMCRETE allowing 30 minutes for the primer to dry.
- If concerned about possible spillage or drips. Mask-off any adjacent deck or other surfaces with duct tape and construction paper.
- Mix nosing ingredients according to the detailed instructions herein.
- Pour nosing material into the blockouts.
- Trowel lightly while still curing to achieve consistent finish or allow the EMCRETE to self-level and cure as is.

IMPORTANT: EMCRETE Nosing Material Storage

The open-pot working time of EMCRETE after mixing is about 10-minutes per unit.
Working time will be **shorter when hot** and **longer when cold**.

At high temperatures, above 29°C (85°F), store the nosing material liquids and aggregate at room temperature (21°C (70°F)) or **in the shade**. **IMPORTANT:** DO NOT leave this material in direct sun--even for a short while. Keep all materials shielded from the sun until immediately before use.

At low temperatures (below 16°C (60°F)) store the nosing material liquids and aggregate at room temperature (above 21°C (70°F)) in a heated space.

Contents of an EMCRETE "Unit":

Each "Unit" of EMCRETE is shipped in a white, 5-gal pail and contains:

- One - 1/2-gallon jug containing **4.5-pounds of Part-A**. The jug is white. The liquid inside the pail is amber.
- One - 1-gallon pail containing **8.2-pounds of Part-B**. The pail is whiite. The liquid inside the pail is black.
- In the bottom of the 5-gal shipping pail is **18-pounds of sand** and **4-pounds of chopped strand fiberglass** aggregate.
- One - 1-pint container of EMPRIME primer. (Note: if you order a large number of units of EMCRETE, the primer may be shipped in multiple pints, quarts or both).

Yield: The yield of each mixed "Unit" of EMCRETE is 596 cubic inches (9,766 cubic cm).

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MATERIALS & TOOLS REQUIRED FOR INSTALLATION OF EMCRETE

1: Equipment Required of Contractor

In addition to the following, it is expected that the contractor will have the tools and equipment necessary to properly prepare the work area and comply with all recommendations of the MSDS sheets and/or company or jurisdictional worker health and safety plans:

- One - empty 5-gallon pail to mix first unit in
- Heavy duty mixing drill(s) (3/4" chuck)
- 30" long, 3" diameter "mud mixers" with 7/16" shank
- Power -- heavy duty extension cords or generator
- Flat-head screwdriver--to open containers
- Utility knives
- Channel-lock pliers--to open containers
- Paint stir sticks--to scrape Part-B into Part-A
- Chemical-resistant gloves and protective clothing
- Six - 50mm (2-inch wide by 6-inch long) margin trowels
- Two - hand-held wire brushes (do not use powered wire brushes as they polish the concrete)
- Lint-free, cotton rags
- Solvent (acetone* or effective alternative)
- Duct tape (at least 6 times as much as the joint footage)
- Rolls of red construction paper (at least twice as much as joint footage, to mask off deck adjacent to joint-gap and to create a masked mixing area)
- Four - 4-inch paint brushes (to paint on primer)
- Spray bottle (to spray solvent for final nosing finish)
- Clean, 1-gallon, paint buckets (to hold trowels in solvent, primer, etc.)
- High-powered electric air blower
- Industrial shop-vac with 2-inch diameter hose
- Diamond-bladed saws, grinders, cup grinders, etc.
- Chipping hammers and bits
- Hammers, chisels, & other concrete hand tools
- Proper signs, cones, tape, etc. to secure work area

NOTE: If using EMSEAL-provided "non-sag-additive" for application of EMCRETE on vertical surfaces you will need:

- Electric drill (for mixing small quantities of material used on vertical surfaces)
- Three - 2-inch diameter jiffy mixer blades (for mixing EMCRETE components and non-sag additive used to thicken the material so it will hang on vertical surfaces)

**Solvents mentioned or referred to are toxic and flammable. Observe solvent manufacturer's precautions and refer to Material Safety Data Sheets, as well as local and federal requirements, for handling and use.*

PRE-INSTALLATION PREPARATION

Ensure Decks Are Level Across Joint Gap

The work area should be inspected and measured to determine if there are places where the deck is not at the same height on both sides of the joint gap. The difference in deck heights should be no greater than 1/4" (6mm).

In most cases, EMCRETE can be used to correct deck height differentials. The additional material needed to make these corrections must be ordered from EMSEAL.

Remove All Unsound Adjacent Concrete

Using a hammer, tap concrete immediately adjacent to the area to be repaired or patched. Areas that sound hollow, or crumble, crack, or loosen must be removed leaving only sound concrete. Removal methods must ensure that a flat, solid "shelf" of concrete is created on which to pour the EMCRETE patch. For best results, patches must be squared off, deepened where necessary and prepared using methods and geometries that are established industry practices in concrete repair.

Clean Concrete of All Contaminants

NOTE: This step is crucial for the nosing material to adhere to the concrete and must not be compromised.

All concrete to which the EMCRETE is expected to bond must be thoroughly clean and dry and free of old sealant, grease, dirt, moisture or any other contaminants.

Using diamond grinding-cups or wheels, clean and expose the coarse aggregate on the concrete surfaces to receive the EMCRETE.

Remove all dust by blowing with oil-free, moisture-free air. (A high-powered electric air blower works well for this.)

Inspect the blockout and use a hand-held wire brush to loosen any clumps of cement particles which still may be lodged in blockout sawcuts or depressions. DO NOT use powered rotary wire wheels as these will polish and shine the surface.

Reapply a clean, dry air blast from a high-powered electric air blower or vacuum up all fine dust and cement particles using an industrial shop-vac.

STEP 1: Tape Off & Protect Deck

If there is any concern about dripping black nosing material on adjacent decks, sidewalks or other surfaces, the following is recommended:

Roll out red construction paper along both sides of the repair area holding the paper back from the edge approximately 1-inch (25mm). Tape off the edge of the repair area and construction paper with a continuous strip of duct tape.

STEP 2: Prepare Pouring & Mixing Station

Pick a location central to the work and tape down construction paper in a 10-foot x 10-foot area. *(**TIP:** On jobs with a lot of repair or work areas, you may want to set up your mixing station on the back of a pickup or flat-bed trailer so that it can be moved easily between work locations.)*

Use construction paper to create a path from the mixing station to the protected work area next to the joint(s). *(WHY? Minor drips of the black nosing material as well as tracking of nosing material on workers' boots can result in unnecessary and time-consuming clean up of the deck if protection is not provided.)*

STEP 3: Solvent Wipe

All surfaces to which the EMCRETE must adhere must be wiped with a rag dipped in oil-free solvent (acetone or effective alternative) to pick up any remaining dust particles. Use lint-free, white, cotton, cloth rags and change to fresh, clean rags often.

STEP 4: Prime

-Use channel-lock pliers to open can of primer.

-Use screwdriver to remove inner safety seal cap.

-Pour some of the primer into a clean paint-pail.

-Using paint brushes, apply EMPRIME primer to all surfaces to which the EMCRETE must adhere. -Make sure the vertical surfaces of patch area are coated as well. Apply enough EMPRIME to visibly "wet" the entire surface but avoid ponding.

Allow the primer to dry for 1/2 hour before pouring EMCRETE but re-prime after 3 hours if the EMCRETE has not been installed.

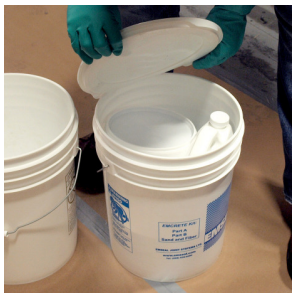
***NOTE:** If priming large areas, clean paint brushes in solvent and clean out debris from primer pails between fillings.*

STEP 5: Install Forms

Install forms at the open edge of areas to be patched as needed to define the newly formed joint edge. Set form height carefully to achieve proper finish levels and/or to compensate for deck height differences.
***IMPORTANT:** the EMCRETE material is self-leveling. Forms must be tight to the substrate or sealed to prevent leakage of the material through the forms.*

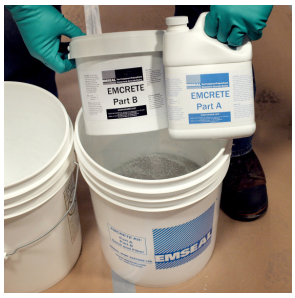
STEP 6: Blow Out Repair Area Again

Blow out the repair area again to remove any dust or debris that might have blown in.



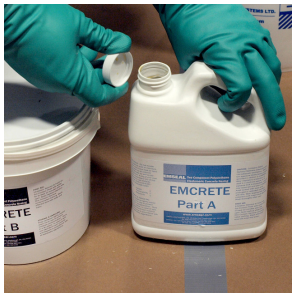
STEP 7: Open Liquids, Sand and Fiber

-Open 5-gal EMCRETE shipping unit by tearing away rip strip and pulling off the lid.



-The 5-gal pail contains Part A (jug), Part B (small pail), and the sand and fiber aggregate.

-Remove Part A and Part B.



-Open Part A by unscrewing the cap.

-Open Part B (small white pail) by breaking off the security tab.

-With the tab removed you can pull up on the edge of the lid and just peel it off.

STEP 8: Pre-Mix Part-B

- Using a stir-stick, or drill and 2-inch jiffy mixer, mix contents of Part B within its container to reach a uniform consistency.

***IMPORTANT:** be sure to scrape the bottom completely to lift and blend any material that has settled to the bottom.*

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STEP 9: Mixing

IMPORTANT: *Once mixed, the nosing material has a* ***5-10 minute pot life****. Working time will be longer in cool weather and shorter in hot weather.*

-Dedicate one to two workers to mixing and complete each of the mixing steps efficiently and properly without wasting any time.
- After one mix is complete and being poured by another worker, prepare the components for the next mix.

STEP 10: Mix Part-A into Part-B

-Pour the entire contents of the Part B jug (black liquid) into the bottom of a clean, empty 5-gal. pail.
- Using a stir stick, scrape out the Part-B pail to get substantially all

of its contents into the 5-gal. pail.
- Add the entire contents of the Part A (amber liquid) to the Part B liquid already in the 5-gal pail.

STEP 11: Mix Liquids, Then Add & Mix Sand/Fiber

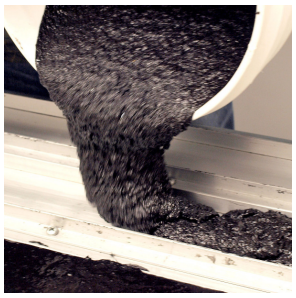
-Using the drill mixer, immediately blend the liquids using medium speed until a uniform black mixture is achieved (10 to 15 seconds).

Note: *Use an up and down lifting motion and be sure to mix next to the walls around the edges of the entire pail.*

- With the drill-mixer always turning, immediately start emptying the sand and fiber into the 5-gal. mixing pail and mix the sand and fiber into the blended contents of parts A & B.

TIP: *Pour the sand and fiber at a continuous but steady rate so as not to choke the mixing process.*
- After all the sand and fiberglass has been poured into the pail, mix the entire blend for **30-seconds** until it is thoroughly blended.

CAUTION: *The longer you mix, the shorter the pot life. DO NOT over mix. The total mix time from the time you pour Part-B into Part-A should not exceed 90 seconds.*

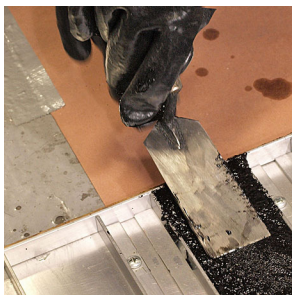


STEP 12: Pour

Pour mixed EMCRETE liquid into areas to be filled.
- Mixed EMCRETE has a heavy, flowable, "oatmeal" consistency. It will self-level.
- Pour the material from the pail in a steady, controlled flow. Move the pail along the repair area and gauge the amount poured to the size of the repair area.
- To prevent waste, at the end of the pour, use a margin trowel to scrape as much mixed EMCRETE from the pail as possible.

IMPORTANT: *To maximize working time, pour the EMCRETE from the pail as quickly as possible.*

-To prevent messes, try not to over pour. ***TIP:*** *If you do over pour, scoop up excess using a trowel and move it to another location.*



STEP 13: Troweling & Finishing

Once poured, EMCRETE does not require much finishing.
-Air bubbles from the mixing process will gradually surface.
-To achieve a consistent look, when the material is no longer movable, drag the margin trowel across the surface breaking bubbles leaving a matte finish.

CAUTION: *The more you trowel EMCRETE the more the fiberglass will be dragged to the surface. It is <u>not</u> necessary to keep working the EMCRETE.*

TIP: If the material cured quickly and you did trowel it too rough, spray your margin trowel with acetone and smooth down the rough areas.

STEP 14: Remove Tape & Paper

-Before the EMCRETE hardens, remove tape and paper.
NOTE: Keep all traffic from crossing until the EMCRETE has fully cured. Depending on the temperature: as little as 2-hours (warm - hot weather) to 7-12 hours (cold weather).
CLEAN UP: Clean excess soak toolswith acetone.

Mixing Vertical-Grade Nosing Material

For vertical applications use a mixture of smaller, more manageable units. Mark a container at 14 oz. for Part A and another container at 30 oz for Part B. In a large mixing pail pour in the 14 oz of Part A and all 30 oz. of Part B. Begin mixing with jiffy mixer and drill (slow speed). Once blended (about 15 sec.) begin adding pink non-sag additive "fluff". Pump mixer up / down to break up clumps. Mix for 30 sec. until it is an even black mass.Use the bottom of a 2-inch margin trowel working onto the vertical surface so that it hangs in the vertical blockouts, against the wall, column, etc.