EMCRETE

Non-Hazardous High-Impact Elastomeric Concrete Material

TECH DATA

Product Description

EMCRETE is a flexible, durable, high-impact elastomeric concrete material. It is a bio-based, non-hazardous, extremely-low VOC product primarily used as a component of an expansion joint assembly either to fill blockouts on each side of an expansion joint gap, to repair a damaged expansion joint gap edge, as an impact-absorbing backfill nosing, or as a fast-curing patching material for potholes, or spalls on concrete roadways, parking surfaces, bridges, runways, etc.

EMCRETE is comprised of a two-component polyurethane resin mixed with sand and chopped fiberglass aggregates. The sand imparts compressive strength. The fiber provides cross-linked reinforcement while, in combination with the sand, adds body to the polyurethane resin.

Typical Uses

Some of the typical uses of EMCRETE within EMSEAL expansion joint systems are:

Repair
To repair spalled gap edges in high load-bearing applications. The spalled concrete must be cut out using industry standards for concrete repair. Once the gap edge has been cut and cleaned, the self-leveling EMCRETE can be poured to form ahorizontal elastomeric gap edge that is more resistant to spalling and gap edge deterioration.

Elastomeric Concrete
To act as an elastomeric concrete where the possibility of spalling or cracking is a concern for standard concrete or where existing spalls or potholes in concrete roadways, runways, bridges etc. is required.

Leveling and Dampening
As a leveling bed and sound dampening support of the coverplates of EMSEAL SJS Seismic Joint Systems systems. The SJS family of products from EMSEAL are coverplate systems secured to a precompressed foam and spline assembly. The coverplates ride on the deck surface. It is typical to form, cut or grind a shallow blockout on each side of the joint gap and fill this with EMCRETE. This provides a surface that can be grinded to ensure that the coverplates do not rock and are fully supported over their entire contact area. Ensuring the plates are properly supported while absorbing the shocks of vehicular impact both contribute in attenuating sound.

Impact Absorbing
As an impact-absorbing header material behind the rails of EMSEAL FP systems. MIGUTAN, DSM-FP, and SJS-FP are systems designed for installation in split-slab conditions. These systems install onto the structural slab and feature watertight integration with the split-slab waterproofing membrane through integral side flashing sheets supplied with the expansion joint system.

Installation Summary

The following is a summary. Installation must follow the complete Installation Instructions shipped with the material and available at *www.emseal.com*.

Substrates must be thoroughly dry and the temperature must be at least 45°F (8°C) and rising to install EMCRETE. The bonding surface should be in sound and good condition before prepping. The entire bonding surface is to be wire brushed and fully cleaned leaving no contaminants such as dirt, dust, oils, or other residue on any surface. Next, the area where EMCRETE will be poured should be fully prepped and formed. The substrate is then primed with the (non-HAP) EMPRIME primer that is included with units of EMCRETE and allowed to dry for 30 minutes. The EMCRETE is then mixed in accordance with the complete Installation Instructions in the pre-measured amounts provided. The EMCRETE is then poured into the forms where it will self-level and cure exothermically. It can be trowelled to ensure a consistent surface. The working time of EMCRETE is less than 10-minutes after mixing. Working time, and cure time, is longer in cool weather and shorter in hot weather. EMCRETE reaches a hardness which allows for pedestrian or vehicular traffic within 1-hour after application under standard conditions.

Supply

Packaging
EMCRETE Elastomeric Concrete is sold by the unit. Each unit is comprised of a large container which holds of pre-measured containers of the liquids (Parts A & B, and EMPRIME) as well as Sand and Fiber.

Yield*
1 Unit: 9,766 cubic cm (596 cubic inches)
*account for a 5% waste factor

Performance Properties

IMPORTANT: When comparing elastomeric concrete materials it is vital to compare the data of the fully mixed material. Resin-only data is irrelevant as the material is not used without aggregate. Aggregate increases compressive strength at the expense of flexibility and brittleness. Heavy aggregate loading, while it reduces cost, is detrimental to performance of the material as an impact-absorbing nosing and patching material. The following are properties of EMCRETE (resins, sand, and chopped fiberglass) at as-supplied ratios .

Properties of Mixed EMCRETE Resin and Aggregate

Physical Property	Value	Test Method
Adhesion (primed concrete) Adhesion (primed steel) Adhesion (primed galvanized steel)	413 psi 492 psi 417 psi	ASTM D7234 ASTM D7234 ASTM D7234
Tensile Strength Elongation	651 psi 20%	ASTM D412 ASTM D412
Compressive Strength Compressive Modulus	1500 psi 11.27 ksi	ASTM D695 ASTM D695
Hardness (Shore D) Hardness (Shore A)	57 98	ASTM D2240 ASTM D2240
Viscosity @ 50 rpm (mixed resin)	1560 cP	ASTM D4847
Impact Testing —Ball Drop**	No Failure at 69°F (20°C) No Failure at -4°F (-20°C)	ASTM D3029-95 ASTM D3029-95

**1-pound steel ball dropped onto 3/8-inch thick (8mm) x 2 3/4-inch diameter (70mm) disk from 17 feet (5.3m)

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EMCRETE Applications

Fig. 1: EMCRETE Used as Expansion Joint Nosing Material

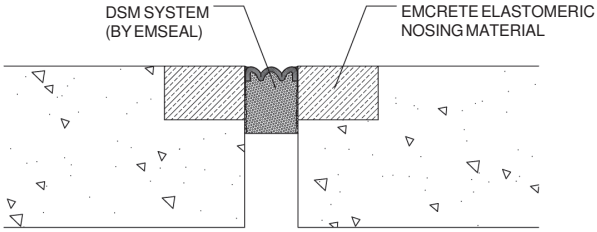


Fig. 2: EMCRETE Used as Concrete Patching Material

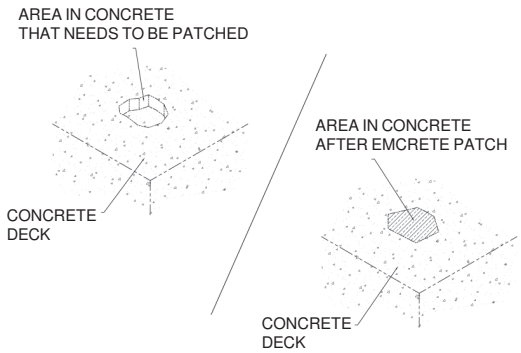
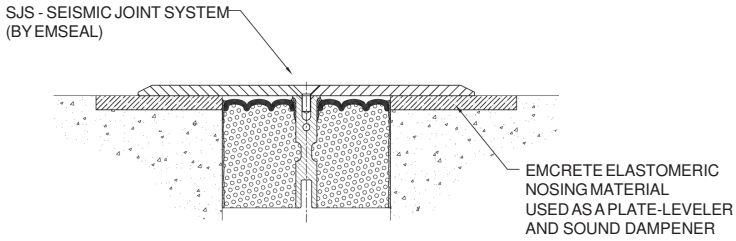


Fig. 3: EMCRETE Used with SJS System as a Plate-Leveler and Sound Dampener



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