Edison Coatings, Inc.

FLEXI-MATRIX 545

100% SOLIDS EPOXY POLYMER CONCRETE

DESCRIPTION:

FLEXI-MATRIX 545 is a two component, 100% solids, moisture-insensitive epoxy used for making high-strength, chemical resistant polymer concrete. ***FLEXI-MATRIX 545*** may be used under wet or dry conditions, or even underwater, to provide durable, high-strength toppings, patches, floors, walls or other structural elements, when used in accordance with instructions. It may be applied over concrete, steel, tile, wood and fiberglass.

SUGGESTED USES:

✔ **As a waterproof, chemical resistant barrier and structural repair material in a wide variety of marine and industrial applications.**

✔ **For casting of polymer concrete floors, tanks, piers, machine bases and structures.**

✔ **Repairs to piers, dams, sumps, tanks, floors and other structural elements, in or out of water.**

TECHNICAL DATA:

PROPERTY	COMMENTS
Composition	Low Modulus, Low Viscosity, Modified Epoxy with adhesion promoting additives
Viscosity	Approx. 450 - 700 cps
Mix Ratio	3:1 by volume
Pot Life	30 min. at 70°F
Tack-Free Time	4 - 8 hours at 70°F
Bond Strength	>300 psi, wet or dry
Compressive	10,500 - 14,000 psi
Flexural	5,900 - 9,000 psi
Tensile	>2,000 psi

PHOTOS: FLEXI-MATRIX 545 flows down a polyethylene-lined chute into a plywood form. The walls of this chemical wastewater sump were eroded to depths up to 9 inches. Following construction of a new reinforcing steel grid, and using the eroded wall as the rear of the form, plywood forms were set and a new, structurally independent polymer concrete tank was poured. Wall thickness ranged from 6 to 15 inches. Height was 8 feet. The final stages of pouring and set occurred after the tank was refilled with wastewater.

APPLICATION:

1. Surface Preparation: Apply to clean, dry, damp or wet (even under standing water) substrates free of grease, oil, dirt, coatings or other materials which may inhibit adhesion. Steel surfaces should be free of rust and scale for maximum effectiveness. Unsound materials should be removed prior to repair. If existing structure will serve merely as a form for new ***FLEXI-MATRIX 545*** elements, assure adequate footings, anchoring, reinforcement and

design thickness by consulting with a Licensed Professional Engineer.

2. Mixing: Add pre-measured hardener to short-filled container of resin, or carefully measure proper proportions of resin and hardener when mixing partial units. Mix using slow speed drill mixer for at least two minutes, scraping container sides and bottom periodically to assure thorough blending of all materials. Careful, thorough hand-mixing is also acceptable.

Once liquid components have been thoroughly blended, add dry aggregates. Fine aggregate should be clean, graded sand and/or crushed stone, conforming to the requirements for concrete aggregate. Prepackaged aggregate is also available from Edison Coatings, Inc. Coarse aggregate should be clean gravel, quartz or trap rock, with maximum size less than 1/3 the diameter or thickness of the anticipated pour. For best performance, a mixture of one part stone to two parts sand by weight is recommended. Mechanical mixing is required. Pot life is greatly extended once all sand and gravel have been added. The ratio of dry materials to binder may be varied to produce differing slumps and densities. To achieve an impervious polymer concrete, ratios of 5:1 by weight (fillers:epoxy mixture) or lower are required. Small scale trial pours utilizing actual dry materials and proportions for your particular project are strongly recommended.

3. Application: Apply optional bond coat of neat resin/hardener mixture by brush, roller or squeegee, if desired. On porous surfaces, apply in such a manner that material briefly "floods'' the surface, allowing good penetration. If material is completely absorbed, apply additional material. On smooth surfaces apply even, thin films. If excess material is ponded, spread or remove. **Nominal coverage rate is 100 - 200 sq. ft. per gal.** Actual coverage will vary with surface texture, porosity and application technique. If desired, more than one coat may be applied. For best results, apply second coat within 96 hours, or prepare fully-cured first coat by light sanding or solvent-wiping with a strong solvent such as Methyl Ethyl Ketone, Xylene, 1,1,1-Trichloroethane, or ***Edison SYSTEM 100 solvent.*** **CAUTION!** Solvents are hazardous materials. Carefully observe all Material Safety Data Sheet guidelines as directed by the solvent manufacturer.

4. Topping: Polymer concretes and mortars based on ***FLEXI-MATRIX 545*** may be poured at any time, whether bond coat has set or not, and almost without regard as to length of cure of bond coat. Techniques for forming and pouring ***FLEXI-MATRIX 545*** polymer concretes are similar to those employed with portland cement concretes, except that shrinkage is negligable and slump is generally much higher. Adhesive strength of ***FLEXI-MATRIX 545*** is also very high, and positive form release techniques are essential. Use polyethylene sheet or polyurethane varnish for facilitating form release. Oils may be inadequate.

Thin coatings of ***neat FLEXI-MATRIX 545*** resin/hardener are compatible for further topping with new concrete or other cementitious topping/patching materials. These may be applied at any point from immediately after ***FLEXI-MATRIX 545*** application, until the mixture begins to ``gel'' and becomes tacky. Do not apply toppings over ***FLEXI-MATRIX 545*** which is cured to a tack-free or near tack-free state. Reapply ***FLEXI-MATRIX*** bond coat per the above instructions, if necessary, to assure proper bonding, under such conditions.

5. Limitations: Do not apply below 45°F or when temperatures of substrate, air or topping may fall below 45°F within 8 hours of application. Do not apply coatings of this product against hydrostatic pressure from behind the slab, as this product is not intended for negative-side waterproofing.

6. Curing, Handling, Clean-up: Clean tools immediately after use with above-referenced solvents. Avoid skin and eye contact. Use with adequate ventilation. Observe all safety handling, storage and personal protection guidelines as detailed in the Material Safety Data Sheets provided with this product. Temperature affects curing, handling and spreading. Presence of moisture also accelerates cure. To speed product reaction time, addition of up to 10% ***FLEXI-SPEED 599*** is permitted. Refer to label guidelines and warnings.

FOR COMMERCIAL AND INDUSTRIAL USE

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