CORROSION ENGINEERING SPECIFICATION FOR INSTALLATION

STEEL PLATE FLOORING WITH EPOXY ADHESIVE

1. SCOPE

1.1 The following specification governs materials, preparation and installation of abrasion-resistant steel plate floors.

1.2 Steel plate floors are used primarily in the Dairy and also in Food and Beverage Processing Industries. This type of floor is extremely durable and is used where resistance to physical impact, abrasion and a surface free of joints is required.

1.3 Steel plate are bonded to a properly prepared concrete surface using a 100% solids epoxy setting bed.

2. MATERIALS OF CONSTRUCTION

2.1 Steel Plates

2.1.1 Steel floor plate shall meet ASTM Specifications A-263, A-370, and A-666.

2.1.2 Plate should have Diamond tread surface for slip resistance:

2.2 Setting Beds/Adhesive

2.2.1 Epoxy setting bed - THINSET® Adhesive (Product Data Sheet CE-158) from Corrosion Engineering which is a 100% reactive epoxy adhesive composed of an epoxy resin, chemically curing hardener, and silica filler.

2.3 Epoxy Primer

2.3.1 PENNTROWEL® EPOXY PRIMER (Product Data Sheet CE-139).

3. CONCRETE PREPARATION

3.1 New concrete shall be structurally sound, homogeneously poured, clean, free of dirt or contamination, and dry. It shall be cured sufficient to pass ASTM D-4263. The base slab shall be wood float or broom finished, with no low spots where puddles can form when slab is flooded with water. Concrete should have a level surface and be sloped to drain at 1/4"/ft, if slope is required.

3.2 Prior to commencement of any work, the flooring contractor shall thoroughly examine all new floor surfaces, and report any conditions which will adversely affect proper floor installation.

3.3 Existing concrete which is clean, dry, structurally sound and can safely support the superimposed load shall be considered satisfactory. Contaminated concrete which otherwise meets these requirements shall be thoroughly cleaned and left clean and dry. Eroded, broken, chipped and cracked concrete shall be repaired and cured prior to installation of tile or brick. A slope of 1/4"/ft. to the drains shall be established, if slope is required.

4. APPLICATION OF STEEL PLATING WITH EPOXY SETTING BED/ADHESIVE

4.1 Mix THINSET Adhesive epoxy setting bed material in accordance with manufacturers recommendations. (Read product container labels for specific mix instructions).

4.2 Mix until resin, hardener and filler are blended uniformly. Setting bed material which begins to cure cannot be recovered by adding more resin. Do not add water, Portland cement or any additives or adulterants to any components or the mixed setting bed.

4.3 Apply the setting bed material in a continuous layer to a thickness of 1/8" directly on the concrete slab by trowel, ensuring that there are no voids.

4.4 To improve bond strength and to ensure that concrete is sealed (prevents moisture from inhibiting cure), concrete may first be coated with epoxy primer. Epoxy Primer should be allowed to cure before placing Adhesive.

4.5 Be sure steel plate is free of oil, grease and rust, is shiny and clean, preferably sand blasted. Plate may be solvent wiped; however, be sure solvent has evaporated before setting.

4.6 Before initial hardening has taken place, set the steel plate in the adhesive. Slide each plate along bed until it is a proper distance from adjacent plate. Plates should slide no more than 6'.

4.7 After six (6) plates have been installed, tamp down plates with mallet.

5. INSTALLATION TEMPERATURES

5.1 Epoxy setting bed material and epoxy joint material are formulated for installation between 50°F and 85°F.

5.2. If installation temperatures are below 50°F, substitute cold room hardeners.

5.3 Store product components as close to 75°F as possible. Store plate at 75°F for at least 48 hours. Avoid frost or moisture by keeping plate under cover.

5.4 If installation temperatures are above 85°F:

A. Mix smaller batches of epoxy setting bed material.

B. Keep product components and steel plate as close to 70°F as possible. Refrigerate resinous components 48 hours prior to use.

C. Set mixing pan for setting bed material in cool water or ice bath. Avoid contaminating setting bed mix with water.

6. DISCLAIMER

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6.2 Please contact Corrosion Engineering for specific recommendations at +1-610-833-4000 or fax +1-610-833-3040.

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