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Technical Bulletin #2

Special Considerations in Surface Preparation for Bonded Thinset Terrazzo Systems

I. GENERAL INFORMATION

A concrete surface that is poured to receive thinset terrazzo (monolithic, polyacrylate, or resin) requires particular attention right from the start in order to achieve the maximum performance expected of a terrazzo finish. A bonded, thinset type of terrazzo will be directly affected by the condition of the concrete surface. The substrate must be level and free of cracks. By emphasizing a few **Key** things to the concrete contractor and field superintendent at the time of initial construction a beautiful terrazzo finish can be expected.

II. LEVELING AND PATCHING

Floor patching and leveling is an evil that is unfortunately required when concrete is not installed as flat as a terrazzo finish is expected to be. It is not possible, regardless of cost and time spent, to level a floor surface with the terrazzo mix. The following information is absolutely critical to the successful installation of thinset terrazzo. Through compliance with these basic principles the contractor and his client can anticipate a level, well bonded thinset terrazzo floor.

The slab must be level within 1/4 inch in ten feet. If the slab is not level, bonded terrazzo cannot be installed to within National Terrazzo and Mosaic Association standards. **Should patching be required, please follow the recommendations outlined below.**

III. OBTAINING BOND

To help insure a good bond, **the slab should have a light broom finish for polyacrylate terrazzo or light steel trowel finish for epoxy or polyester terrazzo.** All excess water should be removed. It is best to power trowel the concrete to densify and compact the surface. Power troweling will also minimize the formation of laitance.

IV. CURING COMPOUNDS

- A. Curing compounds of any type **must not be used** even if the label says they will not affect bonding. If they have already been used, they must be mechanically removed from the concrete.
- B. The slab should be sloped to any drains in exactly the same configuration as the finished terrazzo floor.

V. CONDUIT PLACEMENT

All horizontal runs of conduit or plumbing should be completely below grade. These and other protrusions above a flat grade can produce concrete cracks.

VI. JOINT TREATMENT

- A. All specified concrete joints should be installed promptly and **they must be straight.** Divider strips will have to be placed directly over these joints in order to prevent cracking beside the strips. If the dividers have to be set crooked to follow crooked joints, the finished floor will have a very poor appearance.

- B. All concrete pours should stop at these joints to prevent random cracking in the terrazzo from cold pour joints.
- C. **If concrete joints are not shown on the plans, they must be installed** to prevent random concrete cracking and therefore future terrazzo cracks. Rules of thumb for spacing are:
 - 1. Place joints at a maximum distance apart of 20 feet.
 - 2. All corridor intersections and offsets should have joints at each corner.
 - 3. Rectangular slab areas such as corridors should have joints no more than 1-1/2 times their width. For instance, an eight foot wide corridor should have a joint at maximum 12-foot centers.
- D. **Saw cut joints** should be 1/3 the slab depth and must be made within 24 hours. Under no circumstances should snapped chalk lines be sprayed with a lacquer or sealer prior to saw cutting. This is a bond breaker and cannot be removed by acid etching.
- E. The other important element is the product used to patch and/or level.
 - 1. Under **monolithic or polyacrylate terrazzo** use products that contain basically sand, cement, and acrylic.
 - 2. Under **epoxy terrazzo**, epoxy patching and leveling materials should be used.
 - 3. Consult the subcontractor and/or material supplier for specific recommendations.
 - 4. **DO NOT USE ANY PRODUCT THAT CONTAINS GYPSUM.**
- F. At doorways the slab should be gauged to have a consistent depression offset back to the door.

VII. CRACKS

PROPERLY DESIGNED, SUPPLIED, AND INSTALLED CONCRETE SHOULD NOT CRACK!

If cracks develop in the concrete:

- A. Remove the section of concrete back to the nearest existing joints or new joints.
- B. Cut 100% through the concrete on both sides of the crack.
- C. Redowel, and replace the concrete between them.
- D. A new divider must be set over the two new joints.

This procedure must be approved by the architect.

A second method that has proven successful is to place a flexible membrane from strip to strip over the crack area to serve as a crack resistant plane. **Consult the terrazzo contractor and/or material supplier for recommendations.**

VIII. VAPOR BARRIERS

In situations where a resinous terrazzo (epoxy or polyester) is specified, it is necessary to use a recognized vapor barrier under slabs on or below grade. This is an **absolute must** to prevent moisture vapor transmission from interfering with the bonding of terrazzo to the substrate. This principle applies to most other surfacing materials that will not breathe such as resilient sheet goods, rubber tile, etc.

TERRAZZO STRIPS ARE NOT SCREEDS AND DO NOT HELP IN ANY WAY TO LEVEL A TOPPING.

Patching under terrazzo always adds the risk of bond failure and should be avoided by installing concrete flat in the first place. When patching is required, **the most important element to assure a good bond is to have a "clean" porous concrete surface.** This means free of laitance, sealers, curing compounds, oil, mud, dirt, and dust.

IX. LAITANCE REMOVAL

Laitance can be removed by vacuum blasting or acid etching. The same methods can be used to achieve a porous surface unless there are sealers and curing compounds on the surface.

- A. Sealers and curing compounds **must be** abrasively removed. **Acid etching will not work.**
- B. A pressure washer (2,400 P.S.I. plus) must be used to remove mud, dust, etc.
- C. If acid is used for any reason, a pressure washer must be used to remove acid residue **before** it dries. **Acid residue leaves a film that is a bond breaker.** This residue must be abrasively removed if it dries.