

SECTION 090130.91**RESTORATIVE BONDING****PART 1 - GENERAL****1.01 RELATED DOCUMENTS:**

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.02 SUMMARY:

- A. This Section includes the following:
 - 1. Restoration of existing, interior ceramic and quarry tiled floor, wall and ceiling areas to a "like new" appearance and integrity.
 - 2. Installation shall result in a floor, wall and ceiling treatment that will produce a moisture barrier and condition so that the appearance can be maintained using conventional cleaning processes in combination with recommended periodic prescribed support service activities.

1.03 QUALITY ASSURANCE:

- A. Definition - Restorative Bonding: Tile grout restoration and maintenance is referenced generically as Restorative Bonding. This technology is environmentally friendly and permanent in nature, and should not be confused with or compared to grout painting, staining, or otherwise recoloring.
- B. Source of Materials: Provide materials obtained from one source for each type and color of restorative bonding materials.
- C. Installer Qualifications: Engage a licensed, certified, trained and experienced installer who has successfully completed restorative bonding installations similar in material, design, and extent to that indicated for this Project.
- D. Restorative Bonding Products: Products and installation surfaces' shall be as designed by the manufacturer so as not to reduce the co-efficient of friction (slip-resistance) of flooring products to less than required to comply with published U.S. Justice Department Regulations for the "Americans with Disabilities Act of 1990" (ADA, ADA-AG), ANSI A 117.1, and the "Uniform Federal Accessibility Standards" (UFAS); And revisions and amendments thereto.
- E. Mock-ups: Provide mock-up of restorative bonding system at location indicated, or if not indicated, as directed by Architect or Owner. Mock-up shall be approximately 2-feet by 2-feet or include no less than four (4) contiguous floor, wall and ceiling tiles, whichever is larger, at location indicated. Accepted mock-ups shall demonstrate and establish the quality of work by which the remainder of the work shall be judged.
- F. Sanitation Support Service: Contractor shall offer an optional periodic "Sanitation Support Service" to the Owner in writing upon completion of the work.

1.04 SUBMITTALS:

- A. Experience and qualification data for manufacturer and applicator.
- B. Product Data: Submit manufacturer's complete and current product information, technical information, and installation and maintenance instructions.
- C. Submit sample warranty for review.
- D. Shop Drawings: Where locations of the work of this contract are not indicated or completely indicated, prepare and submit shop drawings indicating tile patterns and locations and widths of control, isolation, contraction and expansion joints in tile surfaces.
- E. Samples for Initial Selection Purposes: Submit manufacturer's color charts consisting of full range of colors, textures and patterns available for each type of restorative bonding indicated. Include samples of all materials involving color selection.
- F. Samples for Verification Purposes, submit the following upon request by Architect or Owner:
 - 1. Samples for each type of joint treatment for each color and texture required, not less than 12-inches square, on plywood or hardboard backing, grouted and sealed.
- G. Contractor's proposal for "Sanitation Support Services," including all provisions and services to be provided, frequency of additional cleaning and restorative procedures and annual cost for at least the first year following expiration of manufacturer's warranty.

1.05 DELIVERY, STORAGE, AND HANDLING:

- A. Deliver and store packaged materials in accordance with manufacturer's written instructions and recommendations, in original containers with seals unbroken and labels intact until time of use. Prevent damage or contamination to materials by water, freezing, foreign matter or other causes.
- B. Store items to be incorporated in the Work in stable and secure manner, off of floor, within an area which has ambient temperature controlled within acceptable range required for each product.
- C. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage to the areas indicated, or if not indicated, as designated by the Contractor or Owner.
 - 1. If additional storage is necessary, obtain and pay for such storage off site in a fully bonded and insured facility acceptable to the Owner, with all items stored clearly identified as being assigned to this project. Address for any off-site stored materials shall be provided to the Owner, by the Contractor.

1.06 PROJECT CONDITIONS:

- A. Maintain environmental conditions and protect work during and after installation to comply with manufacturer's current printed instructions and recommendations.
- B. Vent any temporary heaters to exterior to prevent damage to restorative bonding work from carbon dioxide buildup.

- C. Maintain temperatures at not less than 50 degrees F (10 degrees C) in work areas during installation and for 7-days after completion, unless higher temperatures are required by manufacturers' current printed instructions and recommendations.

1.07 WARRANTIES AND GUARANTEES:

- A. Warranty: The manufacturer shall approve the installation and provide their standard written warranty for labor and materials, that the restorative bonding system shall remain adhered, intact (without perceptible deformation) and completely leak free from the date of project Substantial Completion as long as prescribed Support Services are continued, subject to Owner's compliance with written maintenance instructions delivered to the Owner by the Contractor.
 - 1. Warranty provisions shall not apply in the event of occurrence of exclusions in the written warranty, including in part, Owner's noncompliance with written maintenance instructions delivered to the Owner by the Contractor, work performed on the completed system by others that affects its integrity or causes damage; or damage due to neglect, abuse, natural phenomena, acts of God, or otherwise not under the control of the Contractor or due to defective workmanship.
 - 2. The Contractor shall warrant the appearance and integrity of the tile and grout surface indefinitely for as long as warranty provisions are adhered to and the Owner engages the Contractor for optional "Sanitation Support Services."
- B. Repairs that become necessary while restorative bonding system is under warranty and/or guarantee, shall be performed within 14-days of notification to the installer and/or manufacturer, including in part, any required removals, repairs of the restorative bonding system, and restoration of any additional materials removed to perform the work to at least their previously existing condition. Should for any reason, the installer is not able to perform the repairs, it shall be incumbent upon the manufacturer to do so. If repairs are not begun on time, Owner shall have work done by others and costs will be charged to the Contractor, with no detrimental effect on the remaining warranty and no termination of warranty.
- C. The above warranty shall be in addition to, shall be in effect simultaneously with, and shall not alter or limit other project or product warranties or guarantees, nor shall it serve as a limitation to other remedies available to the Owner.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

- A. Manufacturers: Subject to compliance with requirements, provide preapproved products and restorative bonding systems equivalent to "SaniGLAZE Process" system, as manufactured by SaniGLAZE International, LLC; Jacksonville, Florida; Phone: 1-800-874-5554; Website: www.saniglaze.com.

2.02 PRODUCTS - GENERAL:

- A. Restorative bonding system specified is proprietary in nature, and all materials utilized in completion of the work shall be either manufactured or approved in writing for use by the system manufacturer. It is anticipated that these requirements will also apply to any alternate restorative bonding system accepted

- B. All products and installation shall comply with restorative bonding system manufacturer's current written instructions, recommendations and restrictions.
- C. Completed restorative bonding systems shall be capable of sustaining foot traffic within four hours after completion of the work, without damage to the system.

2.03 **MATERIALS:**

- A. Strippers - If Sealer or Floor Finish Exists: SaniGLAZE Polymer Remover, Eradicate, StripTASTIC stripper, Seal Remover, or system manufacturer approved equivalent.
- B. Tile Cleaning Compound: SaniGLAZE Extra Strength Contaminant Remover.
- C. Grout Etching and Cleaning Compound: SaniGLAZE Tile & Grout Prep compound that is specifically formulated to leave a grout surface conducive to micro anchor bonding with SaniGLAZE High Build Glazing Compound, or system manufacturer approved equivalents.
 - 1. The grout preparation gel shall be a maximum strength, non-fuming product comprised of organic and inorganic chelating, scale removing compounds, suspending agents, penetrating detergents, water soluble solvent compounds, viscosity control agents, and odor suppressants.
 - 2. It shall remove embedded soils, dissolve micro-scale and mineral deposits, neutralize iron, rust, and mineral and urine stains without attacking the substrate or excessively dissolving cementitious grout or mortar joints, or having a deleterious effect on metal, fiberglass, porcelain or ceramic fixtures.
 - 3. The grout preparation gel shall promote maximum contacting time and applicator control of the process, and reduce contact hazards to a minimum.
 - 4. The grout preparation gel shall leave no residue, chalk, or grit when properly rinsed.
 - 5. The grout preparation gel shall possess a minimum shelf life of one year and its age shall be within that time limitation period at the time of application.
- D. Grout Renewal/Replacement Compound: SaniGLAZE High Build Glazing Compound, a waterborne moisture impermeable grout glazing compound, in combination with SaniGLAZE Dry Solids to prevent shrinkage and pitting during the curing process; for application to the existing grout between the tiles and leveled to the surface depth of the pretreated grout. Grout glazing compound shall be fully compatible with other components of the restorative bonding system.
 - 1. For Grout Lines Greater Than 62.5-mils Deep: SaniGLAZE High Build Glazing Compound.
 - 2. For Grout Lines Less Than 62.5-mils Deep: SaniGLAZE Glazing Compound.
 - 3. This material shall be non porous and have bonding properties equal to or better than original grout. It shall be of proper viscosity as to seek and fill all substrate voids by gravity and level to the original grout surface level.
 - 4. Color(s): This compound shall be available in varying colors and be capable of matching the existing grout.
 - 5. Restrictions: Grout glazing compound shall not remain on any tile surface.

6. Bonding and Curing: Grout glazing compound must bond with the grout and be cured to form an impermeable barrier to moisture.
 7. Mixing: Utilizing clean, new or undamaged containers and equipment, comply with manufacturer's current written instructions, as follows, unless otherwise indicated or required for warranty:
 - a. SaniGLAZE High Build Glazing Compound (deep grout): Mixture shall contain 1 quart of SaniGLAZE High Build Glazing Compound, up to 8 ozs. Dry Solids, 10 ml Part B Hardener, and shall be mixed thoroughly using a power drill with mixing blade or other mixing device acceptable to system manufacturer.
 - b. SaniGLAZE Glazing Compound (shallow grout): Mixture shall be identical to High Build Glazing Compound, except modified for producing a lower nonvolatile volume which makes it suitable for shallow grout lines. Modified mixture shall be in strict accordance with manufacturer's current written instructions and recommendations, including in part, materials, proportions and mixing requirements.
- E. Shielding Sealer:
1. Porous and Nonporous Tile: SaniGLAZE Super Shield, a waterborne tile surface moisture, grease, oil and chemical barrier, providing an impermeable moisture seal over the entire treated area, with a semi-gloss, gloss or flat finish, as selected. This sealer shall be resistant to urine, disinfectants, bleach, acid bowl cleaner, high pH cleaners, and other chemicals typically used in cleaning rest rooms and other tile and grout areas.
 - a. Finished Appearance: Clear, transparent and invisible when it has dried and cured, with sufficient particle size of the emulsion and surfactant package to allow deep penetration of porous tile substrates, and a chemical adhesion component. Gloss level as selected.
 - b. Maintenance: This compound must be able to recoat itself when maintenance needs arise.
 - c. Slip Resistance: Static Coefficient of Friction or at least 0.70 dry and 0.50 wet when tested with the ASTM Test Method C1028-96.
- F. Optional Support Services - Materials: SaniGLAZE EverGLAZE Universal Cleaner, capable of removing any surface soil and contaminants, renewing the original SaniGLAZE finish or SaniGLAZE Super Shield which was applied during the original restoration, and bringing the floors, walls and ceilings back to the same "like new" appearance affected by the original restoration, using SaniGLAZE EverGLAZE Universal Cleaner, to clean and renew the original SaniGLAZE topical shield.
1. Maintenance by Owner shall include in part cleaning with EverGLAZE Universal Cleaner and/or buffing and recoating SaniGLAZE Super Shield periodically as required to maintain the original restorative bonded surface integrity.

PART 3 - EXECUTION

3.01 EXAMINATION:

- A. Examine surfaces to receive restorative bonding work and conditions under which the system will be installed.
- B. Do not proceed with restorative bonding work until surfaces and conditions comply with requirements indicated in manufacturer's current written instructions and recommendations.

3.02 INSTALLATION - GENERAL:

- A. Prepare and install restorative bonding system in accordance with manufacturer's current written instructions and recommendations, and as otherwise required to obtain manufacturer's warranty.

3.03 PRE-PREPARATION – IF SEALERS OR COATINGS ARE PRESENT

- A. Remove all existing surface-applied polymer based coatings and/or sealers with either SaniGLAZE Polymer Remover, Eradicate stripper, StripTASTIC, Seal Remover, or preapproved equivalent.
- B. Agitate the floor, wall and ceiling surfaces to be restored to ensure loosening and emulsification of such matter. Remove all emulsified and deleterious matter by suction.

3.04 PREPARATION

- A. Floor, wall and ceiling surfaces to be restored shall be mechanically scrubbed utilizing SaniGLAZE Extra Strength Contaminant Remover or preapproved equivalent to remove any remaining embedded contaminants from tile and grout surfaces. Remove scrubbing residue by suction and rinse with clean water flood rinse. Remove rinse solution by suction. Test floor, wall and ceiling surfaces to be restored using hydrion method, and verify that existing pH level will not neutralize chemicals used in the preparation, sealing and finishing processes.

Test floor, wall and ceiling surfaces to be restored using hydrion method, at least one test per 100 square feet of tile surface, and verify that existing pH level will not neutralize chemicals used in the preparation, sealing and finishing processes. Correct any deficiencies prior to continuing with joint treatment applications.

- B. Grout Preparation Procedures: Grout preparation gel shall be applied to the entire surface of the floor, wall and ceiling surfaces to be restored.
 - 1. Grout lines shall be chemically etched and cleaned using SaniGLAZE Tile & Grout Preparation compound or preapproved equivalent that is specifically formulated to leave a grout surface conducive to micro anchor bonding with SaniGLAZE High Build Glazing Compound or preapproved equivalent.
 - 2. A clear water flood rinse shall be applied to the floor and the residue removed by suction. The grout preparation gel shall leave no residue, chalk, or grit after having been properly rinsed.
 - 3. Test floor, wall and ceiling surfaces to be restored using hydrion method, at least one test per 100 square feet of tile surface, and verify that existing pH level will not neutralize chemicals used in the preparation, sealing and finishing processes. Correct any deficiencies prior to continuing with joint treatment applications.

3.05 GROUT GLAZING AND SEALING:

- A. Grout Glazing: Apply SaniGLAZE High Build Glazing Compound or preapproved equivalent system, in combination with SaniGLAZE Dry Solids to prevent shrinkage and pitting during the curing process. This waterborne moisture impermeable grout glazing compound shall be applied to the existing grout between the tiles and leveled to the surface depth of the pretreated grout. The compound shall not remain on any tile surface. The compound shall bond with the grout and be cured to form an impermeable moisture barrier.
1. Any missing grout shall be replaced with SaniGLAZE High Build Dry Solids Grout Replacement System or pre-approved equivalent. It shall be of proper viscosity as to seek and fill all substrate voids by gravity and level to the original grout surface level.
 2. SaniGLAZE High Build Glazing Compound and Dry Solids or preapproved equivalent system, shall also be used for restoring grout lines greater than 62.5 mils deep. It shall be identical to High Build Glazing Compound except for a lower nonvolatile volume which makes it suitable for shallow grout lines.
 3. The high build glazing compound and dry solids shall be formulated to be fully compatible with and function synergistically with other SaniGLAZE or preapproved equivalent products and systems. It shall be of sufficient nonvolatile volume as to actually rebuild rather than simply stain or color existing or new grout. It shall also be of sufficient internal chemical cross-linking to create a cohesive, wear resistant surface.
- B. Sealing: Apply SaniGLAZE Super Shield or pre-approved equivalent, using HLVP Spray equipment, to the entire tile surface to provide an impermeable moisture seal over the entire treated area(s), with the specified gloss level.
- C. Drying and Curing: Provide drying and curing procedures in accordance with manufacturer's current written instructions and recommendations, or if not indicated, by means of a mechanically generated air flow.

3.05 CLEANING AND PROTECTION:

- A. Cleaning: Upon completion of restorative bonding applications, clean all new and adjacent existing tile surfaces so they are free of foreign matter. Remove any residue, splatter and similar materials from adjacent and other surfaces, wherever occurs.
- B. Remove all trash, containers, cartons, debris, excess materials, etc., which results from work under this Section, and legally dispose of off Owner's property.
- C. Protection: Advise Contractor and Owner in writing of protections necessary from completion of restorative bonding work and project Substantial Completion.

3.06 CLOSEOUT:

- A. Deliver the following to the Contractor or Owner, as applicable, in duplicate 3-ring binders clearly identifying the project, Contractor, Installer, and Owner on the cover and spine:
1. Fully executed warranty, subject to acceptance of prescribed Support Services.
 2. Complete contact information for the system manufacturer and installer
 3. Complete printed cleaning and maintenance instructions. Include at least two sources with complete contact information for any special cleaning and maintenance solutions, materials and supplies.

4. Proposal for "Sanitation Support Services."

END OF SECTION