

SECTION 090052

SPRAY APPLIED WALL TILE ADHESIVE

CSI 3-PART **LONG-FORM** GUIDE SPECIFICATION
USE FOR CONTRACT DOCUMENT (CD) SPECIFICATION ISSUES
EDIT TO SUIT PROJECT

PART 1 - GENERAL

1.1 SUMMARY

- A. Work of this Section consists of spray applied wall tile adhesive, and includes but is not limited to the following:
1. Spray-Lock™ 5500 Zero VOC Adhesive
 2. Substrate preparation
 3. Substrate testing
- B. Related Documents and Sections: Examine Contract Documents for requirements that directly affect or are affected by Work of this Section. A list of those Documents and Sections include, but is not limited to the following:
1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and DIVISION 01 General Requirements, Specification Sections, apply to this Section.
 2. SECTION 092113, PLASTER ASSEMBLIES
 3. SECTION 092100, PLASTER AND GYPSUM BOARD ASSEMBLIES
 - a. SECTION 092116, GYPSUM BOARD ASSEMBLIES
 - b. SECTION 092613, GYPSUM VENEER PLASTERING
 4. SECTION 092800, BACKING BOARDS AND UNDERLAYMENTS
 - a. SECTION 092816, GLASS-MAT FACED GYPSUM BACKING BOARDS
 - b. SECTION 092819, FIBERED GYPSUM BACKING BOARDS
 5. SECTION 093000, TILING
 - a. SECTION 093013, CERAMIC TILING
 - b. SECTION 093023, GLASS MOSAIC TILING
 - c. SECTION 093026, PLASTIC TILING
 - d. SECTION 093029, METAL TILING
 - e. SECTION 093033, STONE TILING
 6. SECTION 093100, THIN-SET TILING
 - a. SECTION 093113, THIN-SET CERAMIC TILING
 - b. SECTION 093123, THIN-SET GLASS MOSAIC TILING
 - c. SECTION 093126, THIN-SET PLASTIC TILING
 - d. SECTION 093129, THIN-SET METAL TILING
 - e. SECTION 093133, THIN-SET STONE TILING

1.2 REFERENCES

NOTE: Coordinate and edit to the correct Section number below. The numbers shown indicate relevant broad-scope, medium-scope and narrow-scope numbers of the CSI MasterFormat® system.

- A. Abbreviations and Acronyms per SECTION 011000 or 011100, SECTION 014000, and as follows:
1. AHJ. Authority Having Jurisdiction from local, state and federal regulatory agencies.
 2. Per. In accordance with.

3. RH. Relative humidity.
- B. Definitions per SECTION 011000 or 011100, SECTION 014000, and as follows:
1. Adhesive: A substance that unites or bonds surfaces together.
 2. Gypsum Wallboard or Gypsum Board. Also known as Drywall or Sheetrock™ or GWB, it is made from calcium sulfate dihydrate (gypsum) pressed into sheets with facings of paper or a fiberglass mat with and without an embedded fiberglass mesh.
 3. [HAP](#). Hazardous Air Pollutant
 4. [LEED®](#). Leadership in Energy and Environmental Design, a set of USGBC rating programs applicable to construction projects.
 5. [VOC](#). [Volatile Organic Compounds](#) are chemical compounds that have a high vapor pressure and low water solubility. They include a variety of chemicals, some of which may have short- and long-term adverse health effects when concentrated indoors.
- C. Referenced Standards per SECTION 014000 and as follows:
1. ACI. American Concrete Institute; www.concrete.org
 2. ANSI. American National Standards Institute; www.ansi.org
 - a. ANSI A108 / A118 / A136, Material and Installation Standards
 - b. ANSI A118.9, Test Methods and Specifications for Cementitious Backer Units
 - c. ANSI A137.1, Standard for Mosaic, Quarry, Pressed Floor, Glazed Wall, Porcelain, and Specialty Tiles Including Trim Shapes
 3. ASTM. ASTM International; www.astm.org
 - a. ASTM C1288, Standard Specification for Discrete Non-Asbestos Fiber-Cement Interior Substrate Sheets
 - b. ASTM D907, Standard Terminology of Adhesives
 - c. ASTM D1144, Standard Practice for Determining Strength Development of Adhesive Bonds
 - d. ASTM D1151, Standard Practice for Effect of Moisture and Temperature on Adhesive Bonds
 - e. ASTM D3167, Standard Test Method for Floating Roller Peel Resistance of Adhesives
 - f. ASTM D3983, Standard Test Method for Measuring Strength and Shear Modulus of Nonrigid Adhesives by the Thick-Adherend Tensile-Lap Specimen
 - g. ASTM D5116, Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products
 - h. ASTM D6004, Standard Test Method for Determining Adhesive Shear Strength of Carpet Adhesives
 - i. ASTM E329, Standard Specification for Agencies Engaged in Construction Inspection and/or Testing
 - j. ASTM E699, Standard Practice for Evaluation of Agencies Involved in Testing, Quality Assurance, and Evaluating of Building Components
 4. BAAQMD. Bay Area Air Quality Management District; www.baaqmd.gov
 5. CARB. California Air Resources Board; www.arb.ca.gov
 6. EPA. U.S. Environmental Protection Agency; www.epa.gov
 7. FDA. US Food and Drug Agency; www.fda.gov
 8. GS. Green Seal; www.greenseal.org
 9. ICC. International Code Council; www.iccsafe.org
 10. ISO/IEC. International Organization for Standardization, International Electrotechnical Commission; www.iec.ch/
 11. NFPA. National Fire Protection Association; www.nfpa.org
 12. SCS. Scientific Certification Systems; www.scs-certified.com
 13. SCAQMD. South Coast Air Quality Management District; www.aqmd.gov
 14. TCNA. The Tile Council of North America; www.tileusa.com
 - a. 2009 [TCA Handbook](#) for Ceramic Tile Installation
 15. UL. Underwriters Laboratories Inc.; www.ul.org

16. USGBC. United States Green Building Council; www.usgbc.org

1.3 SUBMITTALS

NOTE: Coordinate and edit to the correct Section number below.

- A. Product Data per SECTION 013000 or 013300 and as follows: Submit manufacturer's printed descriptions of materials, components and systems; performance criteria; use limitations; preparation instructions and recommendations; storage and handling requirements and recommendations; and installation methods.
- B. Quality Assurance Submittals per SECTION 014000 and as follows:
 - 1. Certificates: Submit with manufacturer's signature certifying that each product and/or system meets the requirements of the performance characteristics, physical criteria, and applicable standards specified.
 - 2. Test and Evaluation Reports: Submit certified test results by a recognized testing laboratory in accordance with specified test methods for each product and/or system indicating physical, chemical and performance characteristics.

NOTE: Edit LEED Requirements below to suit project.

- C. Sustainable Design (USGBC [LEED®](#)) Submittals: Submit the following in accordance with the requirements of SECTION 018113, LEED REQUIREMENTS:
 - 1. LEED Credit IEQ, Indoor Environmental Quality. Submit completed LEED 2009-NC v.3 Submittal Templates and required paperwork as follows:
 - a. IEQ 4.1: Low Emitting Materials, **Adhesives & Sealants**, VOC Data
 - 1). Submit manufacturers' product data for construction **adhesives** and sealants, including printed statement of VOC content and MSDS Sheets.
 - 2). Submit manufacturer's certification that products meet the requirements of SCAQMD Rule 1168 in areas where exposure to freeze/thaw conditions and direct exposure to moisture will not occur.
 - 3). Submit manufacturer's certification that products meet the requirements of BAAQMD Regulation 8, Rule 51 for containers larger than 16 oz and with CARB for containers 16 oz or less, for areas where freeze/thaw conditions do exist or direct exposure to moisture can occur.

NOTE: Coordinate and edit to the correct Section number below.

- D. Closeout Submittals per SECTION 017000 or 017700, and as follows:
 - 1. Operation and Maintenance Data: Including, but not limited to, methods for maintaining installed products and precautions against cleaning materials with methods detrimental to finishes and performance.
 - 2. Executed Warranty Documentation: Manufacturers' material warranties and installers workmanship warranty.
 - 3. Record Documents: Drawings, Specifications, Product Data.

NOTE: Edit LEED Requirements below to suit project.

- 4. Sustainable Design Closeout Documentation: Submit completed USGBC LEED® Submittal [Worksheet Templates](#) for credit IEQ 4.1.

1.4 QUALITY ASSURANCE

- A. Qualifications:

1. Installer / Applicator: Perform installation with skilled, experienced and trained workmen supervised by trained personnel who shall have a minimum three (3) years successful experience in installations of similar size and scope.

NOTE: Installer / Applicator qualification requirement recommended for proper substrate preparation for wall tile material to be adhered.

2. Testing Agency: An independent testing agency with the experience and capability to conduct the testing indicated, meeting requirements of ISO/IEC Standard 17025 or ASTM E699 and ASTM E329.

B. Source Limitations: Obtain spray-applied adhesive through one source from a single manufacturer.

C. Sustainability Standards and Certifications:

NOTE: Edit sustainability standards and certifications below to suit project.

1. Adhesive and Sealant VOC Limits: According to South Coast Air Quality Management District [Rule 1168](#) and [GS-36](#) for aerosols.
2. VOC Limits: As tested using U.S. EPA Reference Test Method 24 and as defined by
 - a. South Coast Air Quality Management District Rules: In areas where exposure to freeze/thaw conditions and direct exposure to moisture will not occur.
 - 1). SCAQMD Rule 1168, Adhesive and Sealant Applications
 - b. Bay Area Air Quality Management District Regulation: For containers larger than 16 oz., for areas where freeze/thaw conditions do exist or direct exposure to moisture can occur.
 - 1). BAAQMD [Regulation 8, Rule 51](#)
 - c. California Air Resources Board: For areas where freeze/thaw conditions do exist or direct exposure to moisture can occur.
 - 1). CARB for containers 16 oz. or less.

NOTE: Benchmark mockup requirement recommended to test substrate preparation, workmanship, and compatibility between finish wall tile material and adhesive.

D. Benchmark Installations per SECTION 014000, and as follows: Provide mockup installations to verify final selections made under sample submittals and prototypes, to demonstrate aesthetic effects and set quality standard benchmarks for materials and execution.

1. Install mockup installations for benchmarking each unit type in the Work as indicated by the Drawings or directed by the Architect.
2. Approved mockups shall be benchmark installations and may be incorporated into the Work if accepted without exception by the Architect.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Delivery, Storage and Handling per manufacturer's recommendations, SECTION 016000, and as follows:

1. Delivery and Acceptance Requirements
 - a. Deliver materials to Project site in an undamaged condition, in original, unopened and undamaged packages or containers bearing manufacturer's intact label, names, brand names, types and thicknesses of contents, and proper handling, storing, unpacking, protecting, and installation instructions, as warranted.
 - b. Inspect shipped materials on delivery to ensure compliance with requirements of Contract Documents and to ensure that products are undamaged and properly protected. Reject damaged goods and accept properly ordered, protected and undamaged goods.

2. Storage and Handling Requirements
 - a. Store adhesive materials in a dry, temperature-controlled interior area at 68-80 deg F (20-27 deg C). Avoid exposure to temperature extremes. Protect materials from damage from improper handling, and the action of other trades.
3. Packaging Waste Management
 - a. Request in writing that manufacturers, fabricators, suppliers and shippers provide least amount of packaging that adequately and properly protects, supports and contains the items shipped, and is reusable, returnable or recyclable.

1.6 WARRANTY

- A. Provide Spray-Lock™ Wall Panel Adhesive Manufacturer's Material and Workmanship Warranty:
 1. Aerosol (22oz, 18oz) Wall Adhesive shall be free from defects in material and workmanship for a period of two (2) years from date of manufacture when handled, stored and transported per adhesive manufacturer's requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS / FABRICATORS

- A. Manufacturers List: Subject to compliance with requirements, provide products by one of the following:
 1. Spray-Lock™ 5500 by Interlock Industries, Inc., 5959 Shallowford Road, Suite 309, Chattanooga, TN 37421; 706.517.8989; 706.517.8990 (fax); www.spraylock.com

NOTE: Coordinate and edit to the correct Section numbers below.

2. Substitution Limitations: Manufacturers of equivalent products beyond those listed above shall be considered when submitted per SECTION 013000 or 013300, and SECTION 016000, using CSI Substitution Request Form 1.5C (During the Bidding Phase) or Form 13.1 (After the Bidding Phase.) [link](#)

- B. Product Options:
 1. Spray-Lock™ 5500 for adhering wall tiles and natural stones of consistent thickness.
 2. Wall Tile Type: 6 x 6 tile size or smaller
 - a. Ceramic Tile
 - b. Porcelain Tile
 - c. Glass Mosaic Tile
 - d. Plastic Tile
 - e. Metal Tile
 - f. Stone Tile

NOTE: Tiles must be structurally sound with a non-grooved backing.

2.2 DESCRIPTION

- A. Spray-Lock 5500 is an aerosol water-based acrylic blend adhesive that is pressure sensitive, chemically cross-linking, VOC-Free, non-flammable per NFPA 704, and is a non-HAP, emitting no dangerous fumes or odors.
- B. Sustainability Characteristics

1. [USGBC LEED Rating](#): Comply with project requirements intended to achieve the following Rating, as measured and documented according to the USGBC LEED® Green Building [Rating and Version](#) indicated:

NOTE: Each LEED Version requires a different credit total to achieve the desired LEED Rating.

NOTE. Select one of the following Ratings:

- a. Rating: Certified
- b. Rating: Silver
- c. Rating: Gold
- d. Rating: Platinum

NOTE. Select one of the following Versions:

- e. Version: [LEED 2009-NC](#) v. 3 (New Construction)
 - f. Version: [LEED 2009-EB](#) v. 3 (Existing Building)
 - g. Version: [LEED 2009-CI](#) v. 3 (Commercial Interiors)
 - h. Version: [LEED 2009 for Schools](#)
 - i. Version: [LEED for Retail](#), v. 2 (July 2008) Draft (Commercial Interiors)
 - j. Version: [LEED for Health Care](#)
2. Applicable LEED Credits: Performance requirements of the following LEED Categories and Credits apply to this Section and are met as follows:
 - a. Materials & Resources (MR):
 - b. Indoor Environmental Quality (IEQ):
 - 1). IEQ Credit 4.1, Low-Emitting Materials: **Adhesives** and Sealants: as applied to Spray-Lock adhesives.
 - a). SCAQMD Rule 1168 sets a limit of 65 grams / liter (g/L) for Ceramic Tile adhesives.
 - b). BBAQMD Regulation 8, Rule 51, requires a VOC limit of 150 g/L for installation on Porous Substrate Materials, and requires no use of an aerosol adhesive spray product unless the VOC content, including the propellant, does not exceed 75 percent by weight.
 - c). Spray-Lock™ 5500 Adhesive VOC: **0.0** g/L

NOTE: Spray-Lock™ 5500 is currently undergoing emission testing by third-party certifier, SCS.

PART 3 - EXECUTION

3.1 FIELD CONDITIONS

- A. Conditions and Measurements: Visit jobsite to verify installation conditions and floor measurements.

NOTE: Coordinate and edit to the correct Section number below.

- B. Ambient Conditions per manufacturer's written recommendations, SECTION 017000 or 017100 or 017116, and as follows:
 1. Environmental Limitations: Do not deliver or install until building is enclosed, overhead work is complete, wet work is complete, and HVAC system has been fully operating a minimum 72 hours, consistently maintaining temperature and relative humidity at occupancy levels, all in accordance with manufacturer's recommendations.
 - a. Maintain for space and substrate a min. 68 deg F (20 deg C) to max. 80 deg F (26.7 deg C) temperature for 24 hours prior to, and during installation. Minimum temperature thereafter shall be 55 deg F (13 deg C).
 - b. Maintain wall tile and adhesive manufacturer's recommended RH prior to and during Installation.

2. Conditioning: Do not install adhesive and wall tile until all products are same temperature as space where they are to be installed.

3.2 EXAMINATION

NOTE: Coordinate and edit to the correct Section number below.

- A. Examination per SECTION 017000 or 017100 or 017116, and as follows:
 1. Acceptance of Conditions: Carefully examine installation areas with Installer/Applicator present, for compliance with requirements affecting Work performance.
 - a. Verify that field measurements, surfaces, substrates, structural support, tolerances, levelness, plumbness, temperature, humidity, cleanliness and other conditions are as required by the manufacturer, and ready to receive Work.
 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 PREPARATION - WALLS

NOTE: Coordinate and edit to the correct Section numbers below.

- A. Preparation per adhesive and wall tile manufacturer's written instructions, ANSI A108 / A118 / A136, the 2009 TCA Handbook, SECTION 017000 or 017100 or 017123, and as follows:
 1. Prepare finished substrates to ensure proper adhesion of wall tile material.
 - a. Ensure substrate, wall tile product and surrounding areas are clean and dust free.
 - 1). Damp-wipe substrate if dust is present.

NOTE: Edit item below based on wall tile manufacturer's recommendations, coordinating vapor barrier type, location and installation with engineered design of exterior wall system.

NOTE: Do not use this system in wet areas or areas consistently exposed to RH over 75 percent.

- b. Apply a contiguous edge-sealed vapor barrier to exterior wall system, as recommended by wall tile manufacturer.
- c. Protect adjacent surfaces from overspray using spray-shields, drop cloths, paper or other non-staining masking materials.
- d. Wall substrates shall be thoroughly dry before starting installation.

NOTE: Select correct substrate(s), edit to suit project, and delete items that do not suit project.

- B. Acceptable Substrate Types: Dry, clean, structurally sound, well nailed and/or glued, free of voids and with joints that do not exceed 1/16 inch (1.6mm), and additionally prepared as follows:
 1. Gypsum Wallboard (GWB): Tape and finish joints, priming exposed joint compound with latex based primer.
 2. Fiber Cement Backer Board: Only non-dusting types manufactured per ANSI A118.9 and ASTM C1288, Grade I or II, using the Hatschek process and cured by high-pressure steam autoclaving.
 3. Wood or Plywood
 4. Metal: Securely fastened with concealed or flush fasteners and/or glued.

3.4 INSTALLATION / APPLICATION - WALLS

NOTE: Coordinate and edit to the correct Section number below.

- A. Installation per manufacturer's written instructions, ANSI A108 / A118 / A136, the 2009 TCA Handbook, SECTION 017000 or 017300 or 017316, and as follows:
 1. Spray-Applied Adhesive Method:

- a. Layout and mark wall substrates equivalent to manufacturer's recommended area for size of aerosol can container used. Apply no more or less adhesive than what manufacturer recommends.
 - 1). Hold aerosol can upright, approximately 18-24 inches (45.7cm - 61cm) horizontally from the substrate, aim and pull trigger.
 - 2). Move aerosol can back and forth spraying smoothly and evenly. Coverage per aerosol can container is 40-50 sf (3.7-4.6 m²) and as follows:
 - a). 40 sf (3.7 m²) for 4x4 Ceramic/Porcelain Wall Tile
 - b). 40 sf (3.7 m²) for 6x6 Ceramic/Porcelain Wall Tile
 - c). 40 sf (3.7 m²) for 6x6 Smooth Backed Stone
 - d). 40 sf (3.7 m²) for 4x4 Textured Backed Stone
 - e). 45 sf (4.2 m²) for 4x4 Smooth Backed Stone
 - 3). Remove adhesive build up on the aerosol can nozzle.
 - 4). Remove overspray with a damp cloth while adhesive is still wet.
- b. Do not place wall tile product until adhesive is ready to receive it per adhesive manufacturer's instructions.
 - 1). Dry Time: Adhesive is typically dry to the touch when there is no adhesive transfer when lightly touched.
 - 2). Open Time After Application: 1 hour
- c. Place wall tile, adjust and reset until layout placement is certain.

NOTE: To make it easier to keep your tiles straight and square find your center point and chalk your lines before spraying.

Spray-Lock adhered tiles won't sag, so one does not need to start at the bottom as with mastics.

- d. Apply firm pressure to wall tile to ensure proper bonding with instant shear strength. Wall tile may be grouted within one hour after applying the tile.

3.5 FIELD QUALITY CONTROL

NOTE: Coordinate and edit to the correct Section number below.

- A. Site Tests and Inspections: Per ANSI A108 / A118 / A136, the 2009 TCA Handbook, SECTION 014000 or 014500 or 014523, and as follows:
 1. Inspect wall tile installation for non-conforming work including, but not limited to, the following:
 - a. Lack of adequate adhesion
 - b. Adhesive overspray
 - c. Improper substrate preparation as indicated by:
 - 1). Buckling
 - 2). Cracks

3.6 CLEANING

NOTE: Coordinate and edit to the correct Section number below.

- A. Waste Management per SECTION 017000 or 017400 or 017419, and as follows:
 1. Store and recycle cartons and empty aluminum aerosol cans.

3.7 CLOSEOUT ACTIVITIES

NOTE: Coordinate and edit to the correct Section number below.

- A. Substantial Completion Requirements per SECTION 017000 or 017700 and as follows:
 1. Perform Closeout Procedures per SECTION 017000 or 017700.

2. Perform Demonstration and Training with Owner's designated staff per SECTION 017000 or 017900.
3. Sustainable Design Closeout Documentation per SECTION 017000, 017800 or 017853: LEED credit worksheet paperwork.

END OF SECTION

RED NOTE: Be sure to obtain the latest version of this Guide Specification.

This Guide Specification is not a completed document ready for use. It must be edited, deleting, adding, or modifying text, as required to suit project requirements.

The professional stamping and the contracting parties of the Contract Documents are responsible for the accuracy of issued project specifications, including any use of this SPRAY-LOCK Guide Specification.

SPRAY-LOCK AND INTERLOCK INDUSTRIES SHALL NOT BE LIABLE FOR DAMAGES ARISING OUT OF THE USE OF THIS GUIDE SPECIFICATION.