

# Tuscan Cast Stone

## Installation Instructions

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### Recommended Tools for Installation of Tuscan Cast Stone

- Clean 5 gallon Pail
- Variable Speed Drill capable of producing 1000 RPM's
- MX1 Mixing Paddle
- Extension Cord
- Builders Square
- Tape Measure
- Level
- White Chalk Line
- Pencil
- Utility Knife
- Soft Bristle Mini Broom
- Painters Tape
- Small Paint Brushes/ Rollers
- Sponges & Rags
- Margin Trowel
- Notched Trowel
- Plastic Sheathing
- Shims
- Caulk Gun
- Tin Snips
- Screw Gun

### 1. SUBSTRATE INSPECTION

- A. The following list constitutes a comprehensive list of Tuscan Stoneworx tested and approved substrates or mediums for which Tuscan Cast Stone may be applied.
  1. Properly prepared EIFS Finish
  2. Properly prepared EIFS Air / Moisture Barrier
  3. Properly prepared EPS Foam
  4. Properly prepared EIFS Base Coat
  5. Properly prepared Natural Stucco
  6. Concrete
  7. Properly prepared Masonry Brick & Stone
  8. Properly prepared Cement Board
  9. Properly prepared Sealed Gypsum Board (drywall / fiberglass mat gypsum sheathing)
  10. Properly prepared Wood Sheathing, two layers of water resistive barrier, galvanized metal lath
- B. If substrate is other than one listed on Tuscan Cast Stone manufacturer's List of Approved Substrates, consult with the Tuscan Cast Stone manufacturer for installation procedures and adhesives.
- C. Check dimensions of substrate surfaces (length, width, height, radiuses, angles, etc.) and openings to insure that supporting wall surface, as built, will accept the Tuscan Cast Stone pieces as manufactured.

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- D. Inspect Tuscan Cast Stone pieces as delivered to insure that all the profiles, length, colors and finishes that are needed to install all the Tuscan Cast Stone are on hand. Hairline cracks are superficial and do not affect the structural integrity of the part.
  - E. Inspect surfaces for:
    - 1. Contamination -- algae, chalkiness, dirt, dust, efflorescence, form oil, fungus, grease, laitance, mildew or other foreign substances.
    - 2. Surface absorption and chalkiness.
    - 3. Cracks -- measure crack width and record location of cracks.
    - 4. Damage and deterioration.
    - 5. Moisture content and moisture damage -- use a moisture meter to determine if the surface is dry enough to receive the Tuscan Cast Stone and record any areas of moisture damage.
    - 6. Compliance with specification tolerances -- record areas that are out of tolerance (greater than ¼ inch in 8-0 feet [6mm in 2438 mm] deviation in plane).
  - F. Inspect sheathing application for compliance with applicable requirement:
    - 1. Exterior gypsum sheathing--GA-253\*
    - 2. Exterior Grade and Exposure I wood based sheathing--APA Engineered Wood Association E 30\*
    - 3. Glass mat faced gypsum sheathing--Georgia Pacific Publication 101514
    - 4. Proprietary cementitious sheathing - Consult manufacturers published recommendations
  - G. Report deviations from the requirements of project specifications or other conditions that might adversely affect the Tuscan Cast Stone installation to the General Contractor. **Do not start work until deviations are corrected.**

## 2. SUBSTRATE PREPARATION

- A. Remove surface contaminants on concrete and concrete masonry surfaces, such as form release oils, dust, paint, waterproofing, etc.
- B. Replace weather-damaged sheathing and/or framing.
- C. Repair damaged or cracked surfaces.
- D. Level surfaces to comply with required tolerances in this specification.

## 3. INSTALLATION

*(Note: the coordination of work with other trades is important for the performance of the wall assembly, in particular the installation of flashing above window and door heads, beneath window and door sills, at roof/wall intersections, decks, intersections of lower walls with higher walls, projecting features, and at the base of the wall to ensure that where water is likely to penetrate the wall assembly, it will be drained to the exterior at the source of the leak).*

*Weather conditions affect application and drying time. Hot or dry conditions limit working time and accelerate drying. Adjustments in the scheduling of work may be required to achieve desired results; cool or damp conditions extend working time and retard drying and may require added measures of protection against wind, dust, dirt, rain and freezing. Adjust work schedule and provide protection.*

## 4. INSTALLING TUSCAN CAST STONE PIECES

### A. General

- 1. Install one Tuscan Cast Stone piece at a time, next to the most recently installed piece.
- 2. If multiple courses of Tuscan Cast Stone are to be installed, work from the bottom up.
- 3. Follow architect's drawings and Tuscan Cast Stone manufacturer's drawings for location of pieces and joints. If report required, follow engineering report for adhesive coverage.
- 4. Do not add any other materials to the adhesive mixture other than those listed below. Prohibited additional materials include rapid binders, anti-freeze, resins, pigments, sand, lime, aggregates, minerals, extenders, more than 1 cup total of water, etc.
- 5. Compare the dimensions of each Tuscan Cast Stone piece to be installed in a specific location to see if it will fit, prior to applying the adhesive and attaching the piece to the substrate.
- 6. If the piece is too long, or if a precision fit is required trim the Tuscan Cast Stone piece using a masonry or diamond saw, or by diamond grinding.

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**B. Preparation of Attachment Adhesive**

1. Use an acrylic polymer base mixed with Portland Cement such as Dryvit Systems Inc. Primus adhesive or equivalent. Make only enough attachment adhesive at one time that can be used for the size of the wall area being built, and before the adhesive starts to set.
2. Follow approved adhesive manufacturer's preparation instructions on the packaging and the manufacturer's written paper instructions.

**C. Application of Adhesive**

1. Using a ½" notched trowel, apply prepared adhesive only to area on the back side (that will be adhered to the substrate) of the Tuscan Stone piece.
2. On exterior jobs apply the notched adhesive vertically to allow moisture to drain.
3. Dabs of adhesive can be applied along with notches for rougher substrates.
4. Do not apply adhesive all the way to the edge of the back side.
5. Do not apply adhesive to the end (grouting) areas of the Tuscan Cast Stone piece.

**D. Attaching Tuscan Cast Stone to Substrate**

1. Take prepared Tuscan Cast Stone piece (with adhesive applied) to the substrate.
2. Press the Tuscan Cast Stone piece against the substrate, press firmly enough to feel full contact of adhesive with substrate.
3. Align Tuscan Cast Stone pieces in the same plane as the visible outside surfaces of adjacent pieces.
4. Use positive means, such as spacers, to maintain consistent grouting joint width spacing.

**E. Temporary Support for Tuscan Cast Stone pieces**

1. Using positive means such as screws, nails, wires, straps, tapes, ties or props, support the Tuscan Cast Stone piece so as to maintain adhesion and correct position while the adhesive is curing. Do not run fasteners through the Tuscan Cast Stone pieces.
2. In some cases the foam core can be notched out on the backside of the Tuscan Cast part and placed over an anchored support such as a 2x4 or 4x4 as a means to maintain adhesion and correct position while the adhesive is curing. Larger parts may need wire or brick ties attached to top of the part to keep it from pulling away from the wall.

**F. Curing of Attachment Adhesive**

1. Maintain temperature above 40°F for at least 24 hours as the adhesive sets.
2. Protect the Tuscan Cast Stone pieces from physical damage and precipitation during curing period.

**G. Grouting Between Tuscan Cast Stone pieces**

1. Place strippable painters masking tape continuously on either side of joint at the edge of the Tuscan Cast Stone piece.
2. Using specified Tuscan Grout or equivalent and caulking gun, apply the Tuscan Grout material into the joint. Use of backer rod is required to avoid shrinking and unnecessary high-volume use of Tuscan Grout.
3. Using standard caulking tools or thumb tip, force the Tuscan Grout into the joint and against the edge of the Tuscan Cast Stone pieces, and make the grouting slightly convex and flush with the outside face of the Tuscan Cast Stone piece (this process is called "tooling" the joint).
4. Remove masking tape immediately after the Tuscan Grout has been tooled.

**H. Applying Sealer (for all uses of Tuscan Cast Stone)**

1. **General**
  - a. **Avoid application in direct sunlight.**
    1. Apply Tuscan Sealer after parts have had time to cure. Minimum 7 days.
    2. Apply (2) two coats of Tuscan Sealer in a continuous application.
    3. Apply by brush, roller, sprayer, or spongs.

**I. Protection**

1. Protect installed materials from water impinging on the visible surface, grout, sealants joints, and from behind.

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2. Protect installed materials from dust, dirt, precipitation, freezing, damaged, spilled materials, and continuous high humidity until they are fully dry.

**J. Cleanup and Job Close-Out**

1. Remove temporary supports, if employed, once adhesive and Tuscan Grout has set.
2. Remove left over materials from work area and dispose of properly.
3. Refurbish any adjacent areas adversely affected by this work.
4. Furnish owner with extra Tuscan Cast Stone pieces for future maintenance, if any, as specified herein.

**K. Cleaning & Maintenance.**

1. Tuscan Cast Stone has been developed to be a relatively maintenance-free product; however, the following recommendations and guidelines should be followed.
  - a. **Avoid Impacts**
    1. Care should be taken to protect Tuscan Cast Stone from impacts as it can be chipped, especially at corners and edges. If chips do occur, Tuscan Cast Stone is colored throughout the stone matrix. As such, Tuscan Cast Stone closely replicates the natural beauty of cut stone when chipped.
  - b. **Avoid the use of Salt and other Deicers**
    1. In winter, use of any deicing compound, even if it is not chemically reactive with Tuscan Cast Stone, can cause spalling and pop-outs by subjecting the Tuscan Cast Stone™ to the deleterious effects of naturally occurring freeze-thaw cycles. Even deicers that state that the material will not harm cementitious products, or cast stone, may still cause damage by creating an elevated exposure to freeze-thaw cycles.
    2. New cast stone, less than one-year old, is especially susceptible to salt and deicer type of damage and may be affected with just one application. If salt or other ice melting chemicals must be used, for example on a public courtyard, the user should consult with Tuscan Stoneworx for specialty sealers designed to combat the damage of salt and deicers. Even with Tuscan Sealer applied, deicer use should be kept to a minimum and any deicer residue left on the cast stone or concrete should be immediately removed or cleaned off (see cleaning instructions below) the cast stone once the ice has melted.
    3. When shoveling, sweeping, plowing, or snow-blowing deicer contaminated snow, efforts should be made *not* to throw the contaminated snow so that it lands on or against any Tuscan Cast Stone (such as bases, wall caps or trim) as this could lead to spalling of those items.
    4. Since the effectiveness of most sealers will wear off over time, they may need to be reapplied periodically. **NOTE:** Refer to the sealer manufacturers recommendations for re-application frequency and application instructions.
  - c. **Protect Cast Stone from Extreme Heat**
    1. Exposure to extreme heat may cause damage to Tuscan Cast Stone. Using a torch to melt ice or welding against Tuscan Cast Stone may cause burn marks or cracking.
  - d. **Cleaning Tuscan Cast Stone Surfaces**
    1. When cleaning Tuscan Cast Stone, the following will provide some guidance for selecting the least abrasive or damaging method. The methods described below have proven to have merit in the removal of stains from Tuscan Cast Stone. For stain removal, it is best to minimize abrading of the Tuscan Cast Stone finish to promote the long-standing beauty, consistency, and integrity of the Tuscan Cast Stone.
      - a. **Primary recommended cleaning method (least abrasive)** - Should the Tuscan Cast Stone become dirty, it can be lightly scrubbed with a soft bristle fiber brush, using a mild detergent and water followed by a thorough rinse with clean running water. This cleaning process is the least abrasive method to cleaning Tuscan Cast Stone.  
**Alternative cleaning methods (progressively more abrasive)** - The method selected for cleaning Tuscan Cast Stone depends on the purpose of the cleaning and the extent of the cleaning work to be done. It may entail use of water with mild detergent and soft bristle brush as described above, or something much more potentially damaging such as a hammer and chisel, sanding, pressure steam washing, grit or sand blasting, chemical cleaning, or use of special purpose mechanical power cleaning tools, each of which will likely cause permanent damage to the Tuscan Cast Stone. **Note:** Before cleaning,

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*thoroughly wet down all surrounding masonry and concrete surfaces to prevent the dirty wash-down water from being absorbed into it. When cleaning has been completed, wash down entire work area to ensure no residual dirty or contaminated rinse water remains. No acids or prepared cleaners should be used without the approval of Tuscan Stoneworx. When more aggressive methods to clean Tuscan Cast Stone are necessary, a careful investigation is advisable, which may bring to light unexpected findings. Accurate diagnosis of the problem area to be cleaned is essential for effective and successful cleaning, while reducing the potential for permanent damage to the finish.*

**e. Efflorescence Removal**

1. Efflorescence is a crystalline deposit, usually white, that may develop on the surface of an masonry product. Efflorescence is a soluble salts that dissolved in water moving through concrete and then precipitated onto the surface. Efflorescence can be removed from Tuscan Cast Stone parts by washing with diluted acid solutions. Vinegar diluted with water 2:1, commercially available acidic cleaners, or muriatic acid diluted with water 9:1 may be used. The following procedure is recommended.
  - a. Pre-wet the surface with water.
  - b. Apply the selected cleaner to the efflorescence and scrub with the soft bristle brush. The surface will "fizz" indicating that the salts are being dissolved by the acid solution.
  - c. Rinse thoroughly with water.
  - d. Allow the treated area to dry thoroughly prior to application of Tuscan Sealer.

***Caution: Before deciding on a particular cleaning method, clean a relatively small, inconspicuous area to assess the effectiveness and efficiency of the chosen method and the appearance and condition of the surface after its treatment.***

*Note: As always, Tuscan Stoneworx maintains the best method for maintaining the long-standing beauty, consistency, and integrity of Tuscan Cast Stone products from dirt, grit, grime, and efflorescence is the proper application of Tuscan Sealer. Care should be taken to follow the manufacturer recommendations for application, care and maintenance.*

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**DISCLAIMER**

The architecture, engineering and design of any project using Tuscan Cast Stone parts are the responsibility of the project's design professional. All systems must comply with state and local building codes and standards. Tuscan Stoneworx disclaims any liability for the architecture, design, engineering or workmanship of any project using Tuscan Cast Stone parts. Information contained in this specification conforms to standard detail and product recommendations for the installation of the Tuscan Stoneworx products as of the date of publication of this document and is presented in good faith. Tuscan Stoneworx LLC assumes no liability, expressed or implied, as to the architecture, engineering or workmanship of any project. To insure that you are using the latest, most complete information, contact Tuscan Stoneworx at:

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