

# Piazza Stone

## Quality Manual for Manufacturers

Version 4.0  
10/12/2023

### PRODUCTS EVALUATED:

**Piazza Stone®**

These products are the subject of Technical Evaluation Report Number 1909-03 issued by DrJ Engineering, LLC, in accordance with the requirements of DRJ ENGINEERING Quality Control Criteria, Piazza Stone, LLC hereby incorporates the following statements:

- The DRJ ENGINEERING name, mark or evaluation report number will only be used on product(s) that are in compliance with the published evaluation report and the quality control documentation approved by DRJ ENGINEERING.
- When apprised by DRJ ENGINEERING or a building official of field complaints concerning product performance Piazza Stone, LLC will promptly investigate and respond to DRJ ENGINEERING or the building official.
- Piazza Stone, LLC agrees to permit DRJ ENGINEERING to examine at distribution points and the manufacturing plant(s) any product labeled as being in conformance with the evaluation report. Such examination shall be by individuals employed by or retained by DRJ ENGINEERING to audit performance under an evaluation report.
- Piazza Stone, LLC will notify DRJ ENGINEERING in writing if the product is changed from what was originally recognized.
- The manufacturer will arrange regular and ongoing inspections by a 3<sup>rd</sup> party inspection agency. The manufacturer will notify DRJ ENGINEERING in writing prior to cancellation of the agreement with the inspection agency.
- Copies of inspection reports for inspections conducted by the inspection agency that indicate any major quality deficiencies, shall be forwarded to DRJ ENGINEERING within 10 days of the noted major deficiency.
- Piazza Stone, LLC will notify DRJ ENGINEERING in writing if the unannounced follow-up inspections have not been conducted as prescribed in the manual approved by DRJ ENGINEERING.
- Piazza Stone, LLC shall notify DrJ of any situation where a certified product could lead to a potential hazard

The contents of this Quality Manual are, to the best of my knowledge, correct and accurate:

#### Owner: Piazza Stone, LLC

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

#### Manufacturer:

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

#### Certifying Body: DrJ Engineering, LLC

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

*This report is for the exclusive use of Piazza Stone, LLC and its contract manufacturers and is provided pursuant to the agreement between DrJ Engineering and Piazza Stone, LLC.*

## Contents

<b>Quality Manual for Manufacturers .....</b>	<b>1</b>
<b>1. General Information.....</b>	<b>3</b>
1.1 Quality Manual Revision History.....	3
1.2 Product Description .....	3
1.3 Contact Information .....	3
1.4 Quality Control Personnel.....	3
1.5 Terminology.....	3
<b>2. INCOMING MATERIALS .....</b>	<b>4</b>
2.1 Approved Materials and Suppliers .....	4
2.2 Storage.....	4
<b>3. Manufacturing Process.....</b>	<b>4</b>
3.1 Lightweight Classification.....	4
3.2 Production Sequence and Overview of Quality Control .....	4
3.2.1 Construct Molds.....	5
3.2.2 Casting .....	6
3.2.3 Curing and Storage .....	7
3.2.4 Testing .....	7
3.2.5 Shipping .....	7
<b>4. Non-Conforming Product .....</b>	<b>7</b>
<b>5. Measurements and Calibration .....</b>	<b>7</b>
<b>6. Certified Installers .....</b>	<b>8</b>
<b>7. Supplemental Materials for Installation .....</b>	<b>8</b>
<b>8. Complaints .....</b>	<b>8</b>
<b>9. Labeling, Traceability, and Records .....</b>	<b>8</b>
9.1 Labeling.....	8
9.2 Traceability .....	8
9.3 Manufacturer Records.....	8
<b>10. Third-Party Inspections .....</b>	<b>9</b>
<b>Appendix A .....</b>	<b>10</b>

## 1. General Information

---

### 1.1 Quality Manual Revision History

This Quality Manual shall be reviewed on an annual basis with collaboration between Piazza Stone, LLC and the manufacturer. Changes to the Quality Manual shall be implemented only by Piazza Stone, LLC pending approval from the certifying body. The manufacturer shall not change the Quality Manual.

Version	Date	Description of Changes
1.0	10/6/2022	Document Origination
2.0	06/14/23	Per manufacturing agreement negotiations
3.0	07/13/23	Foam EPS / Testing Cubes

### 1.2 Product Description

Piazza Stone® is a non-structural architectural stone decorative façade product consisting of an expanded polystyrene (EPS) foam core encased in a limestone composite shell. The EPS foam is Type I in accordance with *ASTM C578*. The limestone composite shell is cast from a single-component, polymer-modified cementitious mix that includes the following materials:

- Portland cement, in accordance with *ASTM C150*, Type I or III
- Coarse aggregates, in accordance with *ASTM C33*, including granite, quartz, or limestone
- Fine aggregates, in accordance with *ASTM C33*, including manufactured or natural sand
- Inorganic iron oxide pigments, in accordance with *ASTM C979*, except carbon black pigments

### 1.3 Contact Information

	Master TER Report Holder
Company Name:	Piazza Stone, LLC
Address:	3817 Martinez Blvd Ste A, Augusta, GA 30907-1906
Tel:	706-651-1210
Email:	brundypursley@piazzastone.com
Contact Person:	Brundy Pursley

### 1.4 Quality Control Personnel

The manufacturer shall appoint one (1) person, the Quality Manager, who shall be responsible for all aspects of quality control procedures as described in this Quality Manual.

### 1.5 Terminology

*“shall” is used to express a requirement, i.e. a provision that the manufacturer is obliged to satisfy*

*“should” is used to express a recommendation, but not a requirement*

*“may” is used to express an option or something permissible*

*“can” is used to express a possibility or a capability*

## 2. Incoming Materials

---

### 2.1 Approved Materials and Suppliers

All materials listed below shall be provided only by approved suppliers. Additional suppliers can be added to this table if approval by both Piazza Stone and DrJ Engineering.

Material	Supplier(s) name and address	Specification / Grade	Accompanying Documentation
Piazza Cast Mix	Piazza Stone	6 month shelf life	Bags are individually labeled with batch number and date.
Hard Mold Inserts: EPS Bead	Drew Foam/Alleguard Recommended, Others are Acceptable	Type 1 B-Bead Minimum Density 0.90 pcf	Certificate of Approval
Foam Mold and Foam Mold Inserts: EPS Bead	Drew Foam/Alleguard Recommended, Others are Acceptable	Type 1 C-Bead "Virgin" Minimum Density 0.90 pcf	Certificate of Approval

### 2.2 Storage

**2.2.1** Piazza Cast Mix should be stored in a dry location between 60 – 80° F. Bags should be kept on a pallet with cardboard applied to the top of the pallet with plastic liner over the cardboard.

## 3. Manufacturing Process

---

### 3.1 Lightweight Classification

The manufacturer should abide by the size/weight parameters to remain in the Lightweight Classification. Parameters are listed below:

Length 36" Maximum

Weight 150 lb. Maximum

\*When Length and/or Weight exceeds the above parameters, consult with [Piazza Stone](#).

When Length and/or Weight exceeds the above parameters, take precautions on the items listed below:

A. *Manufacturing of Units:*

1. Pouring – Hydraulic lift makes it difficult to secure the insert
2. Mixing – Four (4) bags or more to pour one (1) single unit
3. Demolding – Weight and size make it difficult to remove unit from mold

B. *Installation of Units:*

1. <= 150 lbs. requires two (2) men to set unit and one (1) man to attach clips (3 man crew)
2. > 150 lbs. requires three (3) men to set unit and one (1) man to attach clips (4 man crew)

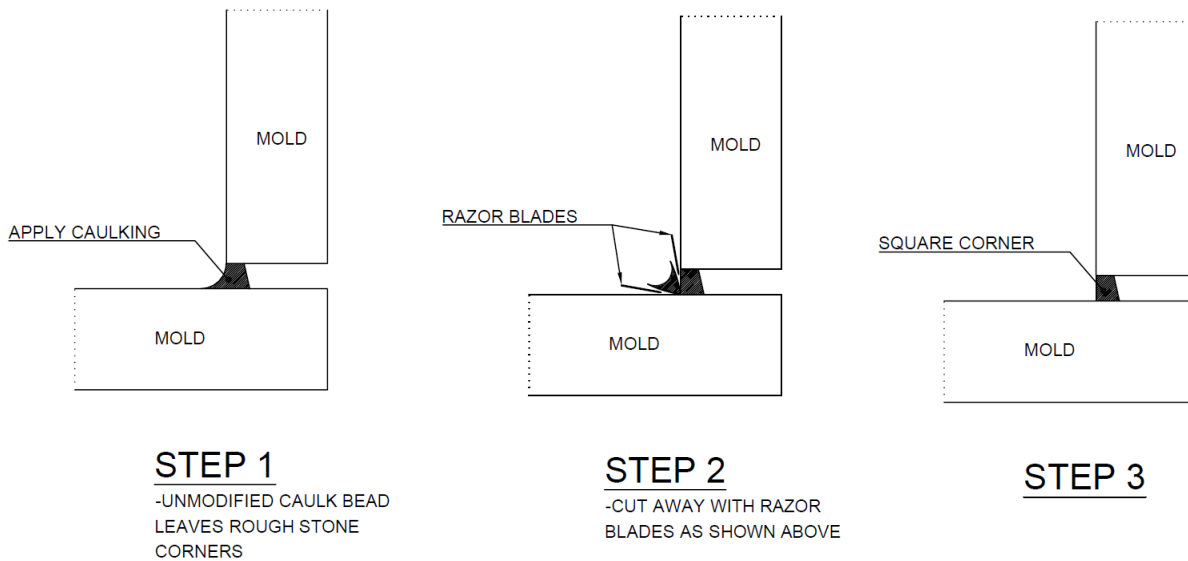
### 3.2 Production Sequence and Overview of Quality Control

Sequence	Description	Section
1	Construct Molds	3.2.1
2	Casting	3.2.2
3	Curing and Storage	3.2.3
4	Testing	3.2.4
5	Shipping	3.2.5



**3.2.1 Construct Molds**  
**Procedure**

Molds can be constructed from plywood or a suitable alternative. The interior mold surfaces shall be free of debris, oil, or other contaminants. Cross-section dimensions shall not deviate by more than +/- 1/8 inch from approved dimensions. Length of unit dimensions shall not deviate by more than length / 360 or +/- 1/8 inch, whichever is greater, not to exceed +/- 1/4 inch. The manufacturer shall have procedures to produce the desired finished edges. Forms edges often need to produce a square edge on the finished product. The following procedure may be used to produce a square edge.



Expanded Polystyrene (EPS) foam used for the Piazza Stone® hard mold insert shall be Type I B-Bead with a minimum density of 0.90 pcf. Expanded Polystyrene (EPS) foam used for the Piazza Stone® foam mold and insert shall be Type I C-Bead “Virgin” with a minimum density of 0.90 pcf. The EPS insert shall be dimensioned such that the finished cast face layer has a minimum thickness of 0.625 (5/8) inches and the finished cast end layers have a minimum thickness of 1.0 inches or minimum thickness of 1.50 inches. Cast layers must have uniform thickness. Applying a radius to EPS inserts can help prevent cracking of finished product.

### 3.2.2 Casting Procedure

Masonry units shall be comprised only of the following components: Piazza Cast Mix, potable water, and the specified pigment, if applicable. Piazza Cast Mix shall be labeled with a lot number indicating the age of the product is no greater than six (6) months. Expired bags of Piazza Cast Mix may be used with written approval by [Piazza Stone, LLC](#). Water temperature shall be 50° - 70°F. Masonry units should be cast in an indoor mixing room with controlled temperature. The water-cement ratio depends on the environmental conditions of the mixing room. If the mixing room is not climate-controlled, then the manufacturer should use the average mixing room temperature over a 24-hour period to determine the water-cement ratio.

Mixing Room Temperature	Water/Cement Ratio	Weight of Water for use with 50 lb cement	Other Information
Less than 39°F	Do not pour	Do not pour	
40°F-59°F	Consult with Piazza Stone	Consult with Piazza Stone	Curing process may be slower than expected
60°F- 80°F	.11- .14	5.5-7.0lbs	Optimal casting conditions
81°F-90°F	Consult with Piazza Stone	Consult with Piazza Stone	4-6 mil poly may be used to retard the curing process
Greater than 91°F	Do not pour	Do not pour	

The following steps *shall* be performed unless otherwise indicated (i.e. through use of terms *should*, *may*, or *can*):

#### Mixing

- 1) Weigh both Piazza Cast Mix and water prior to mixing. One bag of Piazza Cast Mix may not necessarily weigh 50 lbs.
- 2) Pour approximately half of the required water.
- 3) Add approximately half of the Piazza Cast Mix while mixing with a drill and mixing paddle.
- 4) If applicable, add the required amount of pigment and mix thoroughly until evenly dispersed.
- 5) Add remaining water as needed and remaining Piazza Cast Mix while mixing. **The maximum amount of water specified for the given temperature may not be needed.**
- 6) Scrape the sides and bottom to release material that is stuck to the mixing container and continue mixing.
- 7) Let the mixture false-set for 15 - 45 seconds.
- 8) Remix the container to break up the false-set and immediately pour into the form.
- 9) If the mixture remains idle for 30 seconds or more during the pouring process the aggregate may begin to settle. Remix the material before pouring.

#### Pouring

- 1) Masonry units that comprise a system should be cast at the same time.
- 2) Slowly pour material into the void between the form and the EPS insert or pour through a 1" - 1.5" hole in the backside middle of the insert. Work from one side to the other until the void is filled. A funnel system can be helpful.
- 3) To get the material to flow evenly into the mold and to ensure the proper distribution of cast materials, tap the sides of the mold. This can be done using a rubber mallet or by hand or by vibration. Note that the appropriate time of vibration depends on the size and configuration of the element being cast and that too much vibration can cause excessive settling of aggregate.
- 4) Place mold on a flat and level surface in an area where temperature is consistent with temperature poured 60° - 80°F
- 5) Approximately 30 - 45 minutes after pouring, remove bracing (if required) and tool off excess material on the mold and insert. Cover with poly sheet as needed.

### QC Records

Each batch shall be associated with a QC record indicating the project name, date, Start time of pouring, Start time of demolding, number of bags and lot number(s) of Piazza Cast Mix, Water Temperature, Amount of Piazza Flow (if applicable), measured weight of water per bag, and mixing room temperature. **Suggestion:** Keep a daily register of masonry units poured each day by way of shop tickets on each masonry unit.

### 3.2.3 Curing and Storage

Demolding shall not occur for a minimum of sixteen (16) hours. Additional time may be needed for environmental conditions that retard the curing process. Masonry units should be demolded in the sequence they were cast to promote uniformity of color and texture.

Demolded masonry units shall be stored in the same controlled environment as poured, on a flat and level surface for a minimum of three (3) days before packing. After three (3) days, masonry units can be loaded onto pallets. Demolded masonry units shall not be placed on a cement floor or other moisture-depleting surfaces.

Surface finishing of the product should occur within one (1) hour of demolding to ensure consistent quality and texture.

### 3.2.4 Testing

#### 2" Cubes for Future Testing

For every project poured, form three (3) 2"x2"x2" cubes. Allow the cubes to cure under the same environmental conditions as the project. Label the cubes with the date of fabrication, project name and store the cubes in an enclosed space. The cubes may later be tested for compression strength and/or absorption in the event of a complaint. The cubes shall be kept for a minimum of two (2) years from completion of project. Record batch numbers used for each project poured and store with cubes.

### ASTM C1364: Permissible Variation in Color

It is the manufacturer's responsibility to meet the color requirements for the job. Piazza Stone recommends referring to ASTM C1364 - 19: Standard Specification for Architectural Cast Stone, Section 9.

### 3.2.5 Shipping

Masonry units should be placed atop a pallet with 1½" – 2" of foam padding. Masonry units should be stacked in a manner to prevent cracking. Masonry units must have a minimum curing time of seven (7) days before being shipped. Masonry units shall have tab numbers to relate to shop drawings.

## 4. Non-Conforming Product

---

Product that does not conform to the quality control standards shall be clearly segregated and discarded.

## 5. Measurements and Calibration

---

The manufacturer shall use, at minimum, the following measuring instruments that meet the required precision and calibration frequency:

Instrument	Purpose	Precision	Calibration Frequency
Scale	Water / Cement Proportions	+/- 0.1 lbs	½ year
Tape Measures	Mold geometry	+/- 1/32"	1 year
Thermometers	Environmental Conditions, Water Temperature	As needed	As needed

Note: New instruments supplied through their manufacturer may be considered calibrated (e.g. Expired tape measures may be replaced with new tape measures in lieu of calibration).

## **6. Certified Installers**

---

Manufacturer trains and certifies vendors on proper installation of Piazza Stone products. The manufacturer shall supply finished product as outlined in this Quality Manual to certified installers. When supplying product to uncertified installers, the manufacturer shall provide adequate training for certificate before installation begins.

## **7. Supplemental Materials for Installation**

---

The manufacturer may provide supplemental materials required for installation, such as clips, track, concrete screws, and adhesive. These materials must be provided to the manufacturer by Piazza Stone.

## **8. Complaints**

---

Complaints relevant to the quality of the finished product shall be shared between the manufacturer and Piazza Stone, LLC. The root cause of the problem shall be investigated in collaboration between the manufacturer and Piazza Stone. Corrective action measures, if necessary, shall be determined in collaboration between the manufacturer and Piazza Stone. The complaint, investigation of root cause, and corrective action measures taken shall be documented.

## **9. Labeling, Traceability, and Records**

---

### **9.1 Labeling**

Each masonry unit for a job shall be traceable to a setting drawing. The masonry units shall be labeled to aid in the installation process.

### **9.2 Traceability**

Masonry units for a job shall be traceable to the Quality Control criteria of their fabrication, including the following records:

- job name
- date and time of pouring
- temperature of mixing environment
- lot number of Piazza Stone Mix
- water to cement ratio
- date and time of demolding

### **9.3 Manufacturer Records**

The Quality Manager checks and retains all Quality Control records. Records shall be kept a minimum of two (2) years from completion of project. This requirement includes third-party inspection reports. The manufacturer shall provide Piazza Stone, LLC with Quality Control records and third-party inspection reports upon request.



## **10. Third-Party Inspections**

---

The manufacturer shall undergo periodic third-party virtual inspections pertaining to compliance of the criteria defined in this Quality Manual. Third-party inspections shall occur at a frequency of four (4) inspections per year and by an inspection body with ISO 17020 accreditation or an alternative qualified expert with approval from Piazza Stone. The manufacturer shall provide the third-party inspector with access to the manufacturing facility and all quality control records detailed in this Quality Manual upon request. Third-party inspections may be announced or unannounced as determined by the inspector.

# Appendix A

## Example Forms



## POURING RESULTS

PROJECT NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

BATCH NUMBER WITH DATE: \_\_\_\_\_

### MIXING ROOM

CONDITIONED TEMPERATURE: \_\_\_\_\_

OR

UNCONDITIONED TEMPERATURE: \_\_\_\_\_

HUMIDITY: \_\_\_\_\_

WATER TEMPERATURE: \_\_\_\_\_

WATER WEIGHT: \_\_\_\_\_ LBS.

ANY PIAZZA FLOW USED: YES NO

AMOUNT: \_\_\_\_\_ GRAMS

START TIME POURING: \_\_\_\_\_

START TIME DEMOLDING: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



### Certified Installer Checklist

- 1) Approved Submittal Plans, Setting Plans, Shop Tickets, Architectural Plans, Specs
- 2) Receiving Material
- 3) Compare Building to Approved Shop Drawings
- 4) Layout
- 5) Proper Tools
- 6) Attachment Methods
  - Clips
  - Track System
  - Adhesive
  - Fireproofing
- 7) How to Mix & Apply Adhesive
- 8) Recommended Caulking – 890FTS-TXTR (in specification)
- 9) Patching / Cutting (ends) Procedures (if necessary)
- 10) Review Job Specifications
- 11) Suggested Water Sealant PWS-5
- 12) Estimating Conditions to Consider
- 13) Receive Defective Stone – Notify Manufacturer Immediately

“I understand and acknowledge that the Piazza Stone lightweight system of building materials and processes has been specifically designed to work as instructed and trained. Any use or installation of Piazza Stone products or processes which is outside of the specific training which I have been provided by Piazza Stone, LLC may result adverse consequences and/or failure of one or more of the Piazza Stone products or processes for which Piazza Stone, LLC can be held liable and I agree to indemnify and hold harmless Piazza Stone, LLC from any and all liability and claims from any person(s) arising out of the use or installation of Piazza Stone products or processes which is outside the specific manner in which I have been trained.”

You will receive a copy of this document with your installation certificate.

Certificate Holder Email: \_\_\_\_\_

Company Name: \_\_\_\_\_

Name / Position: \_\_\_\_\_

Certificate Holder Signature: \_\_\_\_\_

Instructor: \_\_\_\_\_

Instructor Signature: \_\_\_\_\_