

Section 04 72 00 — Architectural Cast Stone, Precast Concrete & GFRC

Columns & Pilasters

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PART 1 — GENERAL

1.1 SUMMARY

- A. Cast stone and glass fiber reinforced concrete (GFRC) architectural column and pilaster units as indicated on Drawings.
- B. Related Sections:
 - 1. Section 04 20 00 — Unit Masonry
 - 2. Section 03 49 00 — Glass Fiber Reinforced Concrete (GFRC units)
 - 3. Section 07 92 00 — Joint Sealants

1.2 REFERENCES

- A. ASTM C1364 — Standard Specification for Architectural Cast Stone
- B. ASTM C947 — Standard Test Method for Flexural Properties of Thin-Section GFRC
- C. ASTM C1194 — Standard Test Method for Compressive Strength of Architectural Cast Stone
- D. ASTM C150 — Portland Cement
- E. ASTM C33 — Concrete Aggregates

1.3 SUBMITTALS

- A. Product data sheets, mix design, aggregate gradation, and finish samples.
- B. Shop drawings: column layout, joint patterns, connection details, section cuts.
- C. Test reports per ASTM C1364: compressive strength, absorption, and color per batch.

1.4 QUALITY ASSURANCE

- A. Manufacturer: Minimum 10 years' experience in architectural cast stone production.
- B. Compressive Strength: Minimum 6,500 psi at 28 days per ASTM C1194.
- C. Absorption: Maximum 6% per ASTM C1364.
- D. Freeze-Thaw: 300 cycles per ASTM C666, no visible deterioration.

1.5 DELIVERY, STORAGE & HANDLING

- A. Ship column drums in padded crates. Label each with shop mark and piece number.
- B. Store off ground on padded supports. Protect column faces from impact damage.
- C. Handle with spreader bars or padded slings at design lift points.

PART 2 — PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Mesa Precast, Mesa, AZ
 - Contact: Jess Mason, 480-600-6776
 - 1. Additional manufacturing locations: Texas, Pennsylvania
 - 2. Representative: contact via archstoneglobal.polsia.app
- B. Substitutions: Equal products by other certified manufacturers may be submitted 10 days prior to bid with test data and project references.

2.2 CAST STONE UNITS

- A. Compressive Strength: 6,500 psi minimum at 28 days per ASTM C1194.
- B. Water Absorption: 6% maximum per ASTM C1364.
- C. Dimensional Tolerance: $\pm 1/8"$ on face dimensions.
- D. Color and texture: integral; uniform within 10% reflectance variation batch-to-batch.
- E. Reinforcement: Non-stressed; galvanized steel or FRP bars where indicated.

2.3 GFRC UNITS (Where Scheduled)

- A. Glass fiber: minimum 5% by weight, alkali-resistant (AR) type.
- B. Face mix: minimum 3/4" thickness, matched to cast stone finish.
- C. Test per ASTM C947 for flexural strength and elastic modulus.

2.4 FINISH OPTIONS

- A. LS-01 Limestone: warm white integral color.
- B. SS-02 Sandstone: warm tan integral color.
- C. TV-03 Travertine: buff with subtle veining.
- D. CM-04 Cream Marble: cream with warm undertones.
- E. Custom: Match architect's physical sample per specifications.

2.5 COLUMN COMPONENTS

- A. Shaft drums: Typically 24"–36" in height. Stacked over structural core.
- B. Capital: Crown detail per order drawings. Plain, Doric, Ionic, and Corinthian available.
- C. Base: Column base per drawings. Smooth or profiled base per standard library.
- D. Pilaster profiles: Flat pilaster with capital and base per drawings.

PART 3 — EXECUTION

3.1 INSTALLATION

- A. Install column drum sections over structural core per shop drawings.
- B. Set in full-coverage mortar bed; align with setting hardware.
- C. Grout joints: point-up with matching color mortar per drawings.
- D. Protect installed work from soiling, staining, and impact during construction.
- E. Do not load column units until mortar has achieved adequate strength.

3.2 TOLERANCES

- A. Plumb of column shaft: $\pm 1/8"$ per 4 ft of height.
- B. Alignment of drum joints: $\pm 1/16"$ between adjacent drum sections.
- C. Level of capital bearing: $\pm 1/8"$.

3.3 CLEANING & PROTECTION

- A. Protection: Cover completed columns during construction operations.
- B. Cleaning: Plain water or pH-neutral detergent. No acidic cleaners.
- C. Sealant: Penetrating silicone-siloxane sealer on exterior columns per manufacturer's recommendation.

MANUFACTURER: Mesa Precast
Contact: Jess Mason, 480-600-6776

END OF SECTION 04 72 00

Material Selection Guide

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Property	Precast Concrete	Cast Stone	GFRP
Compressive Strength	3,500–4,500 psi	6,500 psi min	4,000 psi min
Water Absorption	<6% (ASTM C642)	<6% (ASTM C1364)	N/A (non-porous face)
Freeze-Thaw Cycles	300 (ASTM C666)	300 (ASTM C666)	300 (ASTM C666)
Weight (approx.)	~140 pcf	~135 pcf	~25–30 psf (panel)
Dimensional Tol.	$\pm 1/4"$	$\pm 1/8"$ / $\pm 1/4"$ in 10'	PCI MNL-128
Key ASTM Standards	C150, C33, C642, C1194	C1364, C1185, C947, C1194	C947, C1116, PCI MNL-128
CSI Reference	03 45 00	04 72 00	03 49 00
Anchors / Sealant	Stainless steel	Stainless steel	Galvanized / Stainless
Sealant Ref.	Section 07 92 00	Section 07 92 00	Section 07 92 00

Part 3 Execution Notes — Key Requirements

1. Mortar: Type N or S (ASTM C270). Full-coverage bearing on all units.
2. Joints: $3/8"$ nominal. Backer rod + sealant at all horizontal and perimeter joints (Section 07 92 00).
3. Anchors: Stainless steel or hot-dip galvanized steel. No uncoated ferrous metal in contact with stone.
4. Tolerances: $\pm 1/8"$ dimensional. $\pm 1/4"$ in 10 feet from level or plumb.
5. Cleaning: Plain water or mild pH-neutral detergent. No acid cleaners on limestone-colored finishes.
6. Cutting: Wet saw only. No hammer-and-chisel for structural cuts.
7. Submittals: Product data, shop drawings, samples, test reports required before fabrication starts.

Mesa Precast — Technical Sales Contact

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archstoneglobal.polsia.app · Mesa, AZ — also serving TX and PA