



NWA Cast Stone, LLC
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NWA Cast Stone – Product Submittal Package

1. General

This submittal outlines material data, manufacturing standards, physical properties, reinforcement requirements, tolerances, finishes, handling, and installation guidelines for cast stone and architectural precast units manufactured by NWA Cast Stone, LLC.

2. Applicable Standards

All materials and production methods shall comply with the following ASTM standards:

- ASTM C150 – Portland Cement (Type I or III)
- ASTM C33 – Aggregates (normal weight)
- ASTM C1364 – Architectural Cast Stone
- ASTM A615 – Deformed Reinforcing Bars, Grade 60
- ASTM C119 – Definitions for Stone and Stone Products
- ASTM C666 – Freeze–Thaw Durability (as applicable)

3. Materials & Mix Design

Cast stone shall be manufactured using a dry-pack mix consisting of:

- 1 part white Portland cement
- 3 parts tan and/or white fine aggregate (per approved color)
- Water added only as needed to achieve proper dry-tamp workability

Precast Unit Properties

- Minimum compressive strength at 28 days: 6,500 psi
- Density: 145 pcf
- Maximum water–cement ratio: 0.40

4. Physical Properties (ASTM C1364 Requirements)

Cast stone units shall meet or exceed the following:

- Compressive Strength: $\geq 6,500$ psi
- Absorption: $\leq 6\%$ by weight
- Freeze–Thaw Durability: 300 cycles minimum
- Air Content: As required for durability
- Density: 135–150 pcf typical

5. Reinforcement

Reinforcement shall comply with ASTM A615 Grade 60 and include:

- Deformed reinforcing bars
- Minimum concrete cover of 1" unless otherwise detailed
- Welded wire reinforcement where required
- Stainless steel or hot-dip galvanized anchors for exposed connections

6. Manufacturing & Assembly

All units shall be produced using the dry-tamp method in accordance with ASTM C1364.

Curing

- Units shall be cured in a controlled environment to prevent rapid moisture loss.

7. Dimensional Tolerances

Per ASTM C1364:

- Length, width, height: $\pm 1/8"$
- Warp: $\leq 1/8"$
- Joint surfaces: $\pm 1/16"$
- Arrises: Slight chamfer or eased edge unless otherwise specified

8. Finishes & Color

- Available finishes include smooth, light sandblast, acid-wash, or custom.
- Color shall be controlled through approved samples.
- Color shall be Solomon Colors ASTM C979 compliant.
- Natural variation within ASTM C1364 limits is acceptable.
- Efflorescence may occur naturally and is not considered a defect.

9. Shop Drawings & Coordination

Cast stone and architectural precast components shall be coordinated with:

- Cast stone shop drawings – Approved cast stone shop drawings shall take precedence over architectural, structural, and other contract documents in the event of any conflict or discrepancy.
- Architectural drawings
- Structural drawings
- Field conditions

10. Anchoring & Attachment

- Anchors shall be stainless steel or hot-dip galvanized.
- Attachment locations shall be shown on shop drawings.
- Lifting inserts shall be embedded as required for safe handling.

11. Handling, Storage & Protection

- Store units on non-staining dunnage.
- Protect edges and corners from impact.
- Keep units covered and dry.
- Do not exceed recommended stacking heights.
- Handle units using approved lifting points only.

12. Installation Requirements

- Install units plumb, level, and true to line.
- Typical joint width: $3/8"$ unless otherwise noted.
- Mortar: Type N or Type S depending on application.
- Sealant: Compatible with cast stone and adjacent materials.
- Do not install below 40°F without approved cold-weather procedures.

13. Sealer

A silane or siloxane sealer can be applied by the Contractor or General Contractor to all exposed surfaces. If requested.

14. Quality Assurance

- Manufacturer shall maintain a documented quality control program.
- Batch tickets shall be available upon request.
- Units shall be inspected at multiple stages of production.
- Non-conforming units shall be rejected or repaired per ASTM standards.

15. Warranty

NWA Cast Stone provides a one-year material and workmanship warranty from the date of manufacturing completion, excluding damage caused by improper installation, handling, or maintenance.