



TECHNICAL BULLETIN #54
SPECIFICATION OF CAST STONE PRODUCTION METHODS

Many articles have been written over the years concerning the process used for making Cast Stone and whether the method or apparatus should be specified by the purchaser or selected by the manufacturer. Most of these articles were written by producers promoting the method(s) used at a particular facility in an attempt to promote superiority over plants using another method.

Often specifiers select one method over another, which can lead to disappointing results when their expertise may not be intrinsic to specialty concrete product manufacturing and its processes. Terminology most often used to describe a process in concrete is wet-cast, dry-cast, semi-dry, vibrant dry-tamped, vibratory dry-tamped, machine made, wet-poured, earth moist, etc. These methods can be subdivided into three basic groups according to CSI Specification 04 7200:

- “Vibrant dry tamp (dry cast) products, n—Cast Stone manufactured from earth moist, zero slump concrete densely compacted by apparatus.”
- “Wet cast products, n—Cast Stone manufactured from measurable slump concrete consolidated by apparatus.”
- “Machine casting method n—Cast Stone manufactured from earth moist, zero-slump concrete compacted by machinery using vibration and pressure against a mold until it becomes densely consolidated.”

Cast Stone units covered by a project specification should not include the manufacturing method, as the ASTM C1364 – Standard Specification for Architectural Cast Stone states that, “Slump, manufacturing method, and apparatus shall be selected by the manufacturer and not specified by the purchaser.” The project specification should cover the performance criteria (i.e. compressive strength, absorption, freeze-thaw durability) and referenced standards wherever possible, as opposed to prescriptive methods of achieving physical properties.

The designer should specify shape, color, finish and other technical and design attributes listed in the [Standard Specification](#). For most applications, the manufacturer should submit shop drawings showing details and sizes of stones, arrangements of joints, anchor details, etc., for approval, unless the units are a standardized shape.

The manufacturer selects the design mix proportions, water-cement ratio (including slump), mold construction, apparatus for consolidating the mix into the molds and other criteria used in the manufacturing process. Factors used in determining appropriate production method(s) to be used are usually size, weight, shape, finish, type of reinforcing, anchoring methods and application in the structure.

Specifying a Cast Stone Institute Certified Plant® with the relevant CSI and ASTM Standards is your first step toward designing a successful project.