

Product Data for Edwards Cast Stone Company

1. Product Name:
Cast Stone

2. Manufacturer:
Edwards Cast Stone Company
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3. Product Description:
Composition and materials: Cast stone is a building material manufactured from carefully controlled portions of Portland cement and coarse and fine aggregates, molded into final shapes. Depending on color and texture desired, cast stone is made from a combination of white and/or gray Portland cement, natural river sand, silica sand, granite sand, manufactured limestone sand, marble, and/or quartz aggregates, each carefully graded by sieve analysis, with natural and synthetic color pigments added.

Basic use: Cast Stone is a masonry product generally used as trim, facing, and ornamentation. It can be made to simulate natural cut stones such as limestone, brownstone, and sandstone used in new construction, and is an ideal replacement material in existing building restoration.

Typical uses: Cast Stone is most often used for copings, wall caps, window sills, door and window surrounds, facing panels, columns, and other similar architectural features and ornamentations.

Used as structural elements: Edwards Cast Stone Company wet cast pieces can sometimes be used in place of load-bearing structural elements when the design of the piece permits placement of adequate

reinforcing materials within the shape. When this is not possible, separate steel angles of suitable size (provided by other trades) should be used as the primary load bearing member. Since cast stone is a cement-based product, it is best used when subjected to compressive loads only.

Comparison with natural stone materials: Compared to limestone, for example, cast stone has a higher compressive strength, a lower water absorption rate, and is uniform in color. It can be reinforced and cost is usually very competitive with natural stone materials.

Fabrication: Depending on project requirements, for structural and/or detailed pieces, Edwards Cast Stone Company will, at its option, produce the required pieces by using wet casting where structural performance is needed, or a combination of wet cast and vibrant dry tamping (VDT) methods where appearance as well as structural performance is required.

Colors: Edwards Cast Stone Company produces cast stone in a range of standard colors. Custom colors are available to match virtually any existing materials or conditions at an additional cost.

Wet cast stone: Ingredients selected to produce larger, or longer, less detailed pieces, and structurally reinforced pieces in standard or custom colors are blended with the proper amount of water in a mixer to a slump of between 3 and 4 inches. The mix is then placed in a mold of the proper size, shape and configuration, and hand vibrated to produce a smooth surface finish in the shape of the mold. The mix is cured in the mold using radiant heat for approximately 20 hours before removing. After removal, a mild muratic acid solution is applied to removed the surface

cement skin and attain the natural, weather-resisant stone appearance.

Vibrant dry-tamped (VDT) stone: Ingredients selected to produce smaller, more detailed, non-structurally reinforced pieces in standard or custom colors are blended with the proper amount of water in mixer to a slump of 0 inches. The mix is then placed in a mold of the proper size, shape and configuration and tamped to produce a smooth, "sugar cube" surface finish in the shape of the mold. This concrete cast method produces a relatively dry product, so the piece is removed from the mold immediately after tamping and water mist-cured for eight hours, then steam cured for an additional eight hours.

After curing, surfaces of each VDT-produced piece are sanded and a mild muratic acid solution is applied to remove surface cement skin to attain the natural, weather-resistant stone appearance.

Molds: Molds used for producing cast stone shapes are typically fabricated from softwoods and high-density overlay (HDO) plywood. Molds can be construction to any shape from simple rectangular sections to complex crown or cove shapes. Computer designed and cut letters and numerals in virtually any style and size can be placed into molds to produce incised signs and plaques. If letters and numerals cannot be successfully cast in as part of the molding process, they can be sandblasted in later after the piece is cast and cured.

Approvals: All that is required to proceed with fabrication of all cast stone shapes are shop drawings and

color selections approved by both the architect and the contractor.

Limitations, VDT-produced pieces: The only real limitation to the design of a vibrant dry-tamped-produced shape is that it must be a profile (usually with one flat side) which permits the piece to be removed from the mold before curing. More complex shapes which “lock” the sides of the mold (i.e., dovetail or reverse angle shapes), require more intricate molds and can be produced but are more costly. Standard dovetail inserts can be cast-in as part of the molding process.

VDT-produced pieces generally cannot be used as structural elements without additional reinforcing members such as steel lintels (provided by others).

Limitations, wet cast-produced or combination wet cast/VDT pieces: Since wet cast pieces remain in the mold until cured, shape limitations described for VDT-produced pieces does not necessarily apply. Generally, as with any casting process, the more complex the shape, the higher the cost. Dovetail slots and anchoring devices can be cast-in.

Combination wet cast/VDT-produced pieces can be used as structural elements if adequate reinforcing is placed in the wet cast portion of the piece.

Setting materials and accessories: Edwards Cast Stone Company may or may not furnish setting hardware and accessories with cast stone materials for installation by others, depending on project conditions. Mortar setting materials, and caulking and sealing materials, are furnished and installed by the installation contractor. As with any concrete material, avoid direct contact with untreated wood or metal doors, windows, or flashing materials which will corrode if they remain in direct contact with cast stone surfaces.

4. Installation:

Preparatory work: Substrates must consist of materials which are compatible with cast stone members and structurally designed to permit anchoring and/or support of cast stone members without failing. All anchors, dowels, and fastenings installed by others must be firmly attached to elements supporting cast stone members.

Setting: Cast stone must be accurately set to lines and dimensions shown on approved shop drawings by skilled mason with experience in placing cast stone materials. When setting with mortar, all cast stone members shall be thoroughly wetted with clean water just before they are placed. After each stone is set, rake all mortar joints.

Cleaning: All cast stone faces to remain exposed should be cleaned with a mild masonry cleaner vigorously applied with a stiff, non-metallic bristle brush. Mortar repointing should be done before cleaning starts; caulking joints should be installed after cleaning is completed and approved.

Precautions: All normal care should be taken to prevent water from entering open joints and staining or discoloration of adjacent finished surfaces from cleaning liquids. Cleaning personnel should be made thoroughly familiar with the use of selected masonry cleaning product.

5. Availability and Cost:

Availability: Cast stone can be delivered to any jobsite. Delivery times however, depend on timely shop drawing approval for Edwards’ normal production lead times.

Cost: Factors affecting the unit cost of cast stone include the quantity of the cast stone to be produced, the quantity and complexity of molds required, the degree or ornamentation required (which many determine which cast process is used), colors selected or custom color-matching requirements, and shipping

requirements such as distance and size of members to be transported.

Cast Stone is economical when standard colors are selected and shapes and profiles are simple and/or repetitive. In general, the fewer the molds required and the greater the quantity, the less the unit cost.

6. Warranty:

Edwards Cast Stone Company warrants this product to be free from defects within accepted industry standards. Edwards will patch and repair, or replace at their option, an defective material at no additional cost.

Edwards Cast Stone Company makes no other warranty of this product, whether expressed or implied including, without limitation, the implied warranties of MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE.

Edwards’ liability shall be limited in all events to supplying sufficient product to repair designated defective areas. Edwards assumes no other liability, including liability for incidental, consequential, or resultant damages whether resulting from breach of warranty or negligence.

7. Maintenance:

Cast stone normally requires no maintenance, however, periodic inspection of caulked joints in copings and sills is recommended.

8. Technical Services:

Contact Edwards Cast Stone Company for additional product information and assistance in detailing, specifying, and preliminary pricing of cast stone products.