



SECTION 06610

FORMANITE™ – SIMULATED MOLDED STONE (Exterior Use)

GENERAL

1.1 SECTION INCLUDES

- .1 Furnish all materials, labour, equipment and services necessary National Form FORMANITE™ Components as indicated on the drawings and contract documents. Supply and Installation is the responsibility of the General Contractor or Sub Contractor.
- .2 Works shall include supply, patching, repairing and cleaning.

1.2 RELATED SECTIONS

- .1 Sections 09100: Metal Support Systems
- .2 Sections 07900: Sealants and Caulking
- .3 Sections 06100: Rough Carpentry
- .4 Sections 09010: Adhesives

1.3 INTENT

- .1 This specification is intended to generally outline the requirements of the FORMANITE™ components, as they pertain to the overall project design. In all cases, the manufacturer's printed specifications shall govern the work of this section.

1.4 RESPONSIBILITY

- .1 The Millwork Contractor shall install the work under this section and he will be responsible for co-coordinating the installation with other trades.

1.5 SUBMITTALS

- .1 Submit a minimum of 3 – (7.6cm x 7.6cm) (3" x 3") National Form FORMANITE™ flat samples to the architect for review of colour and texture specified. These samples are for general appearance comparison only as color variations will occur within and between components.
- .2 Submit shop drawings for approval showing plans, sections, details, joint treatment, reinforcing, fastening devices and the relation of the FORMANITE™ Components to the surrounding construction.

1.6 MOCK-UP

- .1 Prior to production erect one proto-type component on-site or at the National Form plant, for review by the architect. Once approved the proto-type will establish the standards by which the work will be judged. Cost to be added to Quotation.

1.7 SUBSTITUTIONS

- .1 Manufacturers desiring to submit proposals other than National Form shall, at least 10 days prior to the bid date, submit to the architect all descriptive information of the system. These manufacturers must have a minimum of five years experience with the system and provide photographs and shop drawings of at least three projects similar in detail and scope with names, addresses and phone contacts of the respective architects and installation contractors. Independent test data showing compliance with the specified system and three samples of similar details must also be submitted.

2 PRODUCTS:

2.1 MANUFACTURER

- .1 National Form Inc.
530 Keele St. Unit 310
Toronto, Ontario
M6N 3C9 Canada
Tel: (416) 604-2100 / 800-969-9202
Fax: (416) 604-2344
www.nationalform.com

2.2 MATERIALS

- .1 National Form FORMANITE™ components shall be prefabricated with integrally pigmented, high density gypsum cements, polymers, aggregates, asbestos free, and reinforced with continuous filament random glassfiber matt.
- .2 National Form FORMANITE™ components shall be suitably reinforced with galvanized steel.
- .3 Fabrications will be as per approved shop drawings and will not include assembly. If multiple components are required to complete design criteria as per contract drawings, additional site work under related sections, installation or finishing may be required.

2.3 TOLERANCES (FABRICATION)

Dimensional – all directions	(3.2mm) (1/8")
Thickness – skin	(3.2mm) (1/8")
Thickness – total unit	(8mm) (5/16")
Warpage or Bowing	(5.28mm/m) (1/16"/foot)

Site conditions and normal manufacturing variations may require additional site work to maintain These tolerances.

2.4 PHYSICAL PROPERTIES

Shell Thickness	(9.6mm) (3/8")
Weight (depending on reinforcing)	(14.7-19.6 kg/sq. m.) (3 – 4 lbs. /sq. ft)
Density	(1500-1590 kg./cu. m.) (95 – 100 lbs/cu. ft)
Compressive Strength	(46.8 Mpa) (6,800 p.s.i.)
Tensile Strength	(7.31 Mpa) (1,060 p.s.i.)
Modulus of Elasticity	(10.3 Mpa) (1.5 x 10 ⁶ p.s.i.)
Flexural Yield	(13.6 - 14.95 Mpa) (1,970 – 2,170 p.s.i.)
Flexural Ultimate	(50.3 – 64.8 Mpa) (7,300 – 9,400 p.s.i.)
Impact Strength	(322 J/m) (6.02 ft lb./inch)
Fibre Content	5 – 6% by weight
Coefficient of Expansion	(.42µ m/C) (1.6x 10 ⁻⁵ /C)
Flame Spread (ASTM E84-80)	< 25
Smoke Index (ASTM E84-80)	< 45

2.5 INSPECTION

The Architect or his representative shall have access to National Form Inc. manufacturing facilities, either Prior to contract award or thereafter, to inspect or verify compliance with the above specifications.

3.0 EXECUTION:

3.1 PRE-INSTALLATION RESPONSIBILITY

- .1 **Field Measurements:** Prior to manufacturing, the installer will be responsible for obtaining all field dimensions for inclusion on the manufacturer's shop drawings.
- .2 **Co-ordinations:** The installer will be responsible for the co-ordination of the installation with related sections, within the tolerances specified in the respective articles.
- .3 **Discrepancies:** Prior to installation, the installer shall check job site dimensions and conditions. Any discrepancies between design and field dimensions shall be brought to the attention of the General Contractor and the Architect.
- .4 **Material Quantities:** The installer will be responsible to order the correct material quantities, allowing for waste.

3.1 DELIVERY, STORAGE, HANDLING AND PROTECTION

- .1 Transports and handle FORMANITE™ components in a manner that avoids excessive stresses or damage.
- .2 Components displaying obvious damage must be rejected at site at time of delivery.
- .3 Store the components in a controlled environment, weather protected, and on a level surface, with temporary supports as required. Do not stack or lean.

3.3 INSTALLATION On Site

Is the responsibility of the general contractor or sub contractor

- .1 Components shall be lifted/handled with suitable devices.
- .2 Components shall be installed plum and true. Shim where necessary.
- .3 Fasten components with screws through face or back as indicated on shop drawings.
- .4 Predrilled and countersink to (3.2mm) (1/8") minimum below finished surface of unit.
- .5 Adhere wall cladding (veneer) panels to substrate as indicated on shop drawings.
- .6 Where components are suspended, use as a minimum 12 gauge steel wire and suspension points Indicated on the shop drawings.
- .7 Allowable variations in material thickness at surface suspension points shall not exceed ($\pm 6.4\text{mm}$) ($\pm 1/4''$).
- .8 Framing, hangers, etc. as specified elsewhere.
- .9 Butt joints are to be caulked (as specified under Sealants and Caulking) or grouted. (Matching grout as furnished by National Form.

3.4 PATCHING AND CONTROL JOINTS

- .1 Introduce control joints as required (10 m.) (35') under related section of Specification.
- .2 Patch countersunk fasteners and any damage to match component texture, using materials furnished by National Form.

3.5 CLEANING

- .1 Clean FORMANITE™ surface with a water/soap solution and rinsing with a sponge. Excessive dirt can be removed with a multi-purpose spray cleaner such as 'Spray Nine'. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

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