



SECTION 09285

GLASSFIBRE REINFORCED GYPSUM (GRG)

GENERAL

1.1 SECTION INCLUDES

- .1 Furnish all materials, labor, equipment and services necessary for the supply and installation of National Form G.R.G. Components as indicated on the drawings and contract documents, all in compliance with local codes and/or ordinances.
- .2 Works shall include supply of G.R.G. components, installation and joint treatment.

1.2 RELATED SECTIONS

- .1 Sections 09100: Metal Support Systems
- .2 Sections 09250: Gypsum Board
- .3 Sections 09900: Painting

1.3 INTENT

- .1 This specification is intended to generally outline the National Form G.R.G. requirements, 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 Gypsum Board Contractor shall install and tape the work under this section and he will be responsible for co-coordinating the installation with drywall work and other trades.

1.5 SUBMITTALS

- .1 Submit a minimum of 3 – (7.6cm x 7.6cm) (3" x 3") National Form G.R.G. flat samples to the finishing contractor for paint selection.
- .2 Submit shop drawings for approval showing plans, sections, details, joint treatment, reinforcing, fastening devices and the relation of National Form G.R.G. components to the surrounding construction.

1.6 MOCK-UP

- .1 Prior to production erect one proto-type on-site or at the National Form Inc. plant, for review by the architect.

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

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 G.R.G. components shall be prefabricated with high-density gypsum, free of resin and asbestos, reinforced with continuous filament random glass fibre mat.
- .2 National Form components shall be reinforced with steel or wood.
- .3 No additives such as retards, accelerators or polymers are permitted.
- .4 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 section, installation or finishing may be required.
- .5 National Form G.R.G. components shall be ready to receive primer and paint as specified under Section 09900.

2.3 TOLERANCES (FABRICATION)

Dimensional – all directions	(3.2mm) (1/8")
Thickness – skin	(1.6mm) (1/16")
Thickness – total unit	(3.2mm-4.8mm) (1/8" –3/16")
Warping 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	(4.8mm) (3/16")
Weight (depending on reinforcing)	(7.5-9.9 kg/sq. m.) (1-1/2 – 2 lbs/sq.ft)
Density	(1635-1780kg/cu. m.) (103 – 112 lbs/cu.ft.)
Flexural Strength (ASTM C-947-89 MOD.)	(33.2 Mpa) (4,820 p.s.i.)
Compressive Strength (ASTM C-472-90 MOD.)	(95.1 Mpa) (13,800 p.s.i.)
Modulus of Elasticity – In flexure (ASTM C-947-89 MOD.)	(23.3 Mpa) (3.38 x 10 ⁶ p.s.i.)
Tensile Strength (ASTM D-638-94 b MOD.)	(12.4 Mpa) (1,810 p.s.i.)
Impact Strength (ASTM D-256-93a)	(368 J/m) (6,89 ft-lb/in)
Hardness (ASTM D-2583-93) Barcol	54
Fiber/Fibre Content	5 –6% by weight
Coefficient of Expansion (ASTM D-696-91)	(11.4µ mm/mm °C) (6.3 x 10 ⁽⁻⁶⁾ in/in °F)
Fuel Contribution (ASTM E84-80)	0
Flame Spread (ASTM E-136-94a)	0
Smoke Index (ASTM E84-80)	0
Fastener Withdrawal – with wood embedded	(149kg) (329 lbs)
- With steel embedded	(347kg) (764 lbs)

2.5 INSPECTION

The Architect or his representative shall have access to the 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 manufacturers 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.

3.2 DELIVERY, STORAGE, HANDLING AND PROTECTION

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

INSTALLATION

- .1 Components shall be lifted with suitable devices.
- .2 Components shall be installed plum and true. Shim where necessary.
- .3 Fasten components with self-drilling, self-taping, bugle head screws through face or back as indicated on shop drawings.
- .4 Where components are suspended, use as a minimum 12 gauge galvanized steel wire and the suspension points indicated on the shop drawings.
- .5 Framing, hangers, etc. as specified for Gypsum Board.
- .6 Butt joints are to be adhered together using "Liquid Nail" or equivalent.

3.4 JOINT FINISHING, PATCHING AND CONTROL JOINTS

- .1 Tapes fill and sand all joints and introduce control joints ($\pm 10m$) ($\pm 35'$) O.C) or as required under Section 09250 of the Specifications and as outlined in U.S.G. or C.G.C. Gypsum Construction Handbook.
- .2 Patch countersunk fasteners and any damage to match component texture.

3.5 FINISHING

- .1 Refer to Painting Section of the Specifications.
- .2 The Paint Contractor shall comply with ASTM C 840-79 Specifications.

NOTES:

- .1 National Form G.R.G. components shall be used for Interior Applications only.
- .2 Unfinished G.R.G. may exhibit slight imperfections, normally hidden by textured or mat finished. To obtain satisfactory results with Gloss Finished, additional filling, sanding, priming and painting may be required.
- .3 Improper Sealing, more than crowning, can cause tape joint read-through after painting. This is due to the difference in porosity between joint compounds and G.R.G. Therefore, ensure that the Painting Contractor seals all surfaces properly prior to finishing.

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