SECTION 09512

GLASSFIBRE REINFORCED GYPSUM (GRG)-MATRIX CEILING COFFER

GENERAL

1.1 SECTION INCLUDES

.1 Furnish all materials, labour, equipment and services necessary for the supply of Ceiling Form as indicated on the drawings and contract documents. Installation is the responsibility of the General Contractor.

.2 Work shall include supply, installation and joint treatment where required.

1.2 RELATED SECTIONS

.1 Sections 09130: Acoustical Suspension Systems
.2 Sections 09250: Gypsum Board
.3 Sections 09900: Painting
.4 Sections 01500: Sprinklers, Air Diffusers
.5 Sections 01600: Light Fixtures, Speakers, Smoke Detectors

1.3 INTENT

.1 This specification is intended to generally outline the Matrix Ceiling Form 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 Acoustical Contractor shall install the work under this section and he will be responsible for co-ordinating the installation with other trades.

1.5 SUBMITTALS

.1 Submit a minimum of 3 – (7.6cm x 7.6cm) (3" x 3") samples of each coffer required showing face and edge conditions to the finishing contractor for paint selection.
.2 Submit shop drawings for approval showing reflected ceiling layouts, sections, and details, and the relation of the Matrix Ceiling Form to the surrounding construction.

1.6 MOCK-UP

.1 Prior to production erect a proto-type on-site or at the National Form 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 Matrix Ceiling Form shall be prefabricated with high density gypsum, free of resin and asbestos, reinforced with continuous filament random glassfibre matt or chopped strand.

.2 Matrix Ceiling Form shall be reinforced with wood or steel if required. (Depending on Suspension System)

.3 No additives such as retards, accelerators or polymers are permitted.

.4 Fabrications will be as per approved shop drawings.

.5 Matrix Ceiling Form will be factory finished with a white latex paint.

2.3 TOLERANCES (FABRICATION)

Dimensional – all directions	(1.6mm) (1/16”)
Thickness – skin	(1.6mm) (1/16”)
Thickness – total unit	(3.2mm) (1/8”)
Warpage or Bowing	(5,28mm/m) (1/16”/foot)

2.4 PHYSICAL PROPERTIES

Shell Thickness	(±3.2mm) (±1/8")
Weight (depending on reinforcing	(7.5-9.8 kg/sq.m.) (1-1/2-2lbs/sq.ft.)
Density	(1590-1780 kg/cu. m.) (100–112 lbs/cu.ft)
Flexural Strength	(22.1-27.6 Mpa) (3,200–4,000 p.s.i.)
Compressive Strength	(28.9-31.0 Mpa) (4,200–4,500 p.s.i.)
Modulus of Elasticity – In flexure	(8.96 – 11.7 µpa)(1.3 – 1.7 10-6/p.s.i.)
- In tension	(18.6 – 26.19 x µpa)(2.7 – 3.8 x 10-6/p.s.i.)
Tensile Strength	(12.4-13.8 kpa) (1,800–2,000 p.s.i.)
Impact Strength	(55.2-61 kpa) (8.0-8.8 ft.lb/sq.in.)
Hardness – Barcol	54
Instron Failure Test – built in furring	(127 kg) (280 lbs.) (minimum)
Fiber/Fibre Content	5-6% by weight
Coefficient of Expansion	(15.02µ mm/mm ºC)(8.3 x 10-6 in. /in. ºF)
Fuel Contribution (ASTM E84-80)	0
Flame Spread (ASTM E84-80)	0
Smoke Index (ASTM E84-80)	0

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-INSTALLATON RESPONSIBILITY

.1 Field Measurements: Prior to manufacturing, the installer will be responsible for obtaining all field dimensions for inclusion on the manufacturers shop drawings. (Required only for custom shapes)

.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 Units displaying obvious damage must be rejected at site at time of delivery.

.3 Store the units in original cartons in a fully enclosed space where they will be protected against damage from moisture, surface contamination or other causes.

.4 Handle Matrix Ceiling Form carefully to avoid chipping edges or damage to Matrix Ceiling Form in any way.

.5 Do not install Matrix Ceiling Form until space is enclosed and weatherproof, wet-work is completed and nominally dry, work above ceilings is complete, and ambient temperatures and humidity is continuously at values near those indicated for final occupancy.

3.3 INSTALLATION

.1 Install suspension systems to comply with ASTM C 636. Support hangers from building structural members only (not from metal deck or finish materials.) Locate hangers not less than 6" from each end and spaced 4'-0" along each carrying channel or direct-hung runner, unless otherwise indicated.

.2 Level suspension systems to tolerance of (3.2mm in 4 m.) (1/8" in 12'-0").

.3 Install edge members to match grid at perimeter of ceiling area. Suspend edge pieces (1 meter) (4'-0") O.C.

.4 Install edge pieces, carrying and infill components of grid to be flush along bottom plane and to fit tightly to adjacent pieces.

.5 Install coffers in co-ordination with suspension system, with edges concealed by support of suspension.

3.4 CLEANING

.1 Clean exposed surface of ceiling, including trim, moldings and suspension members. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

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 Matrix Ceiling Form shall be used for Interior Applications only.
.2 Unfinished units may exhibit slight imperfections, normally hidden by textured or mat finishes. To obtain satisfactory results with Gloss Finishes, additional priming, sanding and painting may be required.