

PART 1 - GENERAL

1.01 SUMMARY:

- .01 Provide special glassfiber reinforced cement (GRC) shapes in accordance with the requirements of the contract documents.
- .02 The installing contractor shall be responsible for verifying that all required blocking is provided and installed in the correct locations for GRC component's proper installation.

1.02 WORK INCLUDED

- .01 Supply of GRC units.
- .02 Erection/installation.
- .03 Joint treatment
- .04 Supply and installation of backup supports, shimming labor and materials, etc.

1.03 RELATED WORK SPECIFIED ELSEWHERE:

- .01 Framing and support systems.
- .02 Caulking.
- .03 Finishes. The paint manufacturer shall recommend a breathable primer and paint, suitable for cement surfaces.

1.04 QUALITY ASSURANCE:

- .01 Materials and work shall conform to the latest edition of reference specifications specified herein and to applicable codes and requirements of local authorities having jurisdiction.

1.05 QUALIFICATION:

- .01 The manufacturer of glassfiber reinforced cement work shall submit evidence of satisfactory projects completed over the last 10 years.
- .02 The installer of the work specified herein shall be approved by the manufacturer of the specified material.
- .03 The installer of the work, with more than 5 years experience in the installation of GRC units, shall carry out the installation efficiently and co-operate fully with other trades.

1.06 CERTIFICATION/REFERENCES:

- .01 Submit manufacturer's product data, including copies of fire test reports.
- .02 Except as otherwise additionally indicated on the drawings or specified herein, the standards referred to below, shall apply to work under this section.

.1	ASTM C 473	Nail Pull Resistance
.2	ASTM C 473	Humidified Deflection
.3	ASTM C 947	Elastic Limits
.4	ASTM D 256	Impact Resistance
.5	ASTM D 638	Ultimate Tensile Strength
.6	ASTM D 638	Young's Modulus
.7	ASTM D 696	Coefficient of Linear Thermal Expansion
.8	ASTM D 790	Flexural Strength
.9	ASTM D 790	Flexural Modulus
.10	ASTM D 2583	Barcol Hardness
.11	ASTM E 84	Flame Spread Index,
.12	ASTM E 84	Smoke Developed Index

1.07 DESCRIPTION OF WORK:

- .01 This specification is intended to outline the general requirements of the DecoForm (GRC) units as they pertain to the overall design of the project. The manufacturer's recommendations shall not govern the work in this section.
- .02 The installing contractor shall perform all work in this section, including installation, caulking, filling and patching and will assume responsibility for coordinating installation with associated trades.
- .03 GRC is a decorative non-load bearing material and as such the manufacturer cannot be held responsible for structural, load, or seismic considerations.

1.08 DESIGN CRITERIA:

- .01 Unless stated on DecoForm's drawings, fabrication tolerances are as indicated below.

.1	Dimensional - all directions (0' - 10')	± 1/8" (3.2mm)
.2	Dimensional - all directions (11' - 20')	± 3/16" (4.8mm)
.3	Straightness along an edge or surface	± 1/8"/linear ft.
.4	All reveals, setbacks or returns	5E draft
.5	All corners	1/16" - 1/8" radius

1.09 SAMPLES:

- .01 Submit duplicate min. 6" x 6" GRC samples.

1.10 SHOP DRAWINGS:

- .01 Submit for approval, shop drawings of units which show sections, details, joint treatment and the relation of the GRC units to adjoining components.

1.11 SCHEDULING:

.01 Special scheduling for site coordination must be specified at time of bidding.

1.12 DELIVERY, STORAGE AND HANDLING:

.01 Units shall be handled and transported in a manner so as not to create damage or excessive stresses.

.02 GRC units shall be stored level on a clean dry surface in an area protected from weather, moisture and damage. The units shall not be stacked or leaned unless instructed otherwise by the manufacturer.

1.13 WARRANTY:

.01 The manufacturer warrants that the delivered material supplied will conform to sample and to specifications and will be free from defects in workmanship or material under normal use and conditions for a period of one year from date of shipment. Should defects, attributable to the manufacturer, appear within one year of the date of shipment, the manufacturer has the option of replacing or repairing the defective material.

.02 Limitations: The aforementioned general warranty is exclusive. All other warranties whether expressed or implied or arising by operation of law, usage of trade, course of dealings or otherwise, are excluded. The only warranties are those expressed above. The manufacturer shall not be liable for any penalty or for any loss or damages associated with the removal or installation of its product or claims of third parties against the Purchaser.

PART 2 - PRODUCTS

2.01 MANUFACTURER:

DecoForm Inc.
90 Milvan Drive
Toronto, Ontario
CANADA M9L 1Z6
Phone: (416) 745-4970
Toll-free 1-877-DECOFORM
FAX: (416) 745-6636
E-mail:sales@decoform.com

Website:www.decoform.com

2.02 MATERIALS:

- .01 GRC units shall be prefabricated with glassfiber reinforced cement.
- .02 Units will be suitably reinforced with additional materials as required.
- .03 GRC units are supplied primer ready. Finishing is specified elsewhere and shall be applied after the GRC units are installed.
- .04 Exposed fasteners shall be stainless steel. All other fastening or attachment devices shall be appropriately plated or galvanized.
- .05 Where cast-in texture is specified, the texture shall be approved at time of sample submission.
- .06 Related product sections include:
 - .1 Columns Master Spec. 03 49 13
 - .2 Trim Master Spec. 03 49 43
 - .3 Cementitious Panels Master Spec. 07 44 53

2.03 PHYSICAL PROPERTIES:

- .01 Glass content 5 - 6% by weight,
- .02 Weight (depending on reinforcing) 2.9 lbs/sq.ft.
- .03 Shell Thickness 3/8" nominal (1/4" min.)
- .04 Flame Spread Index (ASTM E 84) 0 (Class 1) (Class A)
- .05 Smoke Developed Index (ASTM E 84) 0 (Class 1) (Class A)
- .06 Flexural Strength (ASTM D 790) 4,650 psi (32.1 MPa)
- .07 Flexural Modulus (ASTM D 790) 1.43×10^6 (9,860 MPa)
- .08 Elastic Limit (ASTM C 947) 981 psi (6.70 MPa) avg.
- .09 Ultimate Tensile Strength (ASTM D 638) 1,480 psi (10.2 MPa)
- .10 Impact Resistance (ASTM D 256) 7.83 ft.lb./in (mean value)
- .11 Barcol Hardness (ASTM D 2583) 81 Avg.
- .12 Coef. of Thermal Expansion (ASTM D 696) 5.50×10^{-6} in/in EF/ 9.95×10^{-6} mm/mm
- .13 Nail Pull (wood embedment) (ASTM C 473) 466 lbf. Avg.
- .14 Nail Pull (metal embedment) (ASTM A 473) 139 lbf. Avg.
- .15 Humidified Deflection (ASTM C 473) 0.2 mm. mean deflection
- .16 Compressive Strength (ASTM C 472) 10,364 psi.
- .17 Young's Modulus (ASTM D 638) 1.48×10^6

PART 3 - EXECUTION**3.01 EXAMINATION:**

- .01 Prior to the manufacture of components, the installer shall check all pertinent site dimensions and conditions against the manufacturer's drawings and relay discrepancies to the manufacturer for inclusion in the drawings.
- .02 Prior to installation, the installer shall compare job site dimensions and conditions against the Architect's drawings and shall report any discrepancies to the General Contractor and the Architect. Work shall not proceed until discrepancies are corrected.
- .03 Prior to installation, the installer shall examine pertinent job-site conditions to insure proper arrangement and fit of the work. Start of work implies acceptance of job-site condition.
- .04 All surfaces or framing structures shall be plumb and true as required.

3.02 ERECTION:

- .01 Install work as indicated on drawings, as specified herein and in accordance with approved shop drawings and manufacturer's recommendations.
- .02 Provide all support framing/reinforcing/support brackets required for work of this section and to ensure solid and secure installation.
- .03 Provide temporary supports to maintain position as units are being installed.
- .04 Fasten units with screws through the face of the GRC unit(s), or from the rear.
- .05 Adequate control and/or expansion joints shall be employed.
- .06 Pre-drill fastener holes in GRC components. Clean fastener holes to remove dirt and oil.
- .07 Attach GRC components to framing and substrate with steel drill screws. Do not use pneumatic staple guns. Countersink screw heads below adjoining finished surface.
- .08 Fasten not less than 5/16" from edge or end.
- .09 Cover screw heads with joint compound to produce, smooth, flush and level surfaces.
- .10 GRC units shall be handled with care and lifted with appropriate equipment.
- .11 GRC units shall be installed true and plumb, shimmed where necessary.
- .12 Caulk joints where required with a one-compound elastomeric low modulus urethane sealant equivalent to Sonolastic Ultra. Control joints shall be provided where required as specified by Architect. Color of caulk to be selected by Architect.
- .13 Expansion joints shall be installed as per Architect's recommendation.
- .14 Anchors and fasteners: Type 304 stainless steel where exposed; hot dip galvanized steel where unexposed.

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3.03 PATCHING AND CLEANING:

- .01 Repair any defects found after the work of all trades has been completed, regardless of how, or by whom, the damage was caused. Patching shall match the original work. Use Auto Body filler or a polymer modified cementitious product with migrating corrosion inhibitors equivalent to Sika Top to repair any defects and areas requiring patching. Select the correct product by application.
- .02 Patch all countersunk fasteners and damages to match unit's texture, finished flush with face of unit.
- .03 Soiled units may be cleaned using detergent and water.

3.04 FINISHING:

- .01 All DecoForm GRC requires site prime and paint. Use only breathable primers and paints/coatings equivalent to Sherwin-Williams Loxon A-100 breathable primers and paints).