



RM PRODUCTS LTD.

**Fiberglass Enclosures For
The Water & Wastewater
Industry**



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About Us

- RM Products Ltd is a leading manufacturer of modular fiberglass enclosures used in a variety of water and wastewater applications.
- RM's modular design allows for flexibility in providing the perfect enclosures customized to your specific needs.
- From concept to final product RM's CAD design and support team provide a total solution to your equipment enclosure needs.
- RM has the ability to design a non-corrosive enclosure or cover to house your water treatment equipment.
- One stop solution including electrical options.
- With our RM Products modular design you have the ability to assemble in difficult locations where construction is very constrained.
- Let RM be a part of your team to help you on a project and design the enclosure or cover needed for the equipment.
- RM also provides 3D CAD drawings.
- RM's enclosures are easy to ship, components only or pre-assembled.
- RM enclosures are light weight and high strength.

Some uses are Screen Covers, Pumping Station Enclosures, Chemical Containment, Blower Buildings, Septage Receiving Stations, RBC Covers, Chlorine Buildings, UV Filter Equipment Covers, Package Wastewater Treatment Building, Backflow Prevention Building, Headworks and Mixing Stations.

Applications

Septage Receiving Station

All fiberglass construction with stainless hardware and explosion proof lighting, fans and heat.



Chlorination Building or Sampler Building

All fiberglass construction, including a contained floor. Fans, dampers, lighting, receptacles and heaters installed. Shipped preassembled.



RBC COVERS



Fluidized-Bed Bioreactor



Pumping Station



Highway 400, Ontario Canada

Biomag Building



Biomag building is all fiberglass construction 20' wide x 40' length x 13' height.
The compressor building and electric building 12' wide x 44' length x 14' height.
The building has a separation wall and is lined with sound barrier insulation.

Screen Cover



Charlotte, Michigan



Screen Room



Angus, Ontario

Equalization Tank Enclosure



**Sussex County Municipal
Utilities Authority
Frankford Township, New Jersey**



**Emission Air Building
& Sluice Gate
Electrical Building**

Ashbridges Bay
Water Treatment Plant

Toronto, Ontario

5 Buildings Total

Building That Covers Grease Trap



Downers Grove Illinois—12' x 14' x 9' high, 2' roof hatch stainless hardware and lifting points
Shipped preassembled

Building To Cover Clarifiers & Sludge Wet Well



Wadena Minnesota—20' x 40' x 17' high, was designed to fit into the round covers and open and connect to each cover.

Pump Enclosure



Rushville Indiana
10' x 10' x 8' height Pump Enclosure
with complete removable roof.
Shipped preassembled.

8' x 8' x 8' Building For Pumps
Being shipped to a food processing plant in
Upper New York State.
Shipped preassembled.



Custom Small Pump Covers



Septage Receiving Station



Aurora, Ontario

The RM building had to be L shaped due to tight space.

All lights, heaters, exhaust fans & louvers in class 1, div 1, were supplied by RM Products

Specifications

Pre-Assembled & Unassembled Fiberglass Buildings

General Scope:

This specification sheet consists of describing the design, engineering, materials, fabricating, assembling, options and delivering an RM Products Ltd Building.

Engineering:

1. The building design is pre-engineered. Pre-engineered is defined by using a schematic of a Finite Element Analysis (FEA) model by the National Research Council to determine the acceptable wind and snow loads of this RM Products Building. The FEA Report is supplied with the approval drawings.
2. FEA must be completed by a recognized third party structural engineering consultant.
3. Certified Panel Testing

ASTM C393 determining the flexural properties of the sandwich construction and ASTM D7250 was done to determine flexural stiffness and the cores shear modulus. These tests are required so there are no assumptions made when doing the modeling. This should be done when designing and FRP building using a sandwich panel design.

4. Sealed engineered drawings are also available.
5. Wind Load:
The results of the FEA Engineering report shows that RM Products Ltd, standard design meets wind speed of 148mph (3 second gust).
6. Snow Load:
Minimum Allowable Design Snow Load of 50 PSF.
Note-increased snow load is available by increased laminate thickness which is described in FEA report.

Design:

1. Walls, Roof, and End Sections: All component sections consist of a minimum of one inch of high density foam that is totally encapsulated by 1/8" of fiberglass laminate. Laminate is to have a minimum glass content of 25%.

To eliminate any chance of delamination and to increase stiffness of the components the two laminate skins that sandwich the foam core are linked throughout by resin when manufactured and not by bonding two skins to the foam by an adhesive which increases possibility of delamination and decreases stiffness and strength.

2. No type of metal studs or trusses are required with an RM Products building, eliminating possible twisting and bending in transportation. This also decreases the weight of the structure.
3. All buildings have their own internal molded structural fiberglass flanges that are used to stiffen and fasten. The thickness of flanges is determined by the FEA report and based on minimum load requirements described in the FEA report.

Size:

1. Wall height
 - a. Maximum wall height is 14'
 - b. Factory assembled buildings will have a maximum wall height is 10' due to shipping restrictions.
2. Building length
 - a. Length is unlimited
 - b. Factory assembled building maximum length is 48' due to shipping restrictions
3. Widths
 - a. Width is up to 20'
 - b. Factory assembled building maximum width is 14' due to shipping restrictions

Roof Pitch Options:

1. Buildings up to 10' in width options are
 - a. Low profile roof design with a 1 to 12 pitch slope or
 - b. A 3 to 12 pitch
2. Buildings 10' and wider have a 3 to 12 pitch roof

Insulation:

1. Insulation consists of a minimum 1" foam closed cell polyiso foam core with a density PCF (-30kg/m³) core, Type 1 Class 1
2. Foam core meets ASTM E 84-98 Fire Test Flame Spread -25 or less and Smoke Density -450 or less
3. R-12 minimum with higher R value options available

Laminate:

1. All properties to meet or exceed requirements that are laid out in the corresponding FEA report that defines load achievements:

Tensile Strength - ASTM D638 - 13,390 psi Flexural

Strength - ASTM D790 - 22,501 psi

Comprehensive Strength ASTM D695 - 20,747 psi Density - - 2.995 g

Exterior Finish:

All exterior surfaces are orthophthalic polyester with high quality ultra violet inhibitors and fully pigmented. This provides pigment and ultraviolet protection throughout the laminate and not only on the surface.

Optional Floor System:

1. Floors system options include
 - a. Pressure treated wood
 - b. Aluminum
 - c. Steel
 - d. Fiberglass
 - e. Fiberglass containment floor
2. Each floor is designed and built to meet the floor load requirement

Concrete Mounting:

1. There is a 3” wide fiberglass internal mounting flange around the building perimeter. An expandable neoprene sponge rubber gasket to provide a weather tight seal is also provided.
2. The base will be anchored with 1/2” expandable x 3 3/4” long wedge anchors providing a 2 to 1 safety factor.
3. Base anchors include standard galvanized or optional stainless steel.

Fiberglass Doors and Frames

Exterior Finish:

1. All exterior surfaces are orthophthalic polyester with high quality ultra violet inhibitors and fully pigmented. This provides pigment and ultraviolet protection throughout the laminate and not only on the surface. Surface thickness is 1/8”.
2. The one piece molded fiberglass composite door shall be 1 3/4” thick with a similar design to the other sections of the building, except it being 1 1/2” thick foam.
3. The frame is a minimum 3/8” thick solid fiberglass designed specifically for this door.
4. Door gasket shall be extruded closed cell neoprene sponge rubber providing a tight weather seal.
5. Hinges:
 - a. There are three 4 1/2” x 4” ball bearing NRP hinges.
 - b. Standard hinge finish is satin chrome.
 - c. Optional hinge finish is stainless steel.
6. Door can be hung anywhere in the building with left or right swing.
7. Doors can be double hung.
8. All doors come with an adjustable door sweep.
9. Option: 12” x 12” safety glass window.

Door Hardware Options

1. Standard:
 - a. Lever design, entrance function.
 - b. Schlage “C” keyway 6-pin re-keyable cylinder.
 - c. Satin chrome finish.
2. Stainless Finish
 - a. Deadbolt with passage set.
3. Stainless Finish
 - a. Lever design.
 - b. Grade 1, Schlage “C” keyway 6-pin re-keyable cylinder.
4. Stainless Handle
 - a. With 1/2” padlock loop and single point latch.
 - b. With 1/2” padlock loop and 3 point latch.
5. Panic Push Pad Type
 - a. Meets ANSI A156.3, Grade 2 requirements with aluminum finish.

OR

 - b. Meets ANSI A156.3, Grade 1 requirements with stainless finish.

If for any reason none of the above serves your needs, please let us know and we will find the door hardware that you require.

Threshold Options:

1. Standard threshold is 4" wide x 1/2" high creates a no trip entrance.
2. Option-threshold 4" wide x 1/2" high with thermal break.
3. Option-threshold 4" wide x 15/16" high with thermal break, with frost inserts.

Door Closer:

1. Standard is heavy duty door chain.
2. Option:
 - a. Surface mounted, push side mounted door closer, double arm closer meets ADA requirements.

Windows:

1. Vinyl windows sealed, dual pane, any size, most common and stocked is 24" x 24" or 36" x 36"
2. Option:
 - a. Fixed
 - b. Sliding
3. Glass Option:
 - a. Safety glass
 - b. Plexiglass
 - c. Low - E

Fastening Hardware:

1. Standard
 - a. 304 Stainless on the exterior, zinc plated on the interior.
2. Option
 - a. 304 Stainless on the exterior and interior

Finished Building:

1. 3D CAD drawing is included in the cost of the building along with the specification sheets of all options.
2. All buildings are designed to be weather proof, watertight and corrosion resistant.
3. All buildings have no exposed joints on the exterior of the roof.
4. All areas that require caulking will receive a high quality silicone sealant that matches the exterior color of the building.
5. All electric wiring and components such as light, fans, and receptacles will be surface mounted.
6. Any cutouts done in the walls or roof in the field is acceptable. There is no concern of delaminating because of the linking of the laminates explained in the design section.
7. Assembly Manual
 - a. All unassembled buildings will have an assembly manual and contact information.
 - b. An RM Products Ltd representative will contact the contractor before assembly to review the assembly process.
8. Optional Service: RM Products Ltd can provide a representative to be on site to assure that the building is installed properly. This is not necessary but the option is available.

Shipping:

1. All pre-assembled buildings are shipped shrink wrapped for protection from road splatter and debris.
2. All pre-assembled buildings without a floor will be shipped with lifting eyes.
3. All pre-assembled buildings without a floor will be braced inside for protection.
4. All buildings are quoted delivered to the job site, off loading is the responsibility of others.

Electrics, Lighting, Venting, HVAC and Heat:

1. As noted in finished building section all electric wiring and components are surfaced mounted.
2. All fixtures can be supplied in;
 - a. Explosion proof
 - b. Non Explosion proof
 - c. Non Corrosive
3. Specification sheets will be supplied for approval and positioning of equipment will be directed by customer.
4. Regular electric items supplied;
 - a. Panel boxes with breakers as required.
5. Lights;
 - a. Incandescent
 - b. Fluorescent vapor light
 - c. Emergency lightening
 - d. Exterior photocell
6. Standard fan has aluminum blades and is wall mounted, size 8" to 36" single or variable speed with or without reverse thermostats. All fans will have a bird screen and hood.
7. Venting;
 - a. Standard fixed 45 degree louver 8" x 8" and 12" x 12" with screens in a PVC finish.
 - b. Standard manual operated 90 degree louver any size in an aluminum finish with screen and hood.
 - c. Back draft damper any size in an aluminum finish, screen and hood.
 - d. Manual operated back dampers 90 degree any size, in an aluminum finish screen and hood.
 - e. Motorized back damper 90 degree any size in an aluminum finish screen and hood.
8. HVAC;
 - a. Window air conditioner 8,000 to 25,000 BTU
 - b. HVAC Manufacturer Marvair - Size Range 1 ton to 6 ton
 - c. Designed for commercial applications
 - d. Designed for Telecommunications applications
 - e. Call to review all options

9. Heating;

- a. Standard heater is a fan operated electric heater, size range 1.5kw to 10kw includes built in thermostat with mounting brackets epoxy - powder coated, 20-gauge steel cabinet, totally enclosed and factory lubricated motor, 350 CFM quiet helicoidal fan, adjustable louvers, thermal protection with automatic reset.
- b. Standard explosion proof electric unit heater, size range 3kw-35kw, designed for Class 1 Div. 1 and 2 Groups C, Class 11 div. 1 and 2 Groups E, F and G, Class 1 Zones 1 & 2, Groups 11A and 11B

OPTIONS:

1. Built in thermostat.
2. Built in disconnect switch.
3. Built in light.
4. 3-Way switch.
5. Stainless steel cabinet.

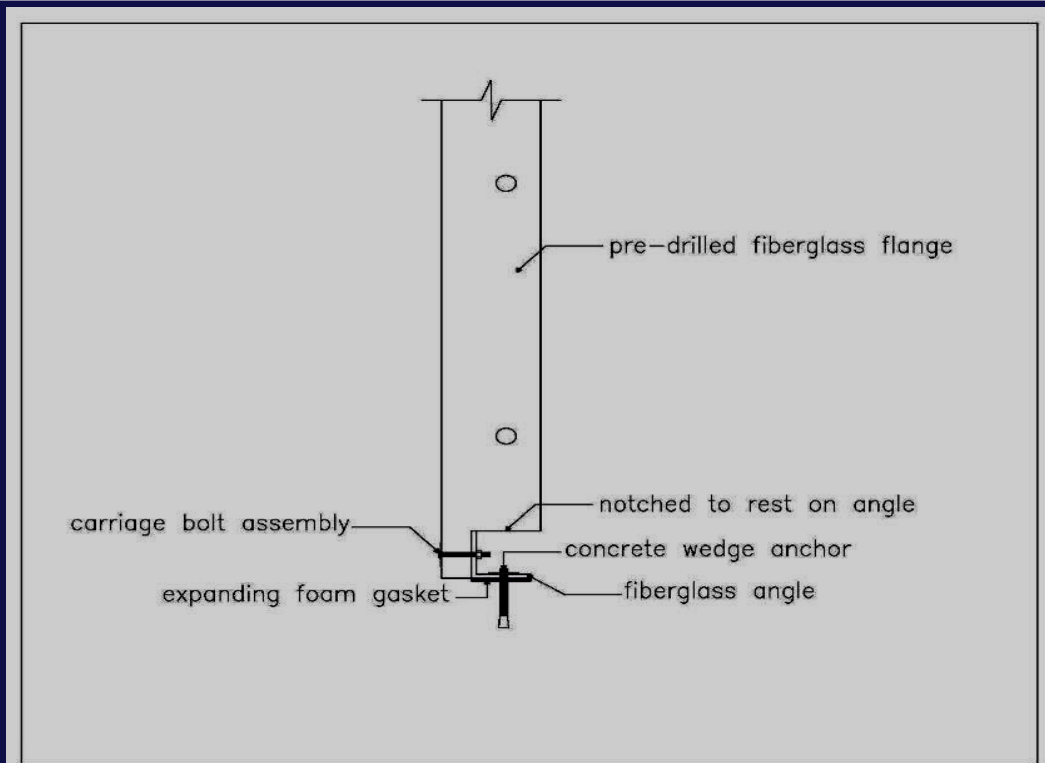
Other Popular Options:

1. Roof hatch with lifting eyes
2. Roof hatch that can be opened from ground level with hoist operated option.
3. Custom cutouts with removable covers.
4. Partitions.
5. Fiberglass cabinets and counters.
6. Shelving.
7. Equipment mounting channels.
8. Sky Lights.
9. Fire suppressant system.
10. Eavestrough and downspouts.
11. Jack stands and custom anchors.
12. Cable Trays.
13. Entry Ports.

Fiberglass and Anchoring



The most common method of anchoring the building to a concrete slab is a fiberglass angle attached to the concrete slab. The fiberglass angle has an expandable neoprene sponge rubber gasket to provide a weather tight seal and is anchored with wedge anchors. RM supplies enough wedge anchors to provide a minimum 2 to 1 safety factor for 150mph wind load on the building.



Electrical Options and Installation

Hanging Electric Fixtures and Conduit

RM's fiberglass buildings are perfect for hanging electric fixtures and conduit. RM's structural internal flange design and its solid internal and external wall construction make it the perfect building for surface mounting of electrics.

Fixtures and conduit can be easily mounted using Unistrut and Unistrut strapping.



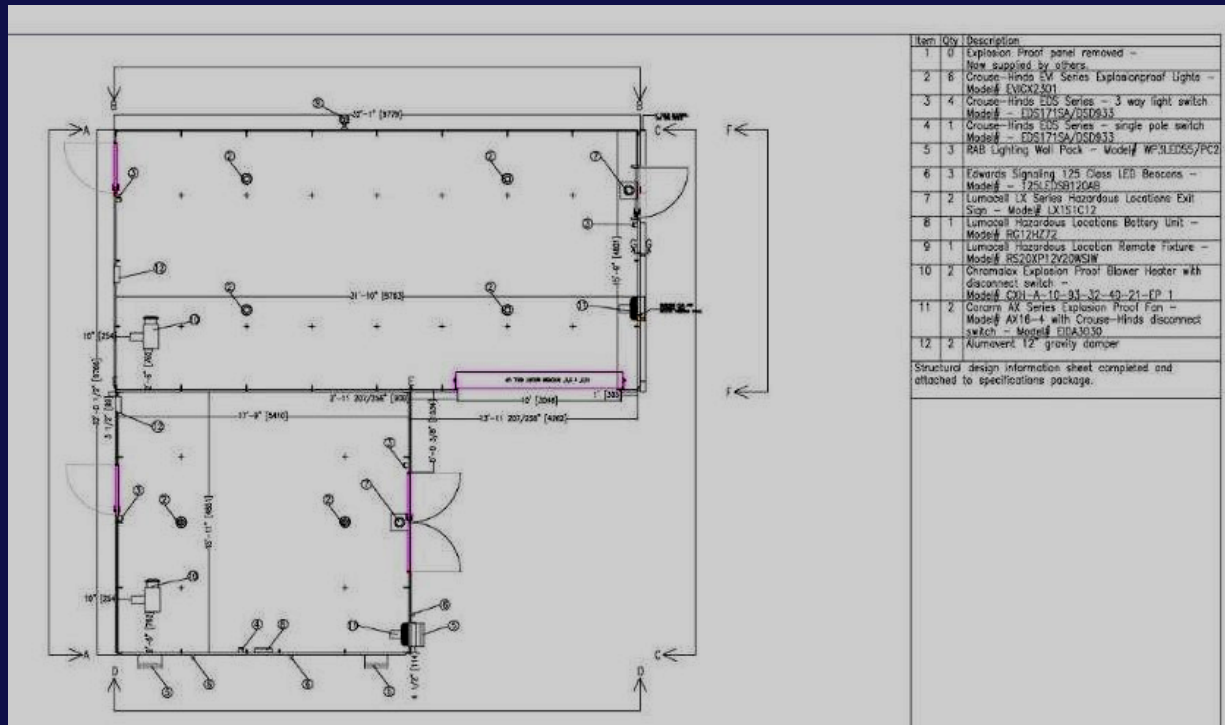




Case Study Septage Receiving Station

RM Products works with the engineering company to design the configuration of the structure and provided all drawings of the building. We also provide all specifications for the tenders including specifications for lighting heating, and fans etc.

Below are drawings and highlights showing how easy it is to work with RM Products Ltd and our fiberglass products.





RM buildings can be shipped assembled but for larger buildings that cannot be shipped pre-assembled, the parts are shipped in a closed trailer and can be removed easily by hand due to the lightweight of the components. One truck load of components can hold up to 24000 cubic feet.

For the base, fiberglass angle is anchored to the concrete pad. Sections are then bolted together. Each section consists of two side panels and roof section .





Sections are easily lifted by an extendable forklift or crane.



Building Standing in six hours.



Building was ready for electricians in three days all Class 1 Div. 1 explosion proof fixtures also supplied by RM Products.

All man doors are fiberglass, the rollup door has non-corrosive features. All hardware is stainless

