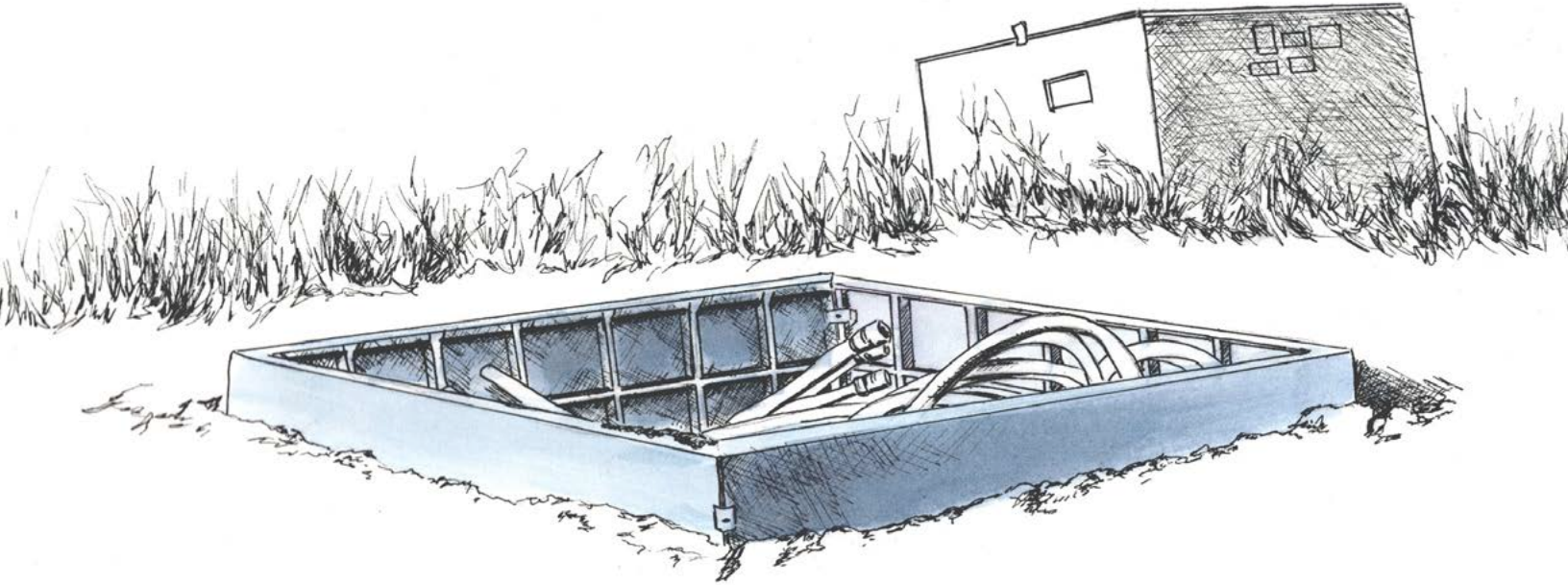


# CONCAST

*Fibercrete®*

PRECISELY ENGINEERED HIGH STRENGTH CONCRETE



## MODULAR GROUND SLEEVES



## IDEAL USES FOR CONCAST MODULAR GROUND SLEEVES



**SWITCHGEAR BASE**



**SECTIONALIZER BASE**

- Concast modular ground sleeves provide a stable and attractive base for any utility pad mount apparatus.
- Fibercrete® modular ground sleeves have a very high strength to weight ratio; yielding a relatively lightweight though extremely tough unit that saves on handling and shipping costs.
- Low in-place cost, plus the proven durability of Fibercrete® adds up to a truly economical installation option.
- The long list of panel sizes creates a vast array of available box size combinations.
- Light-weight panels are purchased individually; a hardware kit is included with every set of 4 panels.
- Vertical shifting after install is prevented by the patented interlocking wall design.

### Guide Specifications

MGS units shall be constructed with Concast Fibercrete®. They shall be composed of cement mortar; and reinforced by alkali resistant fiber and deformed high tensile wire or rebar.

Specifications can be downloaded at [www.concastinc.com/product\\_specs/Concast\\_MGS\\_Specifications](http://www.concastinc.com/product_specs/Concast_MGS_Specifications)

### Detail Drawings Provided

Concast will provide detail drawings for engineering approval, and to assist the construction crew with installation. Drawings will show overall ground sleeve size, opening size, weight, and any accessories required.

Installation guidelines are at [www.concastinc.com/product\\_specs/Installation\\_Guidelines/MGS\\_Install\\_Guide](http://www.concastinc.com/product_specs/Installation_Guidelines/MGS_Install_Guide)



# MGS Overview

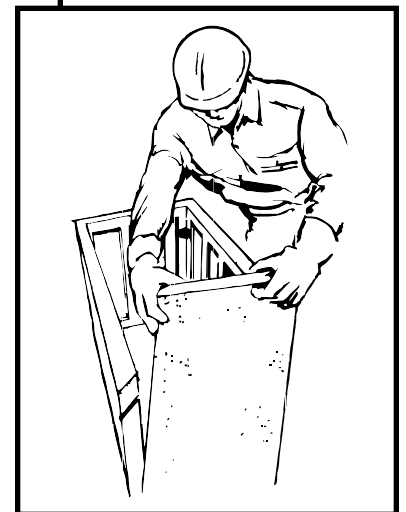
## REDUCE INSTALLATION COSTS WITH CONCAST'S FIBERCRETE® MODULAR GROUND SLEEVES

IN-PLACE COST IS LESS than site-cast concrete, conventional precast concrete, plastic mortars, or fiberglass plastics.



### Benefits:

- **HANDLING IS EASY.** A crew of 2 or 3 can install a modular ground sleeve without using hoisting equipment. The lightweight panel construction saves on shipping costs.
- **HIGH STRENGTH MATERIAL.** Fibercrete® fabrication makes possible a 3/4" thick wall with high strength; while providing safe, reliable support for electrical apparatus. Waffled rib design supports normal equipment loads without warping.
- **LONG LIFE.** Concrete construction means long life, plus fire and corrosion resistance. Inert mineral composition resists temperature extremes, rain, and UV degradation.
- **IMPACT RESISTANT.** Fibercrete® has about three times the impact resistance of ordinary concrete. In addition, the ground sleeves are designed with a reinforced top flange. The result is superior resistance to damage or abrasion from mowers, snow plows, and vandals.
- **RODENT PROOF.** Tough Fibercrete® is resistant to gnawing animals.
- **FLAT & RIGID.** Modular Ground Sleeves will not warp, providing a safe and secure installation. The rigidity of Fibercrete® resists the "racking" and door jamming that can occur if equipment enclosures do not rest on a level surface.
- **NATURAL APPEARANCE.** Smooth, stone-like surfaces blend with natural environment.



Modular Ground Sleeves are shipped unassembled to reduce shipping costs.

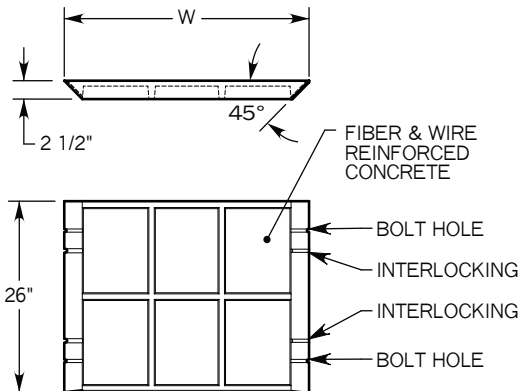
### Features:

- **WAFFLE PANEL DESIGN.** Fibercrete® MGS' unique waffle panel design reduces weight, makes handling easier, and greatly reduces shipping cost.
- **PATENTED MODULAR DESIGN.** The patented Ground Sleeve offers a wide range of flexibility with its four part interlocking wall.

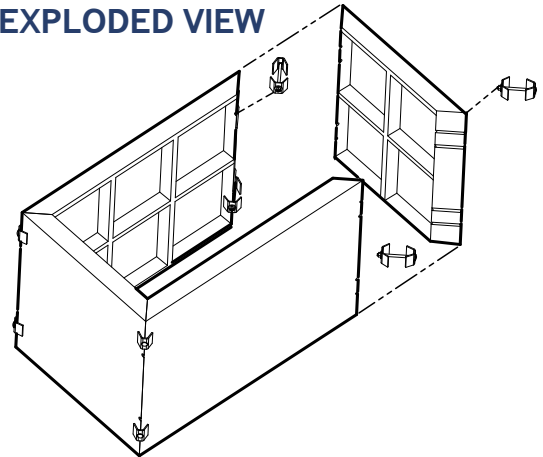
# MGS Sizing & Ordering



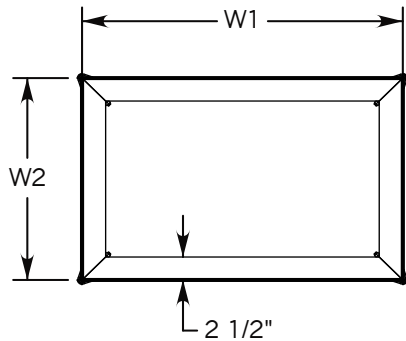
## SIDE PANEL DETAIL



## MGS EXPLODED VIEW



## TOP VIEW ASSEMBLY DETAIL



## HOW TO ORDER

Modular Ground Sleeves are purchased as individual side panels with hardware

### EXAMPLE OF A 20" X 38" BOX:

- MG-20 (QTY=2)
- MG-38 (QTY=2)
- MGS-H (QTY=1)

Stacked panels would also require the stacking hardware kit, which is part number MGS-SH-KIT.

[www.concastinc.com/Modular\\_Ground\\_Sleeves/accessories/hardware/](http://www.concastinc.com/Modular_Ground_Sleeves/accessories/hardware/)

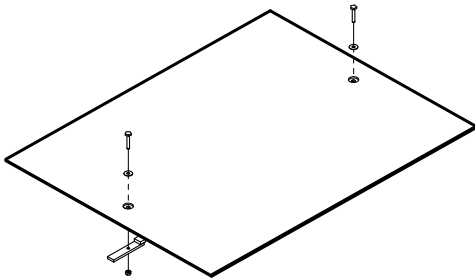
FIBERCRETE® MGS SIDE PANEL	"W" PANEL WIDTH
MG-15	15"
MG-18	18"
MG-20	20"
MG-22	22"
MG-26	26"
MG-30	30"
MG-34	34"
MG-36	36"
MG-38	38"
MG-42	42"
MG-44	44"
MG-48	48"
MG-50	50"
MG-54	54"
MG-56	56"
MG-60	60"
MG-64	64"
MG-67	67"
MG-74	74"
MG-78	78"

- **PROPER MATING:** All ground sleeve panels are designed with interlocking corner joints to prevent vertical shifting
- **ADDED DEPTH:** The standard depth of all Modular Ground Sleeves is 26 inches. For additional depth, units can be stacked.
- **VERSATILITY:** Modular Ground Sleeves have many uses such as electrical equipment bases, handholes, junction/splice boxes, and pull boxes.
- **PDF DRAWINGS:** Drawings of each of the listed side panels are available in PDF format online at [www.concastinc.com/Modular\\_Ground\\_Sleeves/MGS\\_Panels](http://www.concastinc.com/Modular_Ground_Sleeves/MGS_Panels)



# MGS Options

## ALUMINUM MGS COVERS



MGS COVERS	CORRESPONDING PANELS
<a href="#">18-18-CA1313</a>	<a href="#">MG-18 &amp; MG-18</a>
<a href="#">18-60-CA1355</a>	<a href="#">MG-18 &amp; MG-60</a>
<a href="#">26-26-CA2121</a>	<a href="#">MG-26 &amp; MG-26</a>
<a href="#">26-60-CA2155</a>	<a href="#">MG-26 &amp; MG-60</a>
<a href="#">38-38-CA3333</a>	<a href="#">MG-38 &amp; MG-38</a>
<a href="#">38-44-CA3339</a>	<a href="#">MG-38 &amp; MG-44</a>
<a href="#">38-50-CA3345</a>	<a href="#">MG-38 &amp; MG-50</a>
<a href="#">38-54-CA3349</a>	<a href="#">MG-38 &amp; MG-54</a>
<a href="#">42-54-CA3749</a>	<a href="#">MG-42 &amp; MG-54</a>

- For safety and security reasons, MGS covers are often used for delayed equipment installations in which a Modular Ground Sleeve unit is installed prior to the equipment.
- Covers are secured with tamper-proof pentahead bolts by default.
- MGS covers can be used for making any ground sleeve into a hand hole or junction box.

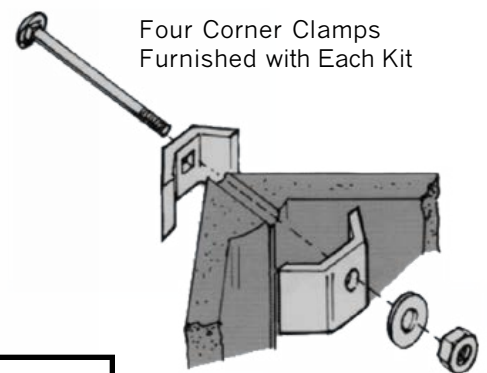
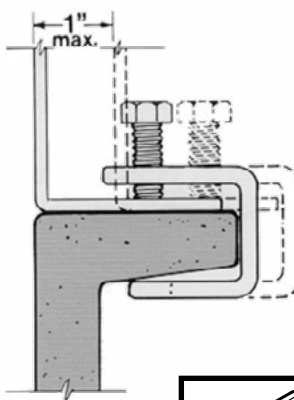
MGS

## MGS HARDWARE KIT: P/N MGS-H

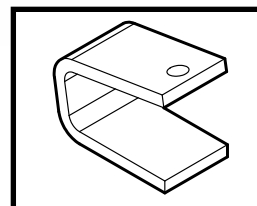
A hardware kit is included with every Modular Ground Sleeve unit. Corner Clamps are provided for assembling MGS. C-Clamps are provided to attach equipment to the top flange of the modular base. All hardware is Yellow Zinc plated (other finishes are available).

### Hardware Kit Includes:

- 4 Carriage Bolts (5/16" Dia. x 4-1/2")
- 4 Outside Corner Clamps
- 4 Inside Corner Clamps
- 4 Washers
- 4 Hex. Nut (5/16 inch Dia.)
- 4 C-Clamps
- 4 Hex Bolts (3/8" Dia. x 1" Long)



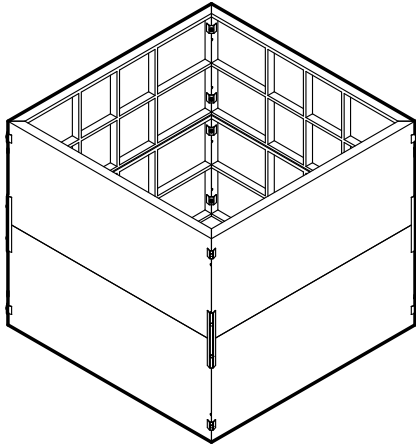
Four Corner Clamps  
Furnished with Each Kit



Four C-Clamps Furnished  
with Each Kit



## MODULAR GROUND SLEEVE STACKING



Standard Modular Ground Sleeves are 26 inches deep. When additional depth is required, ground sleeves can be stacked. Stacking hardware kits can be ordered under part number MGS-SH. These hardware kits are different from the standard corner hardware in that they include a continuous outside corner clamp that is used to tie the stacked sleeves together.

Stacked units are also supplied with industrial adhesive/sealant to seal and to tie the sleeves together at the joint. Additional sealant can be ordered under Concast part number 8004.

**PRE-ASSEMBLY:** Although units are generally delivered unassembled to save on shipping costs: any MGS unit, whether standard or stacked; can be pre-assembled at the factory and shipped as one rigid unit.



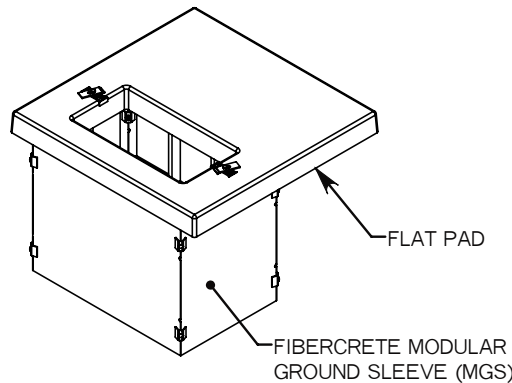
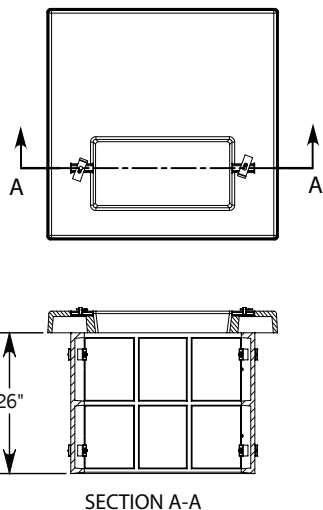
## HOLES AND KNOCKOUTS

When conduit/cables cannot be routed deep enough to enter the bottom of Modular Ground Sleeve units, holes or knockouts may be feld cut into the sidewall panel. It is important that none of the reinforcing rebar is cut during that process. That can be achieved by only cutting in the waffled sections. Fibercrete® can be drilled with any masonry tools.

### Common Situations Requiring MGS Holes and Knockouts:

- For duct bank or conduit entry.
- For substation control building applications.

## FLAT PAD SYSTEM WITH A MODULAR GROUND SLEEVE



For some flat pad installations, a Fibercrete® MGS or Modular Ground Sleeve unit can be used to create more cable training space. A small hole is excavated for the ground sleeve and the flat pad is placed on top of it. See our flat pad catalog for more information.



# MGS Accessories

## SEALANT



Vulkem polyurethane sealant is colored concrete gray and can be ordered under Concast [P/N: 8004](#). It is delivered in tubes and is designed for use on poured and precast concrete surfaces. Vulkem 116 has demonstrated superior primerless adhesion to porous substrates for over 30 years and is the sealant of choice for commercial industrial expansion joints.

## PATCH KITS

### PK-1 Patch Kit:

- Used for cosmetic repairs.
- Kit is complete with everything you need for small concrete repairs, including patching compound, bucket, and a trowel.

### PK-2 Patch Kit:

- Ideal for patching holes in non-structural concrete sections.
- Kit consists of a large Fibercrete® patch sheet (1/2" thick by 12" sq.) which is cut to size, and then a construction adhesive or concrete screws are used to attach the patch over the hole.

### PK-36, PK-69, & PK-912 PatchKwik Kits

- Easy to apply, self-adhesive fiberglass patch that is UV light activated. Available in 3 sizes.
- Spray paint can be ordered from Concast in gray or green. Part numbers are PK-Gray & PK-Green respectively.
- More detail [online](#).



[PatchKwik Installation Video](#)  
[Patch Kit Link](#)

## GUIDE POSTS & SAFETY CHAIN

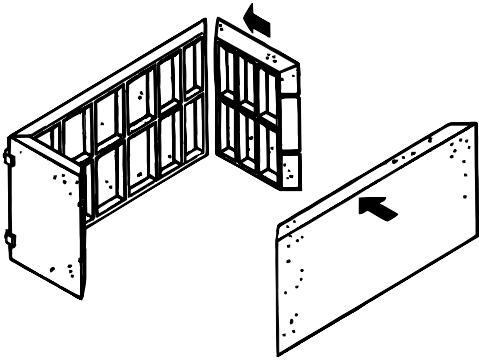
Guide posts and chain provide protection for your pre-cast MGS boxes by blocking off vehicular traffic or defining a road way. A hard, yellow plastic exterior ensures that the color will withstand years of environmental exposure like UV rays and heat. The posts are available either hollow, or concrete filled with steel rebar reinforcement. A 3/8-16 UNC threaded insert is located at the top of each post for securing optional safety chain. See [more online](#).



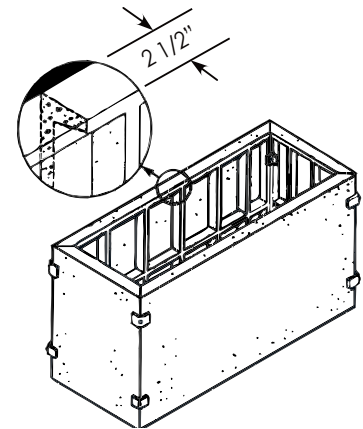
Post, Rope & Chain Part Numbers	Connection Hardware Part Numbers
<a href="#">8005Y-4E</a>	<a href="#">9001G</a>
<a href="#">8005Y-4H</a>	<a href="#">9001SS</a>
<a href="#">8005Y-7E</a>	<a href="#">9001Z</a>
<a href="#">8005Y-7H</a>	<a href="#">9001G-J</a>
<a href="#">8007</a>	<a href="#">9001SS-J</a>
<a href="#">8007Y-3</a>	<a href="#">9001ACC</a>
<a href="#">8007SG</a>	HHB.38-1.5
<a href="#">ROPE-5-BK</a>	WSR.38-1
<a href="#">ROPE-5-YW</a>	<a href="#">8007SG-CL</a>
	<a href="#">ROPE-CLAMP-625</a>
	<a href="#">SHSS</a>
	<a href="#">SHPY-3</a>

*Fibercrete*® Modular Ground Sleeves

# MGS Assembly & Installation



Modular Ground Sleeves have a top and a bottom surface. The top side is flat and the bottom side has a slight draft. An up arrow is located on the inside of each panel to identify the correct orientation. To ensure that the unit is installed correctly, please follow the directions below.



## STEP 1



Align two of the side panels in the correct upright position. Ensure that the interlocking corners are properly mated. Bolt the corner together using the provided hardware. Copy this step in all 4 corners.

## STEP 2



If the ground sleeve is not assembled in the excavated hole, its placement can be done in one of two ways. Small lightweight units can be placed by hand. Larger units may need hoisting equipment. See [www.concastinc.com](http://www.concastinc.com)

## STEP 3



Once the ground sleeve is in the desired location, check to ensure that the unit is level, and that the entire bottom flange is supported equally. Then backfill the hole to the desired grade level.

## STEP 4



Center the electrical equipment onto the ground sleeve. Using the provided hold-down C-Clamps, attach the equipment to the top flange of the ground sleeve.





## GENERAL SPECIFICATIONS FOR MODULAR GROUND SLEEVES

### 1. TECHNICAL SCOPE

- 1-A.** These specifications cover precast Fibercrete® (G.F.R.C.) modular ground sleeves manufactured by Concast Incorporated in Zumbrota, Minnesota. The manufacturer must have experience in design and fabrication of these products and also the facilities for fabricating them with the quality specified herein and without delay to the agreed upon schedule.
- 1-B.** The modular ground sleeves shall be designed and constructed to provide a serviceable life and warranty of 35 years when installed outdoors in full sunlight and without any protection from the weather at any location in the continental United States or Canada.
- 1-C.** The Supplier shall design, construct, perform dimensional and quality control tests, and prepare the pads for truck shipment. Shipping and delivery responsibilities will be defined in the project specific purchase documents. The Supplier shall provide all necessary documentation as stated in this specification.

### 2. DIMENSIONS AND DESIGN

- 2-A.** Drawings shall be made available for engineering approval, field installation, and field identification; in PDF, SolidWorks, or AutoCAD format. Standard PDF format component drawings shall also be available online.
- 2-B.** The tolerances of the dimensions of each Fibercrete® component shall not exceed +/-1/4". These tolerances apply to the components when ready for shipping, when set on a flat and level surface with no loads applied to it.
- 2-C.** Corners of modular panels shall be designed with interlocking male and female parts to reduce vertical shifting of panels.
- 2-D.** MGS units shall be made available to fit design requirements and dimensions of the equipment being supported.
- 2-E.** Ground sleeve shall be of modular design and easily assembled by two people. It shall be composed of four vertical sidewall panels and a hardware kit.
- 2-F.** The sidewalls shall be constructed with internal ribs/waffles to increase strength and unit integrity, while reducing the overall weight of the unit.
- 2-G.** The ground sleeve shall have a rigid, flat, and stable top surface.
- 2-H.** The ground sleeve shall be designed and constructed so that it and any related hardware will not trap or hold water when required, and so that it will be able to withstand repeated freeze and thaw cycles.
- 2-I.** The flat pad color shall be a natural concrete gray unless otherwise required and agreed upon.
- 2-J.** Each MGS unit shall be equipped with equipment hold-down accommodations.
- 2-K.** The precast components are designed to conform to requirements stated in ASTM C857-07 "Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures, ASTM C858-07 "Specifications for Underground Precast Concrete Utility Structures".

### 3. PERFORMANCE AND MATERIALS

- 3-A.** Cement shall conform to the requirement of ASTM C150 - Type I, II or ASTM C595 - Type IL.
- 3-B.** Course and fine aggregates shall conform to ASTM C33 "Specification for Concrete Aggregates".



- 3-D.** Preparation of concrete shall conform to ASTM A94 "Specification for Ready-Mix Concrete" & ACI 304 "Guide for Mixing, Transporting and Placing Concrete".
- 3-E. PREMIX GFRC - FIBERCRETE®**
  - 3-E.1** Composed of cement mortar reinforced by alkali resistant glass fiber, and a deformed prefabricated high tensile welded steel wire. It is fabricated via casting into steel forms.
  - 3-E.2** Shall obtain a minimum compressive strength of 6000 PSI at 28 Days
- 3-F. REINFORCEMENT**
  - 3-F.1** Steel reinforcing bars shall conform to ASTM A615 "Specification for Deformed and Plain Billet Steel Bars for Concrete Reinforcement".
  - 3-F.2** Steel reinforcing wires shall conform to ASTM A496 "Specification for Steel Wire, Deformed for Concrete Reinforcement".
  - 3-F.3** Steel reinforcing weld wire cages shall conform to ASTM A497 "Specification for Steel Welded Wire Fabric, Deformed for Concrete Reinforcement".
- 3-G.** The ground sleeve must not be affected by asphalt, transformer oil, other common chemicals, weather, or other normal service conditions that it might be exposed to.
- 3-H** The ground sleeve must not warp, rust, be UV degradable, or sustain combustion.
- 3-I.** With equipment installed; the ground sleeve shall be capable of withstanding temperature variations of -40° Fahrenheit to 149° Fahrenheit without cracking, splitting, or otherwise deforming. Material shall be have been tested and conform to ASTM C666/C666M-03.
- 3-J.** When required, site-specific, PE stamped, seismic calculations shall be provided.
- 3-K.** Concrete properties will vary depending upon the particular formulation of the concrete mix design. Customized properties can be achieved by using nonstandard ingredients, by changing or adding reinforcements, and by tailoring the overall mix design.

## 4. INSTALLATION REQUIREMENTS

- 4-A.** When the bottom of the excavation is soft, or where in the opinion of the soils engineer unsatisfactory foundation conditions exist, the contractor shall over excavate to a depth to ensure a proper foundation as directed by the soils engineer. The excavation can then be brought back up to the prescribed flat pad foundation grade with a thoroughly compacted granular material.
- 4-B.** All backfill material shall be a granular material as required by the soils engineer. MGS units shall be designed to have no limitations of backfill height. Backfill should not be bulldozed or dropped directly on the MGS unit.
- 4-C.** Installation guidelines shall be made available [online](#).





# CONCAST

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