VIRTUAL POLYMER
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VIRTUAL POLYMER COMPOUNDS, LLC
GENERAL INSTALLATION RECOMMENDATIONS
FIBERGLASS METERING MANHOLE SYSTEM

General Information

The Fiberglass Metering Manhole System manufactured by Virtual Polymer Compounds, LLC must be installed according to these basic instructions. In addition to these instructions, the Purchaser should employ the services of a Civil Engineer to develop site specific procedures. Soil conditions, flume size, piping and special equipment may require slight modifications to these instructions.

OSHA classifies all Manholes as “Confined Space”. There are a number of safety procedures that must be followed when entering a “Confined Space”. If you have any questions regarding these requirements consult “OSHA Safety and Health Standard 29 CR 1926/1910”.

These recommended installation procedures are provided for the Purchaser as a guide to planning the installation. They are in no way meant to replace the services of a Civil Engineer and are not all inclusive of possible site conditions.

Installation of the Metering Manhole can be easily accomplished with the execution of “good” construction practices.

Handling During Unloading

Great care must be taken during unloading to make sure that the Metering Manhole is not dropped or impacted. Many Metering Manhole Systems are purchased with various options, these may include pipe coupling, stainless steel tubing and/or electrical conduit to name only a few. These accessories should be located before unloading and protected during unloading.

For best success in unloading, the services of an experienced Rigger should be employed.

Equipment required for unloading will include, but may not be limited to, a crane or forklift, at least two 3” wide nylon straps, nylon rope, a spreader bars and smooth surface for staging the unloading procedure.

The drawing to follow depicts basic unloading practices.

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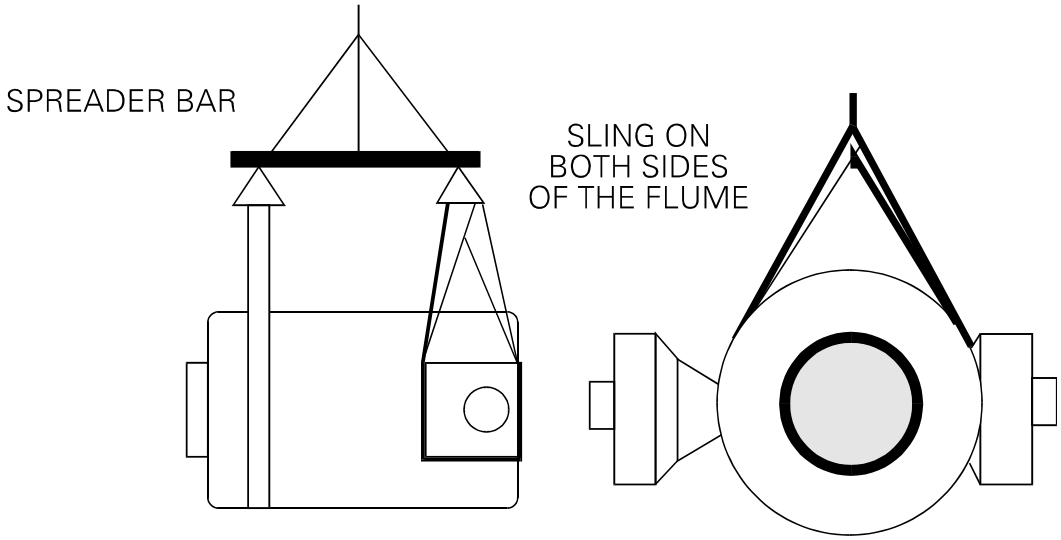
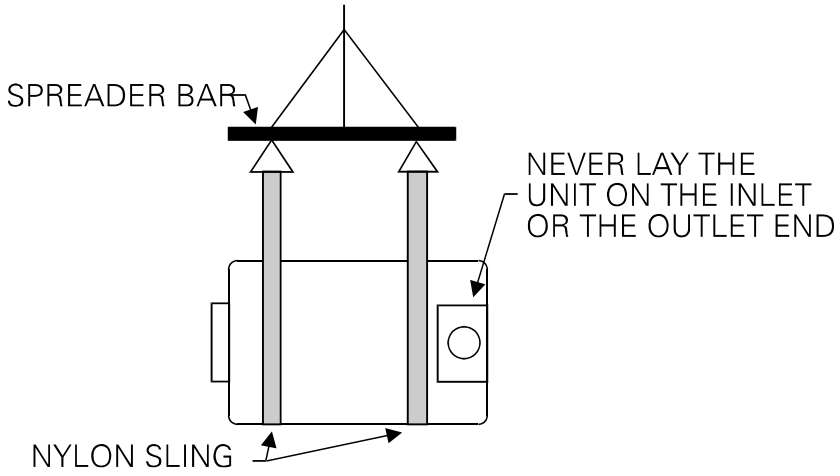
HANDLING MANHOLE WITH LARGE FLUME



HANDLING MANHOLE WITH SMALL FLUME



Site Preparation

The site must be excavated at least wide enough to accommodate the Metering Manhole structure and provide for safe working conditions for the installation personnel. All OSHA regulations for below grade construction must be followed.

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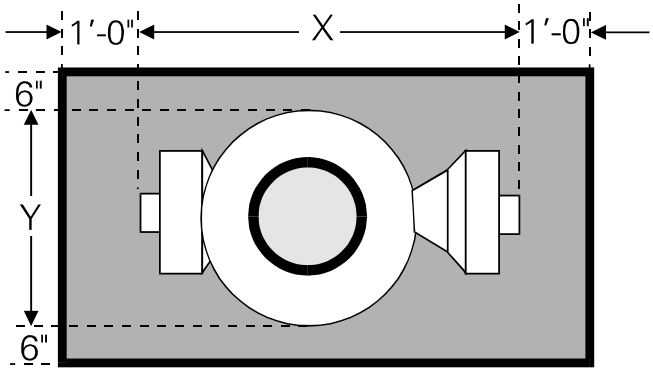
A concrete pad must then be poured to provide a smooth level surface for the Metering Manhole to rest. The concrete pad should be no less than 6” thick and should be reinforced according to typical construction specifications. The concrete pad must be constructed of 4000 psi concrete and be level within 1/8” over the entire pad.

Using the recommended concrete pad size and thickness with the correct anchor system and completing internal manhole grouting will protect a manhole of up to 20'-0" in length from normal uplift pressures. The project Engineer should always verify size and weight of typical deadman ballast for site conditions.

The drawing below shows the basic recommended pad size.

METERING MANHOLE WITH LARGE FLUME



CONCRETE PAD
MIN. 6" THICK

Setting the Metering Manhole

Before lowering the Metering Manhole onto the pad, the pad should be inspected to make sure it is level within 1/8” in all directions. If the pad is not level it should be leveled using a non-shrink grout.

If the piping is going to be connected with neoprene boots, they should be installed on the Flume pipe stubs. It should be noted that a the maximum pipe slope entering the manhole be 2%. The pipe slope leaving the manhole should be equal to of greater than the slope entering the manhole.

One inch thick EPS Board can be placed over the slab be and positioned so the Manhole will rest directly on the board. However this not required.

The Manhole should be lowered to the pad using nylon straps as shown on the drawing on the next page.

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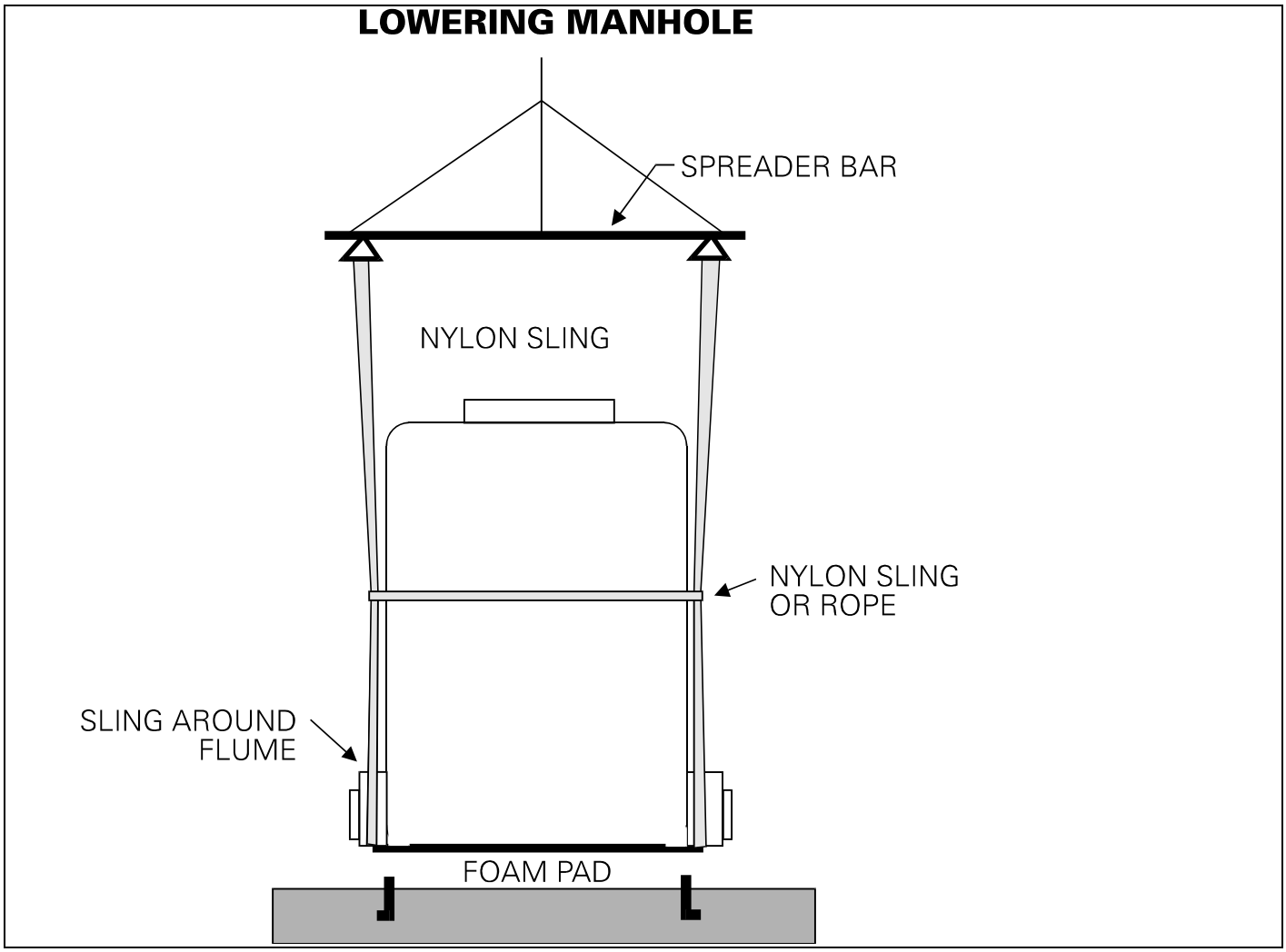

Final Setting of the Metering Manhole

The bottom flange of the Metering Manhole is pre-drilled for anchoring to the concrete pad. Hilti Chemical Anchors or Rawl Red Head Anchors are recommended. The Anchors should be 304 stainless steel.

When placing Metering Manhole structures with large Parshall Flumes there will be a void or space between the exposed floor of the flume and the pad. Once the Manhole is anchored in place this void should be completely filled with a non-shrink grout.

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The final step before back filling is to grout the inside of the Metering Manhole. This requires that the void between the manhole wall, floor and the flume be filled with a non-shrink grout to the top of the Flume flange. The interior wall of the Flume should always be supported with reshoring to insure that the Flume does not deform during grouting. Design flume wall shoring to handle full hydrostatic head on the outside wall. Grouting should be done in lifts of 6" to 8" and allowed to set prior to install the next lift.

Back fill as soon as possible after the “Final Setting “step is complete. Never allow water run off to accumulate in the excavated area.

Only washed, round 1/4” to 3/8” natural fill material should be used. This fill material should be placed evenly around the manhole in lifts of about 12”. Each lift should be compacted. Care should be taken to insure that the Manhole structure is not damaged.

The drawing below depicts this operation.

FINAL BACK FILL