

SECTION 11178 - VERTICAL FIBERGLASS PUMPS

City of San Diego, CWP Guidelines

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

- A. The WORK of this Section includes providing fiberglass body type, vertically mounted, centrifugal pumps with bottom suction and flanged top discharge and all appurtenances, for application as chemical sump pumps.

1.2 RELATED SECTIONS

- A. The WORK of the following Sections applies to the WORK of this Section. Other Sections of the Specifications, not referenced below, shall also apply to the extent required for proper performance of this WORK.

- 1. Section 11175 Pumps, General

PART 2 - PRODUCTS

2.1 PUMP NAME: [] (P-[] through P-[])

- A. **General:** Vertical corrosion-resistant pumps shall conform to the following requirements:

- 1. Number of pumping units - []
- 2. Location - []
- 3. Service - []
- 4. Operation (hours per day) - []
- 5. Drive - Constant speed

- B. **Operating Conditions:**

- 1. Capacity at design point (gpm) - []
- 2. Pump head at design point (TDH-ft) - []
- 3. Liquid to be pumped - []
- 4. Size of solids to pass (in. dia.) - []
- 5. Specific gravity of liquid - []
- 6. Liquid temperature (degrees F) - []

- 7. pH of liquid - []
- 8. Min pump efficiency at design point (percent) - []
- 9. Max pump speed (rpm) - []
- 10. Max motor speed (rpm) - []
- 11. Min motor size (hp) - []

C. Pump Dimensions:

- 1. Length from base plate to suction bell (feet and inches) - []
- 2. Impeller diameter, min. (in) - []
- 3. Size of discharge flange (in) - []
- 4. Discharge flange rating (psi) - []
- 5. Size of sump (in):
 - Length - []
 - Width - []
 - Depth - []

2.2 PUMP REQUIREMENTS

A. Construction:

- 1. One-piece casing, cover and bearing holder - Vinyl ester resin fiberglass reinforced plastic
- 2. Impeller, semi-open or shrouded design, with pump out vanes, relief holes, and Teflon shaft seal - Vinyl ester resin fiberglass reinforced plastic
- 3. Impeller adjustment - From mounting plate above
- 4. Flanged shaft column and discharge column - Vinyl ester resin fiberglass reinforced plastic
- 5. Mounting plate with corrosion-resistant vapor barrier - Heavy duty vinyl ester resin fiberglass reinforced plastic
- 6. Pump shaft - [Type 316 stainless steel] [Hastelloy C] [Titanium]

- 7. Shaft bearings - Axially-split PPS sleeve bearings, at max 30-inch spacing, and ball thrust bearing
 - 8. Shaft bearing lubrication - Solenoid-controlled water lubrication
 - 9. Thrust bearing lubrication - Grease lubricated
 - 10. Motor coupling - 3-piece spacer coupling
 - 11. Basket strainer (suction) - Fiberglass
 - 12. Hardware below mounting plate - [Type 316 stainless steel] [Hastelloy C] [Titanium]
 - 13. Sumpcover and frame - Heavy-duty [steel, epoxy-coated] [fiberglass] with neoprene gaskets and stainless steel bolts and nuts
- B. **Drive:** Direct drive with vertical shaft, heavy-duty, [TEFC] electric motor, suitable for [480 volt, 3-phase, 60-Hz] power supply, complying with Section 16040.

2.3 CONTROLS

- A. The WORK of this Section includes providing a complete control system housed in a wall or pedestal mounted enclosure as indicated, to include the following for each pump:
- 1. Magnetic starter
 - 2. Disconnect switch
 - 3. Hand-Off-Remote setting
 - 4. On-Off switch at remote location]
 - 5. Pilot lights and plastic nameplates
 - 6. Low water alarm with contact and bell
 - [7. Electric alternator]
 - 8. Level control float or mercury switches
 - 9. Alarm reset switch
 - 10. Intrinsically safe switches shall include submersible, sealed cables and [stainless steel] [Hastelloy C] [Titanium] wall brackets
 - 11. Dry contacts for remote alarm indication
 - 12. Control and status module by the pump manufacturer

2.4 SPARE PARTS

A. The following spare parts shall be provided for each pump:

1. 2 sets all gaskets, O-rings and seals
2. 2 sets all bearings and bearing holders
3. 1 basket strainer

B. Spare parts shall be packaged and boxed as indicated in Section 11000.

2.5 MANUFACTURERS

A. Products shall be manufactured by one of the following (or equal):

1. Fybroc Division of Metpro Corporation, Series 5500, size []

PART 3 - EXECUTION

3.1 INSTALLATION

A. Pumping equipment shall be installed in accordance with the shop drawings and as indicated.

B. General installation requirements shall comply with Section 11175.

**** END OF SECTION ****