

Recommended Specification

Heat Tracing of Crosslinked and Linear Polyethylene Storage Tanks

1.0 GENERAL

- 1.1 Tank shall be electrically heat traced to ensure that the contents are maintained at _____ ° F
- 1.2 Heat loss calculations shall be based upon a minimum ambient temperature of _____ ° F
- 1.3 The tank shall be insulated with a 2 inch layer of foamed polyurethane insulation
- 1.4 The tank location is (indoors or outdoors) _____ and exposed to _____ mph wind
- 1.5 The area surrounding the tank is (non hazardous or hazardous) _____
(Define Class, Division and Group for all hazardous area applications)

2.0 HEATING SYSTEM

- 2.1 The tank shall be heated by using one or more silicone pad type heaters.
- 2.2 Each silicone pad heater shall operate on 120 vac single phase.
- 2.3 Silicone pad heaters shall be of the low watt density design with a maximum power density of 0.5 watts/sq.inch. *Power density levels above 0.5 watts/sq.inch can be potentially harmful to the tank structure and are unacceptable.*
- 2.4 Silicone pad heaters shall incorporate an aluminum ground shield to fully comply with Article 427-23 (b) of the National Electric Code.
- 2.5 Overtemperature operation of the silicone pad heater shall be prevented by the use of an overtemperature cut out switch that is an integral part of the heater construction. This cut out switch shall be factory set to open at 175° F.
- 2.6 Heating pad cold leads shall be 16 AWG, 3 conductor, silicone rubber insulated with nickel plated copper overbraid.
- 2.7 Heater terminations shall be factory made and potted within a metal connection box.
- 2.8 Heating pads shall be supplied with adhesive backing and “peel off” protection film, such that the heater can be directly bonded to the tank surface.
- 2.9 Heating pads shall be Factory Mutual Approved, SilcoPad type SP 210 and SP 420 as manufactured by HTD Heat Trace, Inc, Whitehouse, NJ.

3.0 CONTROL SYSTEM – Non Hazardous Installations

- 3.1 The tank heating system shall be controlled by one NEMA 4X electronic controller
- 3.2 The controller shall incorporate two electronic thermostats, switching the heating system via one Solid State Relay.
- 3.3 The primary thermostat shall be set to control the desired product temperature as specified in 1.1

- 3.4 The secondary thermostat shall be configured and wired to provide overtemperature protection for the total heating system. This thermostat shall be set at 150° F.
- 3.5 Temperature sensing shall be performed by two type “J” thermocouples, with FEP insulated leads and stainless steel overbraid.
- 3.6 Control enclosure shall provide sufficient terminals for all heating pad and power connections
- 3.7 Temperature control for non hazardous installations shall be type 2SPCP Controller as manufactured by HTD Heat Trace, Inc. Whitehouse NJ.

4.0 CONTROL SYSTEM – Hazardous Area Installations.

- 4.1 The tank heating system shall be controlled by one modular controller constructed for use in Class I, Div 2, Group B, C, D, Class II, Div 2 and Class III Div 2 hazardous areas
- 4.2 The controller shall incorporate two NEMA 7, bulb and capillary style thermostats with heavy duty, 22 amp, rated contacts
- 4.3 The primary thermostat shall be set to control the desired product temperature as specified in 1.1
- 4.4 The secondary thermostat shall be configured and wired to provide overtemperature protection for the total heating system. This thermostat shall be set at 150° F.
- 4.5 Thermostat sensing bulb and capillary shall be stainless steel
- 4.6 Heater and power connections shall be completed inside of a NEMA 4X junction box. Connections and wiring between the thermostats and heater junction box shall be protected by rigid conduit, complete with seal off fittings and sealing compound as per hazardous area wiring requirements.
- 4.7 All components listed from 4.1 to 4.6 shall be factory mounted to a ¼ inch thick FRP mounting plate to provide one modular, easily installed control package.
- 4.8 Hazardous area controller shall be type 2HSPCP Controllers as manufactured by HTD Heat Trace, Inc. Whitehouse, NJ