

SPECIFICATION GUIDELINE

GREASE LINE FLOW

MAINTENANCE SYSTEM



PRODUCTS

MANUFACTURER

- Subject to compliance with requirements to provide electric heat tracing components from this list of pre-approved vendors.

- Manufacturers:
 - RAYCHEM from nVent (USA).

SELF-REGULATING HEATING CABLES

- Self-regulating heating cable shall vary its power output relative to the temperature of the surface of the pipe or the vessel. The cable shall be designed such that it can be crossed over itself and cut to length onsite, for ease and accuracy of installation.
- Self-regulating heating cable shall be designed for a useful life of 20 years or more with "power on" continuously, based on the following useful life criteria:
 - Retention of at least 75% of rated power after 20 years of operation at the maximum published continuous exposure (maintain) temperature.
 - Retention of at least 90% of rated power after 1000 hours of operation at the maximum published intermittent exposure temperature. The testing shall conform to IEC 216-1 Part 1.
- Products to be warranted against manufacturing defects for a period of 10 years.
- All cables shall be capable of passing a 2.5 kV dielectric test for one minute after undergoing a 0.5 kg-m impact (BS 6351, Part 1, 8.1.10).
- All products to be tested to and compliant with IEC62395, and accredited by a 3rd party compliance agency.

GREASE LINE FLOW MAINTENANCE SYSTEMS

- The heating cable shall consist of two 1.2-mm² or larger nickel-plated copper conductor wires embedded in a self-regulating polymeric core that controls power output so that the cable can be used directly on plastic or metallic pipes.
- A ground-fault protection device set at 30 mA, with a nominal 100-ms response time shall be used to protect each circuit.
- The heating cable shall have a tinned copper braid with a resistance less than the heating cable conductor wire resistance. The braid shall be protected from chemical attack and mechanical abuse by a modified polyolefin outer jacket. In addition, to protect the heater core from chemical ingress common to grease line heating, the primary jacket of the heating cable must be of a fluoropolymer material.

- Electronic controllers:
 - Adjustable temperature range: 0°C to 150°C.
 - Max. switching current 25 A, 250 VAC.
 - Alarm relay: 2 A voltage free with indication of sensor errors, voltage errors and low or high temperature alarm.
 - Display for visual indication of parameters.

TERMINATIONS

- All connection components used to terminate heating cables, including power connectors, splices, tees, and connectors shall be approved for the respective area classification and approved as a system with the particular type of heating cable in use. Under no circumstances shall terminations be used which are manufactured by a vendor other than the cable manufacturer.
- In order to keep connections dry and corrosion resistant, components shall be constructed of nonmetallic, electrostatic, charge-resistant, glass-filled, engineered polymer enclosure rated IP 54. The component stand shall allow for up to 100-mm of thermal insulation.
- Terminals shall be spring clamp wire connection type to provide reliable connection, maintenance-free operation, and ease of reentry.
- Components shall also be rated to a minimum installation temperature of -20°C.

EXECUTION

INSTALLATION

- Provide and install the system in accordance with the plans and specifications. Upon completion, the Contractor shall certify the installation.
- Installation of equipment and devices that pertain to other work in the contract shall be closely coordinated with the appropriate subcontractors.

TESTING AND COMMISSIONING:

- Preliminary Tests:
 - Upon the completion of the installation, the system shall be subject to functional and operation performance tests.
- Acceptance Test:
 - Provide the service of competent, factory - trained engineer or technician authorized by the manufacturer of the electric heat tracing components to technically supervise and participate during all of the adjustments and commissioning of the system.

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