

**DIVISION 07 – THERMAL AND MOISTURE PROTECTION**  
**07 70 00 ROOF AND WALL SPECIALTIES AND ACCESSORIES**  
**(FINAL VERSION CONVERTED TO INDIVIDUAL CSI SECTION)**

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**PART 1 - GENERAL**

1.01 SUMMARY

A. Roofs shall be protected in the following manner:

1. Wherever it is required for service personnel to walk on roof decks, install 1/2 inch walking pads compatible with the roofing material.
2. Where ice could fall from eaves above to roof below:
  - i. Provide extra protection on lower roof by installing compatible walking pads.
  - ii. Post a sign warning of falling ice hazard.
3. Install on eaves and gutters a heat trace cable which is thermostatically controlled (integral thermostat not acceptable) on separate circuit with breaker at branch distribution panel and remote ready/operating indicator lights. See details below.

B. Roof-mounted Piping, Electrical, and Mechanical Installation:

1. Pipes, conduit, or other non-continuous pipe or equipment anchoring and support systems shall be closed-cell polyethylene support.

C. Roof-mounted Equipment:

1. Any roof-mounted equipment shall be placed such that it rests on galvanized steel support beams.
2. Do not design or construct roof wells for roof-mounted equipment.
3. The following restrictions apply if a 42" parapet is not present on the roof (see section 07 00 00):
  - i. Roof-mounted equipment shall be situated such that all service access is further than six feet (6') from the edge of the roof.
  - ii. Any service access walkway required within six feet (6') of the edge of the roof shall be provided with guardrails in accordance with WSU Environmental Health and Safety (EH&S) Fall Protection Standards.

D. Skylights: Do not specify without approval from the WSU Project Manager. If skylights are allowed, install fall protection (i.e., guardrails) around the perimeter of the skylight.

E. Access Hatches

1. All access hatches shall be safely oriented such that, when opened, the user is not facing the edge of the roof.

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2. If the hatch opens onto the roof with egress from a ladder:
  - i. Provide a tie-off in the area at the top of the ladder if the hatch is locked.
  - ii. Ensure the ladder meets current ANSI standards for fixed ladders.
3. The following restrictions apply if a 42" parapet is not present on the roof (see section 07 00 00):
  - i. No roof-mounted access hatches shall be installed within six feet (6') of the edge of the roof or parapet.
  - ii. On sloped roofs, install a tie-off at the exit point from the hatch.
  - iii. Ensure the hatch is designed to fully open (to a vertical status) and a grab bar meeting fall protection standards is present, extendable to 42" above the roof.

**F. Heaters and Heat Trace**

1. Heaters shall be parallel self-regulating with a radiation cross-linked heating core extruded continuously over two parallel bus wires. The heating cable shall vary power output inversely with temperature such that power output decreases as temperature increases. Constant watt output cables are not acceptable.
2. Heater construction shall include:
  - i. Radiation cross-linked heating core
  - ii. Water proof polyolefin jacket
  - iii. Tinned-copper braid for ground path
  - iv. Cables with PVC jackets are not acceptable.
3. The heater shall deliver a nominal power output of 8 watts per foot in drains, ice, and snow.
4. Breaker sizing shall be based on a heater start up temperature of 0°F.
5. Heater cable shall be powered at designated voltage without use of transformers.

**PART 2 - PRODUCTS**

**2.01 HEATERS**

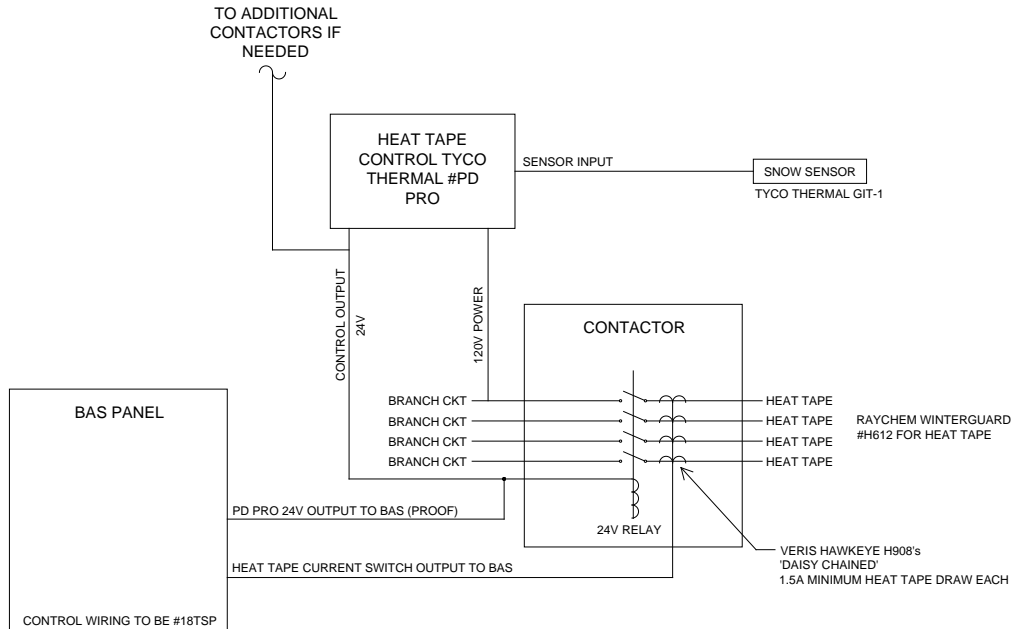
- A. Heaters shall be Raychem Wintergard H612 or approved equivalent.
- B. Heating Cables, Control Panels and Control Devices shall provide a 10-year manufacturer signed warranty.

**2.02 CONTROLS & MONITORING**

- A. Local controller shall be Tyco Thermal PD Pro with a Tyco Thermal GIT-1 snow sensor.

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B. Monitor PD Pro output utilizing the building BAS panel. Monitor on/off status of heat tape utilizing Veris Hawkeye H908 current switches connected to the building BAS panel. See diagram below:



**END OF SECTION**