

Hybrid HWAT System – Heating on Rigid Plastic Pipes

APPLICATION DESIGN NOTE

The nVent RAYCHEM Hot Water Temperature Maintenance (HWAT) system incorporates nVent RAYCHEM HWAT-R2 or P1 heating cable, the nVent RAYCHEM HWAT-ECO-GF or the ACS-30 multi-point controller. These controllers can adjust the power output of the HWAT heating cables to compensate for the poor heat transfer of plastic pipes, and maintain the correct water temperature.

Due to the increasing cost of copper, and in regions where pipe corrosion is a concern, plastic pipes are becoming more common in hot water distributions systems. Plastic pipes approved for use with HWAT heating cables include CPVC, rigid PEX and PEX tubing (fixed in place and supported no greater than every 32 inches along its length). HWAT systems should not be installed on un-supported PEX or nylon tubing due to the fact that frequent flexing could reduce the power output of the cable.

Use the following guidelines to install and operate HWAT heating cable on approved plastic pipe:

1. Secure the HWAT heating cables to the plastic pipe with aluminum tape continuously along its length, as shown in Fig. 1.

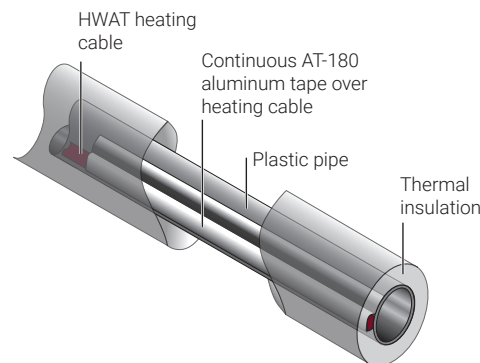


Fig. 1 HWAT heating cable installed with aluminum tape

2. To maintain desired water temperature on approved plastic pipes, adjust the temperature controllers as follows:

a. HWAT-ECO-GF:

Set the "Power Correction Factor" in the HWAT-ECO-GF menu to the values shown in Table 1.

Table 1 Plastic pipe power correction factors

Heating Cable	Power Correction Factor
HWAT-P1	1.16
HWAT-R2	1.25

b. ACS-30 controller:

Select "Plastic Pipe" in the HWAT circuit set up menu. This setting automatically applies the same "Power Correction Factors" shown in Table 1.

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