POTTER®

Memorandum

Date: 11/24/03

Subject: Friction Loss Waterflow Switches

The May 2002 edition of NFPA 13, 14.4.4.5 (1) requires that the friction loss across vane type waterflow switches 2 inches and smaller be included in the fire sprinkler hydraulic calculations. As each community, County, State or local AHJ adopts this standard we can expect to receive telephone calls related to this topic. Our products are manufactured and tested to UL Standard 346.

UL 346

33. Hydraulic Friction Loss Test

"33.1 The head loss due to hydraulic friction in a waterflow indicator of a pipe size of 4 inches or less shall not exceed 3 psig (20.7 kPa) at a flow rate that will result in a velocity of 15 feet per second (4.6m/s) in the full-size pipe connection to a valve. For a size exceeding 4 inches, the head loss shall not exceed 1 psig (6.9 kPa) at the given flow rate."

In summary, when Potter is asked about friction loss across a vane type waterflow switch our answer is 3 psig for waterflow switches 4" through 1" and 1 psig for waterflow switches 5" through 10". This response is consistent with the requirements of NFPA 13, 14.4.3.1.1 "Table 14.4.3.1.1 shall be used to determine the equivalent length of pipe for fittings and devices unless manufacturers test data indicate that other factors are appropriate."

This memorandum is not confidential and may be distributed as needed.

Thanks,

Mike Cabral
Product Manager - Sprinkler
Potter Electric Signal Company
2081 Craig Road
St Louis, MO 63146
Phone 800-325-3936