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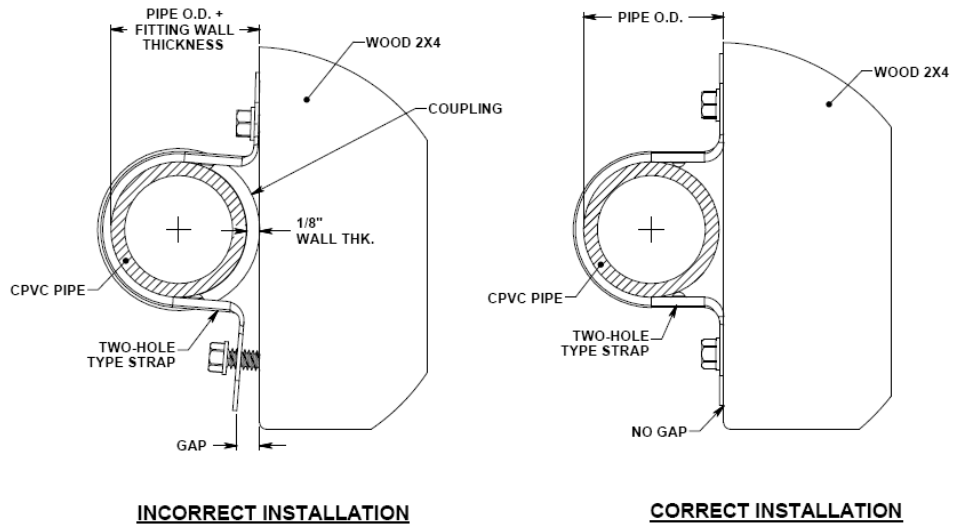
Use of Two-Hole Strap Style Hangers in Combination Steel and CPVC Plastic Fire Sprinkler Systems

There have been recent investigations in the Fire Sprinkler industry related to the performance of combined steel pipe and CPVC plastic pipe fire protection systems. In a very small number of installations these combination steel and plastic pipe systems have been shown to exhibit environmental stress cracking (ESC) of the CPVC pipe over time. This has been primarily observed in those cases where the steel pipe was treated with certain anti-MIC coatings. Steel pipe hangers have also been cited as a potential contributing factor to the development of ESC in these combination systems where certain anti-MIC coatings have been applied to the steel pipe.

TOLCO is the original designer and manufacturer of hangers specifically UL Listed for the installation of CPVC piping systems. We have manufactured UL Listed hangers for CPVC piping systems since 1989. Based on our long experience and partnership with the manufacturers of CPVC pipe and fittings, it is our opinion that due to the similarities of all CPVC two-hole strap type hangers that the recommendation below be followed when installing any manufacturer's two-hole strap style hanger.

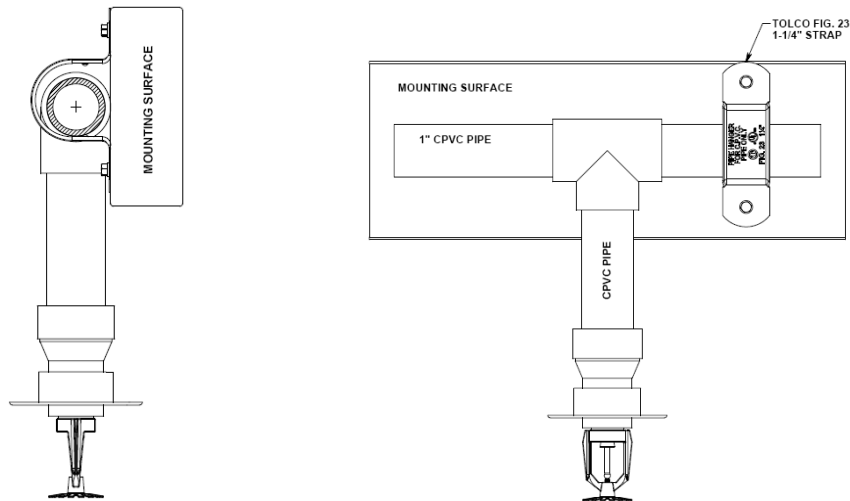
In some installations CPVC plastic pipe is mounted to a surface where the pipe fittings or some other factor causes a small offset from the wall or ceiling. Typical two-hole strap hangers are designed to install the pipe flush to the mounting surface. In the case of the presence of a small offset it will be noticeable that the feet of the hanger will be unable to be flush to the mounting surface. This will be particularly noticeable following the installation of the first screw and prior to the setting of the second screw. (See Drawing A below) In those situations where a loose fitted hanger does not have both feet lay flat against the mounting surface before the screws are embedded we recommend that the two-hole strap type of hanger not be used due to the potential to cause excessive stress to the CPVC pipe.

Drawing A



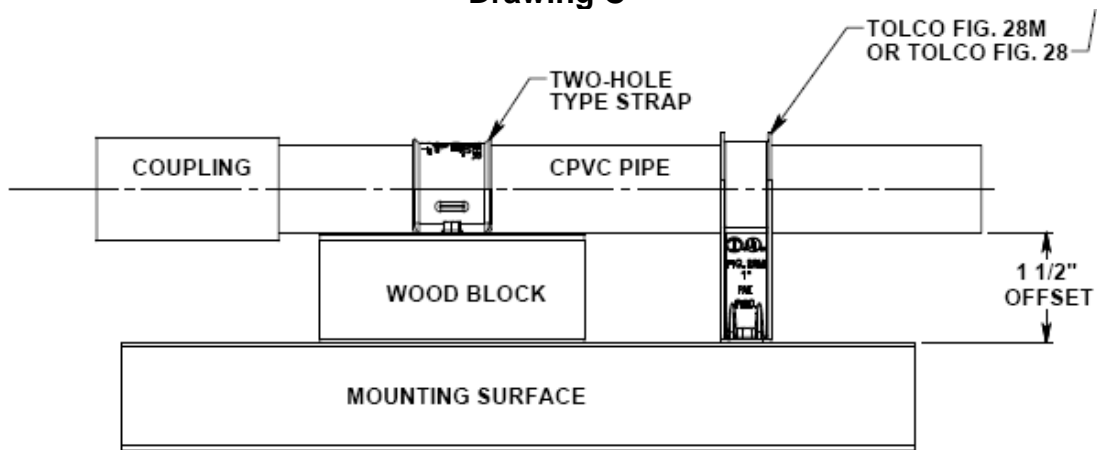
Underwriters' Laboratories has allowed the use of the next larger sized two-hole strap to be used in these cases. The larger diameter of the hanger relieves some of the stress on the pipe. (See Drawing B)

Drawing B



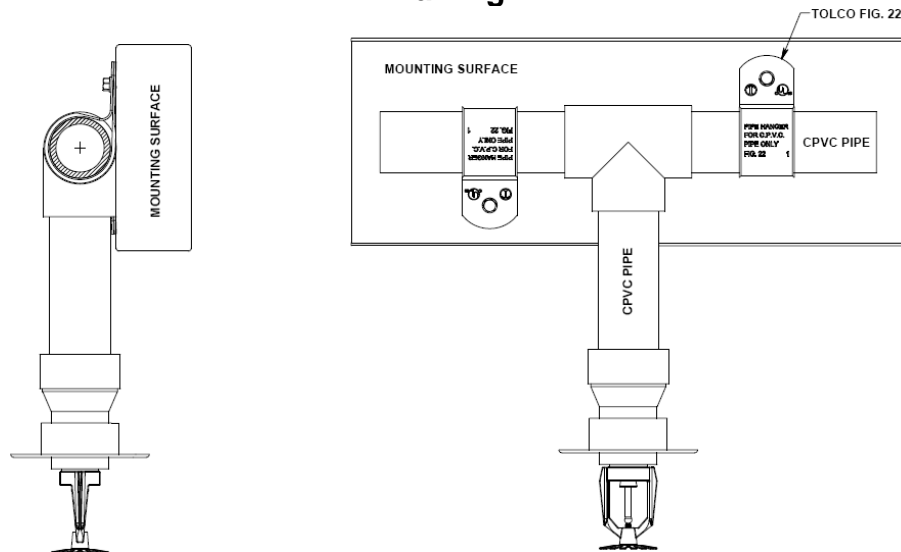
As an alternative to a standard two-hole strap style installation, the use of either wood blocking with a two-hole strap hanger, like the TOLCO FG 23 or a UL Listed Offset Hanger like the TOLCO FG 28 or 28M, would avoid causing any excessive stress to the CPVC pipe. (See Drawing C below)

Drawing C



Another possible alternative installation when attaching to a vertical structure or wall mount is a one-hole strap like the TOLCO FG 22. This hanger allows for the gap between the pipe and the mounting surface with minimal stress on the pipe. (See Drawing D below)

Drawing D



It is the intention of TOLCO to provide only quality products. Our installation guidelines are intended to promote good installation practices in the Fire Sprinkler Industry.

If you should have any questions or input regarding this issue we are always interested in hearing from our valued customers and industry partners. Please feel free to contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "Greg Shaughnessy", with a long horizontal flourish extending to the right.

Greg Shaughnessy
Director – TOLCO Marketing