Hanger Listing is Specific

Proper Application is Important

© 2016 Kraig Kirschner
AFCON

The tenets of proper hanger installation are integral to NFPA 13 sprinkler system performance. Accordingly, the standard specifies hangers that are listed specific to their application, corresponding to pipe size and appropriate to construction geometry. Hangers shall uniformly support, mount and permanently retain system pipe per NFPA 13 engineered drawings. Accordingly, hangers shall be installed to minimize stress on the system pipe including its fittings and threads.

Since the hanger transitions system geometry to building geometry, design and ability are interdependent. The function of a listed hanger corresponds to mounting methodology, mounting distance, pipe size and fastener type, thus hanger design features are critical and unique to its performance.

Never deform a hanger as this will compromise its listing, function and strength. Damage to the system pipe or its hanger during installation is also unacceptable. Improper hanger installation may damage the pipe it supports and thus jeopardize sprinkler system performance. As an example, due to the fragile nature of CPVC pipe, hangers are required with unique features for its installation.

Also, installing an oversize ring hanger on a smaller diameter system pipe is poor craftsmanship. The smaller system pipe contact surface will increase the compressive load on the larger band hanger bend radius, resulting in elongation and deformation of its geometry. Further, any resultant increase in pipe clearance within the larger hanger may negate NFPA 13 restraint required to address system pipe flexure, sprinkler orifice pressure or horizontal and vertical seismic force.

Hanger application scenarios for mounting to a structural surface vary by system pipe orientation and its distance from the hanger mounting surface. The hanger mounting distance variables; are pipe against, pipe adjacent with fitting against and piping offset.

When installing sprinkler pipe against a solid flat surface, the hanger mounting scenario is “pipe adjacent with fitting against”. Never use a flush mount hanger in this scenario as the pipe fitting outside radius dimension exceeds the flush mount hanger centerline pipe dimension. The resulting dimensional difference must be remedied to relieve stress on the pipe, fitting and hanger assembly. Shimming or blocking of flush mount hangers to match the correct corresponding pipe dimension is common practice in NFPA 13 systems. Also, many contractors choose offset hangers to eliminate any dimensional conflict which compromises maintaining a uniform centerline.

Please remember, change not constrained by prudence may produce unpredictable consequences. Unpredictable consequences threaten orderly results and ultimately place

at risk the very principals of permanence, robustness and reliability required of NFPA 13 hangers that support this emergency system.

Kraig Kirschner is a third generation fire sprinkler contractor and a journeyman fitter. He is a Principal Member of NFPA 13 - Hanging and Bracing Technical Committee and serves on Standard Technical Panels of UL 203, UL 203A and FM 1950. Kraig is a Life Member of the National Fire Protection Association and was named Person of the Year in 2009 Fire Protection Contractor Magazine. He holds dozens of patents that enhance the installation and application of hangers and sway braces.