AEROFLEX

TECHNICAL BULLETIN

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Pipe Hanger Supports Critical to High-Performance Insulation System Design

A common failure point of mechanical insulation on cold (below-ambient) piping systems is at the hanger locations due to compression of insulation subjected to inadequate support or no insulation at all (thermal bridging). Symptoms include decreased thermal efficiency, condensation, water damage below, corrosion under insulation (CUI) and mold growth.

Rigid pipe supports designed to handle the weight of loaded pipes, system movement/vibration and preventing pipe stress or cracking are the solution but come in many different forms.

While the lowest-cost option are wood blocks with insulation protection shields (saddles), wood is not recognized by ASHRAE because it will burn in plenum-rated spaces, absorbs condensation (hygroscopic) and serves as a food source for mold growth.

Rigid closed-cell insulation types, such as cellular glass, phenolic foam, polyisocyanurate, and calcium silicate can be fabricated and installed with or without a vapor retarder and saddle depending on the insulation manufacturer's recommendation.

Closed-cell flexible elastomeric foam insulation is commonly specified for cold piping systems due to its closed-cell structure and built-in vapor retarder. U.S. manufacturers offer proprietary rigid closed-cell inserts designed to handle active piping systems as a single-source solution.

AEROFLEX® Aerofix® is a lightweight, high-compressive strength, polymeric rigid pipe support lined with closed-cell EPDM rubber and encased in a zero-perm, weatherproof, corrosion-proof EPDM polymer membrane and high-performance pressure-sensitive closure system. Aerofix® provides a fully hermetic system solution through pipe hanger locations when adhered to adjoining AEROFLEX® EPDM pipe insulation. Supplemental vapor retarders and saddles are not required. Aerofix® is also compatible with other pipe insulation types such as fiberglass and closed-cell types mentioned above.

Proper installation is critical to success. Due to the nature of active piping systems (expansion & contraction, temperature & load fluctuations, vibration), Aerofix® must always be directly adhered with an AEROFLEX® special-purpose contact adhesive to adjoining insulation, thus providing a vapor seal to prevent heat gain, condensation and corrosion under insulation. AEROFLEX® Protape® should also be applied over glued seams to provide a secondary zero-perm vapor barrier.

When AEROFLEX® EPDM insulation is installed with other pipe supports, or Aerofix® with other insulation products, it is imperative to glue AEROFLEX® insulation directly to the pipe supports (or Aerofix® to other insulation types) with an AEROFLEX® adhesive to provide a vapor seal. If this is not executed, piping will likely experience heat gain, condensation, corrosion or mold growth. Whenever possible, Protape® should be applied over all glued seams as a secondary level of protection against vapor drive.

To learn more about Aerofix®, click here.