

Duct Work Insulated with Spray Polyurethane Foam

In response to the demand for more energy efficient, durable and healthier homes, builders and designers now have an innovative yet proven system in Sprayed Polyurethane Foam (SPF) to create a superior building envelope to act as the basic building block to meet that demand.

Recent changes to the Duct Insulation section of the International Residential Code (IRC) allows for the use of spray polyurethane foam insulation, such as Comfort Foam and Spraytite, in direct contact with ductwork in residential construction. The 2007 Supplement contains changes to the 2006 IRC Chapter 16, under Section 1601.3, as an exception to allow for spray polyurethane foam as a duct insulation material when it meets the requirements of Chapter 3, Foam Plastic section R314.

The use of closed-cell spray polyurethane foam (SPF) brings advantages as an insulation over duct work, not only as a highly efficient insulation, but also offers low vapor permeance and control over condensation in and on these ducts. In addition, the SPF acts as an air barrier to control air leakage and enhance the performance of the ductwork, thereby allowing more efficient operation of the HVAC system. Due to these benefits, when SPF is used to insulate over the ductwork, the additional requirements to seal joints and seams, as well as include a vapor retarder have been eliminated.

Recent released news from the Consortium for Advanced Residential Buildings (CARB) group highlights the advantages gained in HVAC and overall building performance when the attic ductwork is buried under spray foam insulation. As a US Department of Energy Building America team, CARB is working in conjunction with Paragon Builders, and have assisted them in making engineering and product refinements to help Paragon achieve a 40% savings over the Building America benchmark. One modification helping them accomplish this in their homes includes the use of ductwork in the attics buried within BASF PFE's Comfort Foam closed-cell SPF insulation. The recent code revisions to the International Residential Code help support these innovative uses of spray polyurethane foam to create high performance buildings.

As with all BASF PFE spray foam applications in attics and crawlspaces, applications should be limited to 2" thick per pass, with time allowed to cool in between passes, and the SPF should be protected in accordance with the code-mandated thermal or ignition barrier. Check with your local building code department for final determination. To receive a copy of the duct insulation section of the 2007 IRC Supplement, please call 800-706-0712.

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