

Boosting Thermal Performance For A Reroof

By Ram Mayilvahanan

As with new construction, the insulation chosen for a reroofing project can mean a difference of tens of thousands of dollars in material and labor. With the range of rigid foam insulation products available, it is possible for facility managers (fms) to reduce costs substantially without sacrificing thermal performance. The key is understanding product options for insulation, and the physical properties of these options.

Many reroofing jobs involve a recover of an existing metal roof. While fms can save labor and disposal costs by leaving an existing metal roofing in place, the standing seams make it difficult to create a smooth surface for the recover. One solution can be found with flute-fill EPS (expanded poly-

styrene) insulation. A number of rigid foam insulation manufacturers offer these products to fit the spaces between a metal roof's flanges. And an advantage of EPS over other insulations is that it can be custom cut to fit any profile or size of flute, with high compressive strength products also available for use in high traffic conditions.

As these flute-fill insulations are lightweight and fit accurately into the flute, roofing crews can readily lay such products into a metal roof's channels, providing a stable, even base for additional roof layers. And because the flute-fill insulation fills the flutes completely, heat transfer into or out of a building is blocked.

Another common challenge of reroofing is the need to install a large quantity of

smaller insulation boards over the existing roofing. This can be labor-intensive as crews must carry and place many separate boards. One way to alleviate this is to use fanfold panel bundles. Economical, code approved EPS fanfold bundles are available in accordion style sets. By working with these bundles, crews can handle more material faster.

Such products also help prevent thermal leakage by avoiding multiple joints. Further, fanfold products come with polymeric and metalized facers that provide enhanced moisture protection.

Another area where the choice of insulation can dramatically impact a reroofing budget is the conversion of a flat deck to a positive sloped roof. In such cases, the slope is often built up with insulation. Since most rigid foam insulation is available in sheets no more than a few inches thick, achieving the necessary slope can require stacking numerous sheets on top of one another. EPS insulation is available up to 40" thick and can be pre-cut to virtually any slope. Such tapered EPS can reduce roof insulation costs up to 30% compared to other tapered rigid foam products, through material, labor, and also adhesive or fastener savings.

Insulation choice also impacts a facility's energy efficiency year after year. Often, manufacturers report only the initial R-value, when the product comes out of the factory. However, many rigid foam insulations use blowing agents that boost initial R-value, but diffuse over time, losing up to 20% of the initial R-value while in service. Fms should look at long-term R-value to ensure there is no thermal loss. In the realm of rigid foams, EPS offers high insulating R-values. And engineered EPS is a stable non-degrading product, which leads many manufacturers to provide a long-term warranty of the product's full R-value. ●

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