

# Building Best Practices

## Using Spray Polyurethane Foam Insulation



### Case Study: Meritage Homes

Meritage Homes is a recognized leader in building energy efficient homes. The company was the first national builder to certify all their new homes under the EPA Energy Star for Homes program. Meritage has also built many communities that achieve Home Energy Rating System (HERS) scores less than 40, and they introduced the first net-zero production homes in the United States. To help achieve such a high standard of efficiency, Meritage uses spray polyurethane foam (SPF) insulation in every new home they build, including Bayseal Open-Cell (OC) insulation.

“ Homebuyers are more informed now, and want to make better long term choices for their families and as an investment ”

CR Herro  
Vice-President, Energy and Sustainability  
Meritage Homes



“We’ve created a new standard for energy-efficient home building by completely redesigning how our homes operate and function. Covestro’s spray foam insulation is critical to the quality and efficiency of Meritage homes.”

These are the top three ways Meritage optimizes the energy efficiency of SPF insulation:

**House as system** – consider the home holistically rather than an assembly of many components. The home’s thermal envelope (foundation, exterior walls, windows, attic, roof, insulation), mechanical system, lighting, plumbing/water, and appliances should be planned with an understanding of their interrelation to one another.

**Attic assembly** – include the attic within the home’s conditioned space. The SPF is applied to the underside of the roof deck, which reduces openings for dirt, allergens, and pests. The mechanical system and ductwork are then within the home’s thermal envelope, which lessens the vast temperature swings that occur between winter and summer.

**Right-sized HVAC** – “Built tight, ventilate right.” Because SPF effectively helps seal penetrations within the building envelope, the HVAC system does not need to be sized up to overcompensate for possible air leakage. This allows for more consistent operation and temperature homogenization. Rather than rely on old rules of thumb, perform a Manual J8 load calculation.

Following these best practices, Meritage homeowners realize many benefits. By minimizing air and moisture infiltration, the amount of allergens entering the home can be reduced, and the likelihood of mold growth within the envelope is also reduced. The effective building envelope of Meritage homes makes it easier to maintain a constant, comfortable temperature through all seasons. SPF also offers a high degree of noise mitigation, creating a quieter indoor environment.



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