

# Synthetic Roof Underlayment: *Faster, Safer Construction—and Durability, too*

## Builder's Experience



**Challenges:** Persuading the clients to upgrade.

**Would he do it again? Yes**

### Synthetic Roof Underlayment Attributes:

-  Quality and Durability
-  Safety and Disaster Mitigation

**Builder Tips:** "Installing synthetic roof underlayment is really the same as 30-pound felt. You use the same overlap patterns and the same nailing pattern."

**Builder:**

Jobe Leonard  
Hearthstone Homes  
Dandridge, Tennessee

**Builder Type:**

Large Custom Builder

**The Technology:**

Synthetic Roof Underlayment

**The Project:**

This four-bedroom, three-bath home in Arvada, Colorado, is 4,951 square feet with five different levels of roofing.

*"Besides improving the quality of the roof, synthetic roof underlayment also gave us a reliable six-month temporary roof to keep working, even during the winter."*

– Jobe Leonard



Hearthstone Homes recommended synthetic roof underlayment for this 4,951-square-foot home in Arvada, Colorado, for better performance in snow and ice.

## LEONARD'S STORY

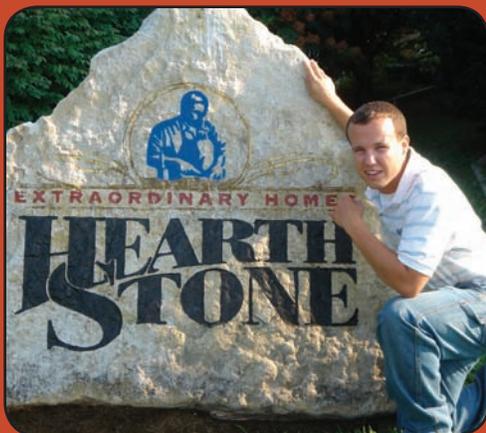
"Synthetic roof underlayment is an upgrade we offer on all of our homes," says Jobe Leonard, a Hearthstone Homes project manager. "We came across the technology while doing reconstruction work in Panama City. Due to the hurricanes and high winds, we needed something that wasn't going to blow off, and we picked up some of Grace Construction's synthetic underlayment, called Tri-Flex, at Home Depot. We liked it so much that we used it on another roof... and then another. Then we decided we needed to get in touch with the manufacturer and start offering it on all of our homes."

"We offered our client the synthetic roof underlayment because of the snow and ice in northern Colorado. We knew the roof would require something better than 30-pound felt. In this case, the underlayment also gave the home more protection during the early phases of construction in April."

## A COST SOLUTION

"The challenge when it comes to synthetic roof underlayment is cost. This is how we've approached it. When we offer upgrades, we don't charge people a percentage. With the roofing material, it costs about \$5 per 100 feet of 30-pound felt and \$14.50 for 100 feet of the Tri-Flex. Based on the more common percentage system that other homebuilders use—set at 10 percent—customers pay a \$0.50 markup on the felt and a \$1.45 markup on the upgrade. That makes the upgrade that much more expensive, even though there are no other real additional costs."

"We encourage our customers to use the best products possible by charging a flat rate based on the square footage. No matter what type of roof underlayment



Jobe Leonard has been in the homebuilding industry since 1999 and a project manager with Hearthstone Homes since 2005. Founded in 1971, Hearthstone evolved from a restorer into a premier builder of timber frame and log homes. The company builds nearly 300 homes a year across the United States.

### Why Hearthstone uses synthetic roof underlayment:

"We were looking for a better, more weather-resistant alternative to asphalt felt. Synthetic underlayment offers all of that, plus a safer material for our workers."



The Hearthstone crew had few problems—and no injuries—installing the roof covering, even with five different levels of roofing.

### TECHNOLOGY HIGHLIGHTS

This project included the following PATH-profiled technologies:

- Synthetic roof underlayment
- Structural insulated panels

you use—felt or synthetic—we charge the same flat rate on all of it. We charge for just the cost of the product and not a higher markup on top of that. That way, we get to put better materials into our homes, and in turn end up with a higher quality finished result.”

“We began offering the underlayment in fall 2005, and of the roughly 300 homes we build each year, about 5 percent use it,” Leonard says. “That’s still not a lot, but we’re hoping that as our project managers understand the benefits better, they will be able to help our customers understand them better, too.”

### THE PAYOFF

“Now, that cost difference—\$5 for 100 feet versus \$14.50 for 100 feet—may seem significant, but it only adds a few

hundred dollars more to the average roof. That’s before you add in other potential savings, such as additional material costs if the felt tears or gets damaged during windy and wet weather. Regular felt will require repair or replacement. That is not the case with synthetic underlayment. And down the road, when the homeowner might need to replace shingles, it’s possible that they won’t need to redo the underlayment. Lastly—but of great importance to our customers—you have to consider the cleanup costs with felt on timber frame and log homes,” Leonard says.

### ROOFS WRAPS

Synthetic roof underlayments mimic the attributes of housewraps, serving as a secondary weather barrier with better resistance to tearing, moisture, and ultraviolet rays than traditional roofing felt.

Synthetic underlayments typically weigh less than felt building paper, can be manufactured with an anti-slip surface, and can withstand exposure to the elements for six months.

After hurricanes ravaged the South in 2005, many homes required quick roof repair and “drying in” to minimize further damage due to water intrusion. With limited resources, contractors triaged homes, repairing the critical components and installing synthetic underlayments as temporary roofing. The underlayments performed better than the blue tarps handed out by the Federal Emergency Management Agency. In addition, the underlayment didn’t require replacement when a roofing crew eventually arrived to install shingles.

Two manufacturers, Elk and Grace, offer a Class A or B fire-rated synthetic underlayment.



With synthetic roof underlayment, the Hearthstone crew has a reliable six-month temporary roof that allows them to work through different seasons.

“There is even more impetus to use the synthetic roof underlayment on our homes because during construction, the logs and timber are exposed to the elements. The timbers are more susceptible to staining before they dry, and regular black felt can leave a black water stain, requiring a whole additional cleaning job. But you don’t have to worry about that with Tri-Flex, which can be used as temporary roofing for up to six months.”

### SIMPLE AND QUICK

“The strong shield that the synthetic underlayment puts on the roof translates into a lot of benefits to the builder,” says Leonard. “In addition to protecting the quality of the home, synthetic underlayment is a lot lighter, so it takes a smaller crew to install it. It only takes one worker to lift a 1,000-square-foot roll of synthetic, which weighs about the same as a felt roll of only 300-square-feet. The weight and ease of working with it cuts some time and money off the whole process.”

“The nice thing is that installing synthetic roof underlayment is really the same as installing felt. You use the same overlap patterns and the same nailing pattern, so there is no training involved. In fact, it goes up a little bit quicker than felt, because it’s not as slick and workers can stand on it more easily. If you have some dew outside, you don’t have to wait until the sun comes out to dry up all water for the roof to be safe to work on. In the end, it saves time and helps prevent injuries from workers slipping and falling. We probably have about one injury a year on the felt. Considering that, the synthetic roofing underlayment pays for itself pretty quickly.”

“The final result is a product that benefits both the builder and the homebuyer. There are a lot of reasons to use it that certainly justify the minimal extra expense.”

The Partnership for Advancing Technology in Housing (PATH) brings together builders, manufacturers, researchers, government agencies, and other members of the housing industry. PATH partners work to improve the quality and affordability of new and existing homes. The program is administered by the U.S. Department of Housing and Urban Development’s Office of Policy Development and Research.

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To learn more about PATH-profiled technologies, visit [www.toolbase.org/techinv](http://www.toolbase.org/techinv).



The opinions expressed in this document represent those of the builder and do not necessarily reflect the views of PATH.



Hearthstone Homes encourages homebuyers to upgrade to the underlayment for various reasons, but particularly because black felt paper can stain exposed logs and timbers and require an expensive cleaning process.