INSULATION

# Study Assesses Insulation Products' Performance


According to the Thermal Metric Summary Report, a study from Building Science Corp. (BSC), all insulation products perform equally well when properly installed and air sealed.

The final portion of the study, released in June 2015, tested the performance of various insulation materials—including fiberglass batts, closed-cell spray foam, and open-cell spray foam—in separate walls in clean, dry spaces with seasoned wood, over a range of temperatures from 144°F to –18°F.

The study found that when walls have the same R-value and are properly sealed, all insulation basically performs the same. When air sealing is not done properly and there is thermal bridging, the thermal bridging results in about a 15 percent decrease in thermal performance in all of the tested insulations, while R-value varies with temperature.

These results aren't surprising to Aaron Grin, a senior associate with BSC and one of the primary authors of the report. The study confirms what his group already knew. "When you're dealing with the exact same framing layout," Grin said, "we had a pretty good idea of how things would come out."

Insulation manufacturers drew their own conclusions. The North American Insulation Manufacturers Association released a report stating that, while equally effective, fiberglass batts are cheaper than foam: To insulate and seal a 2,300 square foot house in climate zone 4 to IECC 2012 specifications, fiberglass batts would cost $4,600, compared with open-cell ($10,350) and closed-cell spray foam ($17,250).

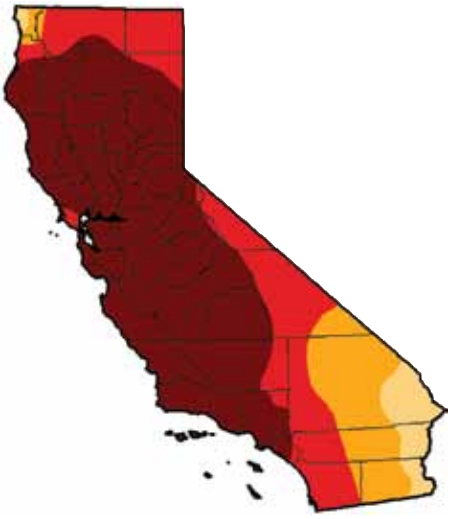
Foam backers, such as the Spray Foam Coalition, say that their products are more versatile—foam fills gaps better and is easier to install in attics and crawlspaces. Builders will

always have their own preferences among foam, fiberglass, and other materials. "There's a lot of advertising going around saying 'Our product is better than their product and this is why,'" Grin said. "But in reality, if you do a really good job of installing any one of the systems, they're going to perform quite well." (For more on insulation, see page 68.) **PB**



WATER

## Builders Adjust to California's Drought



Now in its fourth year of drought, the state of California is reeling. Rivers are drying up, wells are depleting, and grass, trees, and crops are dying.

Proactive measures are being taken to fight the drought, which has affected the entire state, with the stretch from Los Angeles to Lake Tahoe being hardest hit. California's state water board has approved emergency drought regulations that seek to cut urban water use by 25 percent; websites such as WaterDeeply.org gather the latest updates; and groups like Save Our Water provide water conservation tips.

The California Building Industry Association has also taken action. The group's president, Dave Cogdill, submitted testimony to Congress, writing to the U.S. Senate Energy and Natural Resources Committee that the state could save water if the federal government helped retrofit houses with water-efficient fixtures.

Of California's 13.6 million units of housing stock, 9.2 million units were constructed under building standards that lacked provisions for water or energy efficiency. Cogdill said in his

testimony that replacing showerheads, toilets, and faucets with low-flow models would reduce water usage in homes by up to 50 percent, which could save more than 300 billion gallons of water annually. Making these upgrades in existing homes would cost an average of less than $1,500. "We respectfully request that the federal government provide significant funding to help encourage these types of common sense drought mitigation measures," Cogdill wrote in his testimony.

Even with water conservation laws going into effect, and with other industries such as farming suffering greatly, home building is still relatively unaffected.

According to the Construction Industry Research Board (CIRB), 85,468 units were built in California in 2014. That was more than in 2013 (85,310), which was more than in 2012 (59,225) and 2011 (47,336). The number of new units is now at its highest mark since 2007, when 113,034 units were built. The CIRB says that 107,586 homes are projected to be built in 2015. **PB**

SOLAR ENERGY

## New Tariffs for Chinese Imported Solar Panels

On July 8, the U.S. Department of Commerce (DOC) imposed new punitive tariffs

on Chinese solar product manufacturers.

The ruling, which calls for antidumping duties (AD) as high as 259.9 percent and countervailing duties (CVD)

as high as 23.3 percent, was made to give U.S. manufacturers an advantage equal to its overseas counterparts.

Chinese solar panel imports represent a large share of the U.S. market. IBISWorld estimates that Chinese products make up more than 30 percent of domestic demand for solar panels. That output has driven down both the price of photovoltaic (PV) panels and panel installation.

The tariff plan was met with some disappointment.

"Keeping these stiff tariffs in place makes solar power less affordable, slows job growth, and prevents more American homes, businesses, and utilities from switching to clean solar energy," Jigar Shah, the president of the Coalition for Affordable Solar Energy (CASE), said in a statement.

Yingli, a leading solar panel manufacturer based in Baoding, China, said that the ruling gave the company the lowest combined AD/CVD tariff rate (21.73 percent) amongst its peers.

"While we are disappointed in the U.S. Department of Commerce's decision to continue placing tariffs on an industry that is the second fastest-growing energy industry in the U.S., we are now very securely positioned to succeed in the U.S. market," Robert Petrina, the managing director of Yingli Green Energy Americas, said in a statement.

Because of the tariffs, solar panel installation will be more expensive for American buyers. EnergyTrend says that Chinese PV cell makers that export their products to the U.S. will see costs rise by 10 percent.

However, despite the short-term cost increase, the price of adopting solar energy has been dropping dramatically over the last three years. According to IBISWorld, from 2012 to 2015 the average price of solar panel installation fell at a yearly rate of 12.1 percent, and installation costs are projected to continue to fall 9.1 percent each year until 2018.

The falling prices are due to imported PV cells. Imports make up more than 75 percent of the U.S. demand for solar panels, and while China is the leader of the pack, other nations such as Malaysia, Mexico, and Taiwan will earn a greater share of the solar panel market. And some Chinese manufacturers have begun to offshore production work to zero- and non-tariff countries.

IBISWorld expects solar cell imports from China to rebound in 2016. **PB**