Johns Manville
A Berkshire Hathaway Company

Insulation Intel®
PROJECT PROFILE
SUPER FIRETEMP

Structural Fire Protection, On Repeat

A premier company with 45 years of experience building firefighter training structures chooses to use Johns Manville's Super Firetemp® Use of this calcium silicate product speaks to its excellence in fire protection.

When you purposely set fire to something time and time again, you've got to have confidence that the products protecting that structure will hold up over time. That's exactly the kind of relationship that the company WHP Trainingtowers™ has with Johns Manville's calcium silicate product Super Firetemp.

WHP Trainingtowers, based in Grandview, Missouri, designs and builds towers and other buildings used by fire departments, colleges and military bases around the globe for firefighter training exercises. The structures are subjected to a lot of tough training, including fire, smoke, water and firefighting equipment.

JM's Super Firetemp products are the base for patented interlocking tiles — named Padgenite™ Interlock after WHP Trainingtowers' founder Bernie Padgett — that are then used to line the interior of training buildings, protecting the building structure from damage that would otherwise be incurred from the intentionally ignited fires.

"We feel that calcium silicate is the best solution for the fire industry, and we use the JM product because it's very dimensionally stable," said Joe Kirchner, Chief Operating Officer for WHP Trainingtowers. "These burn rooms go through rapid heating and cooling cycles, so we can't be fudging joints. Having a product that is stable is critical."

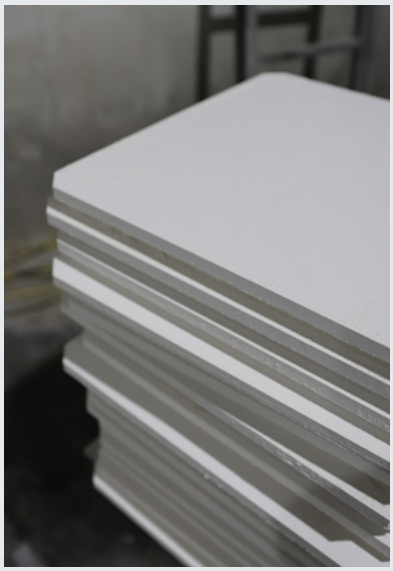
Building Reliable Structures

WHP Trainingtowers began in 1980 and its first structure, built in Alaska, is still in use, a clear testament to its strength and longevity. Although Padgenite came later, as did the use of JM, the people at WHP Trainingtowers knew from the get-go that building for the long-term was very important.

PRODUCT
Super Firetemp®

CONTRACTOR
WHP Trainingtowers™

LOCATION
Grandview, Missouri



"These structures need protection so they can have repetitive fires and not damage the structure," Kirchner said. "Also, maintenance is considered because these rooms see a lot of abuse, but customers are often focused on training. They might overlook maintenance which causes trouble down the road. We want to reduce maintenance needs, making things 'firefighter-proof' since training has the potential to damage burn rooms."

This all led to a unique way of working with and interacting with customers. Kirchner described WHP Trainingtowers as a "turnkey designer/builder/supplier/installer and beyond" company. Being involved start to finish, and after, allows issues to be addressed and gives WHP Trainingtowers the opportunity to answer questions and innovate for the future.

Years ago, the company saw the opportunity for improvements in design, which eventually culminated in the creation of Padgenite Interlock.

"The interlocking design reduces maintenance needs from previous designs, that had heat penetrating seams," Kirchner explained. "It's similar to shiplap siding. These tiles are machined with a design where each tile has a lap joint over the adjacent tile. This creates a solid barrier rather than having butted up panels with seams that heat will penetrate through."

Using Calcium Silicate and Partnering with JM

WHP Trainingtowers has been using calcium silicate for a long time, largely because of its durability. They standardized the Padgenite product with JM's Super Firetemp about five years ago because of its specific benefits.

"In the fire training industry, firefighters go in and light live fires repeatedly, so the environment of a burn room has rapid heating and cooling cycles," Kirchner said. "Heating rooms up to 1,000 degrees and then dousing them with 45-degree water multiple times in a row means the system must be forgiving to that environment. Cal sil is dimensionally stable in those conditions without much expansion and contraction. Having a product that is this stable to protect your structure is important."

Kirchner said he believes the Johns Manville calcium silicate is a "nice blend of density and surface hardness" to give fire departments something that will hold up through the repetitive trainings.

Super Firetemp is an inorganic, non-combustible, high-temperature insulation for use in fire protection systems. Composed primarily of lime, silica and reinforcing fibers, Super Firetemp is essentially dust free.

Standard Padgenite tiles are 15-inches square, and they're used to line walls and ceilings. Tiles are also cut to size in the field to line door openings and window openings for additional protection.

WHP Trainingtowers uses machinery (which runs seven days a week) to cut Super Firetemp into the interlocking tile shape of Padgenite Interlock. From there, the product is used in structures that WHP Trainingtowers builds all over the country and even across the globe.

Training structures vary greatly by customer, depending on their needs, location and any particular challenges a community faces. Most are between 1,500 and 4,500 square feet in size. They most often include one or two burn rooms on one or two floors. Buildings are also used for things like ladder work or search and rescue training, so the entire building isn't always lined with Padgenite.

"Fire chiefs will drive around their community and remember certain fires they had – what problems did they run into? And what can we do to emulate that in a safe training environment so they're prepared in the future?" Kirchner said. "We work with them in the preconstruction process, designing a solution that will maximize their training."

About WHP Trainingtowers

WHP Trainingtowers has more than 45 years of experience constructing fire training buildings and has completed more than 1,000 projects in the U.S., Canada, Europe, Asia and Australia. Their fixed or modular training towers are designed by firefighters and engineers specifically for fire training.

Padgett sold his original training tower company to Bill Jahnke, who had 28 years of firefighting experience and 45 years in construction management, making him uniquely qualified to build fire training towers. The company continues to be family-owned, with the next generation of the Jahnke family now running the day-to-day business.

For JM customer support or technical assistance, call 1-800-654-3103.

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