

Knauf Insulation Helps Fuel New Ethanol Operation





Creating New Energy and Reducing Emissions

Knauf Insulation and Wyoming Ethanol: Two companies, similar goals

Driven by oil prices and the environmental consequences of using fossil fuels, the U.S. ethanol industry has grown its production capacity by more than 150% since 1999. In Torrington, Wyoming, Renova Energy operates a production facility through its subsidiary, Wyoming Ethanol, that contributes 5 million gallons of the cutting-edge fuel each year to the national total.

**Ethanol:
A next generation fuel...**



Oil prices are on everyone's minds these days, from the motorist at the gas pump to the corporate executive dealing with higher costs. Beyond the impact on our pocketbooks, there are environmental consequences to fossil fuels, in pollution and the threat of global warming. And because the U.S. buys most of its oil from the Middle East, our national security is jeopardized by depending on an unstable region for a vital resource.

There has to be a better way—and in the ethanol industry, many experts believe they've found it.

Ethanol, a fuel produced from corn, is winning acceptance as a possible replacement for fossil fuels. Made from renewable resources with no waste products and reduced emissions, it's an attractive alternative; some vehicles already use a 85% ethanol and gasoline mix (E85).

In mid-2005, Renova broke ground on an expansion to more than double the capacity of this plant to 12 million gallons per year. To insulate the piping and equipment of the expanded operation, Renova and its construction partners turned to another company whose products save energy and help preserve the environment—Knauf Insulation.



Account Manager for International Technifab Jason Vaill, DPI Project Manager Dan Tobin, DPI General Manager Jim Dunks, Knauf Sales Representative Chad Kuykendall.

Project Profile

Wyoming Ethanol Manufacturing Facility
Renova Energy
Torrington Wyoming

Scope: Retrofit and new construction—doubling capacity

Owner: Renova Energy

Engineer/designer: Delta-T

General Contractor: TIC-Wyoming, Inc.

Insulation Contractor: DP Industrial, Inc.

Insulation Distributor: International Technifab

Knauf Products

- 1000° Pipe Insulation
11,000 linear feet
- KwikFlex™ Pipe and Tank Insulation
6,500 square feet
- Elevated Temperature Board
15,000 square feet

For more information call (800) 825-4434 ext. 8283

or visit us online at www.KnaufInsulation.com



Quality Products Quality Partnership

Knauf Insulation was brought to the Wyoming Ethanol project through a partnership between insulation contractor DP Industrial and distributor International Technifab.

DPI is a fairly new company, in business for just over a year, but its primary partners offer decades of experience in the insulation industry. Headquartered in Salt Lake City, the company has expanded rapidly, undertaking projects across Utah, Wyoming, Idaho and beyond. The Wy-

oming Ethanol expansion is one of the larger and more high-profile jobs tackled by the young firm, so it was important to have partners they could trust.

"The job was specified for fiberglass insulation, which we prefer—it installs faster and lets us be more productive than mineral wool," said Jim Dunks of DPI.

"So we were able to use Knauf insulation through International [Technifab]. That's great for us, because we feel that Knauf is the best product out there."

For the Wyoming Ethanol expansion, DPI used Knauf 1000° Pipe Insulation, KwikFlex Pipe & Tank Insulation and Elevated Temperature (ET) Board. Dunks has been pleased with the performance of all of these products, singling out Knauf 1000° Pipe Insulation for helping his crews stay busy and within budget.

"We've used other products that haven't performed nearly as well," he said. "The paper [facing] falls off or doesn't line up, or its not perfectly round...It's



Knauf 1000° Pipe Insulation offers an extended temperature range—the best thermal performance in the industry.

a huge thing—without the right product, the quality looks bad and your labor costs go up. It's hard to recover from a situation like that.

"We don't have those problems with Knauf [pipe insulation]."

As with any job, ensuring product availability was also critical to staying on schedule. Most of DPI's leadership, including Dunks and company president Dave Staley, had built strong relationships with International Technifab through their previous companies

that had carried through to DPI. International Technifab, in turn, has worked with Knauf Insulation for over a decade.

"We get very positive feedback from our customers on Knauf in terms of product quality and ease of installation," said Jason Vaill, Account Manager for International Technifab. "From a distribution standpoint, they're also great to work with. The product is always available and on time, and their customer service folks are always very helpful."



Ingredients and eventually processed ethanol is delivered to tanks at expected temperatures with the help of Knauf 1000° Pipe Insulation. Pipes run outdoors and throughout the uninsulated metal buildings at the manufacturing facility.



Saving operating energy for the plant is easier when the 4-story tank used to cook the corn into ethanol is wrapped in Knauf KwikFlex Pipe & Tank Insulation.



Knauf Elevated Temperature Board will keep the tanks consistently within the necessary operating temperature range regardless of Torrington's temperature fluctuation from daylight to nightfall and despite winter wind shears.



A Solution for Every Challenge

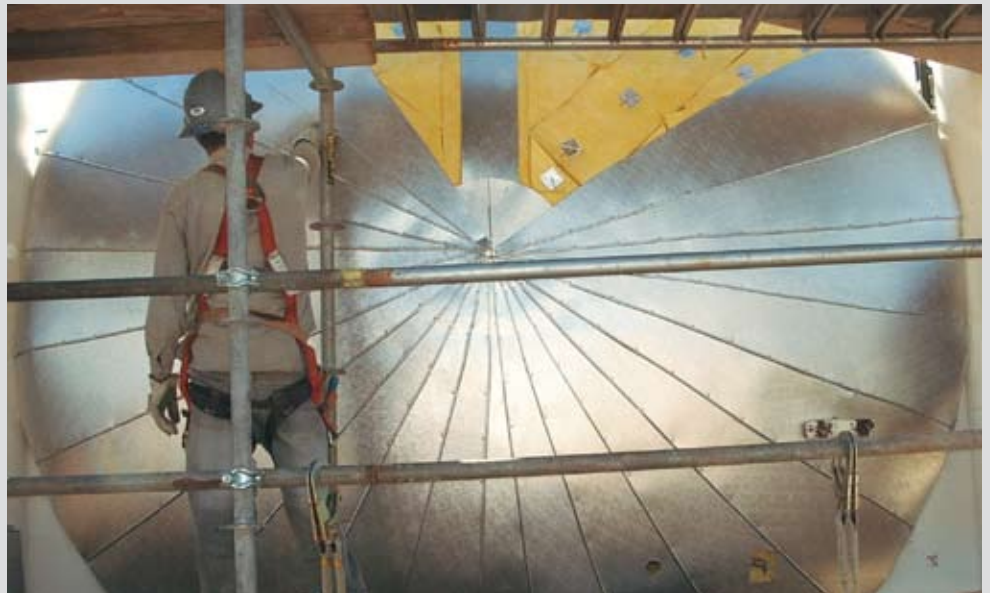
A variety of piping and equipment sizes in the Wyoming Ethanol facility confronted DPI's crews. Manufacturing ethanol, from corn to fuel, takes the product through a series of processing and holding tanks; at the Torrington facility, these ranged from 1' x 4' to 15' x 45', with the tallest vessels rising four stories to nearly 80 feet. Special scaffolding was erected and moved from tank to tank as DPI workers insulated the largest of these. Nearly 11,000 linear feet of new piping ran throughout the buildings, between and among the tanks and equipment.

During the project, the new pipe and equipment was installed in the existing plant as well as in newly-constructed space that expanded the total area of the facility by 40%. In many cases, it was more cost-effective to retrofit the new vessels without removing the old, leading to space constraints that challenged installers.

Fortunately, Knauf Insulation offers a mix of products that allowed a smooth installation for all of these circumstances—Knauf 1000° Pipe Insulation for the small and large-bore piping, Knauf KwikFlex Pipe & Tank

Insulation for the smaller and mid-sized vessels, and 15,000 square feet of Knauf Elevated Temperature Board for the large tanks. DPI Project Manager Dan Tobin has seen all of these products first-hand during his 23 years in the business. He was impressed again during the course of this 16-week installation.

"Knauf's pipe insulation is great to work with...it cuts smooth, with no loose fibers," said Tobin. "You can tell it's wound better than other pipe insulation, too, so it goes on easily."



“The job was specified for fiberglass insulation, which we prefer—it installs faster and lets us be more productive than mineral wool,”

Tobin went on to note that Knauf 1000° Pipe Insulation’s unique ability to be installed without a heat up cycle up to 1000° performed well on “hot” operating systems. This was often the case in this situation as Wyoming Ethanol continued to produce its cutting-edge fuel during the expansion.

Tobin also raved about Knauf KwikFlex Pipe & Tank Insulation, a blanket product with fibers that are uniquely formed to provide a flexibility that sets it apart from rigid pipe and tank products. This flexibility allows Knauf KwikFlex

to easily wrap tight around larger pipes, tanks, and irregularly-shaped objects, saving time while maintaining the compressive strength and thermal performance of rigid insulation alternatives.

“KwikFlex is awesome,” Tobin said, noting that the product was used for vessels ranging from two to five feet in diameter. “It wraps so easily around the smaller diameter tanks, it’s a great labor saver.”



Meeting Tough Timelines

Saving labor—and time—was critical, as the Wyoming Ethanol project faced a tight schedule under tough conditions. Engineering challenges had compressed the construction timeline, which in turn impacted the insulation installation.

“We’re almost always the last ones in [among the construction trades] so we get the tightest schedules,” said Tobin. “All the piping and equipment was jacketed, so our metal guys pushed our insulators, our scaffold guys pushed our metal guys, and our insulators pushed our scaffold guys. It’s a great thing when momentum is on your side. Using Knauf helped in that process.”

“The guys enjoy working with Knauf, and it allows us to keep moving at a good pace. When a crew doesn’t like a product, you hear lots of complaints—with Knauf, it’s quiet and busy.”

“(KwikFlex) wraps so easily around the smaller diameter tanks, it’s a great labor saver.”



Knauf ET Board offers lightweight solutions with excellent handling properties.

Consistent wall thicknesses make for perfect alignment and a quick installation of Knauf 1000° Pipe Insulation.



That attitude has won accolades from TIC, the general contractor for the project.

"It's been a great working partnership with DPI, and we've liked what we've seen out of the Knauf products," said Matt Harshman, Construction Man-

ager for TIC. "With more than 150 people working this site at times, it's a challenge to manage all the subcontractors and make sure everything's going according to schedule. DPI's installation has gone well, and that's helped keep the whole project moving ahead."



Saving Energy with Knauf

Using Knauf insulation has saved DPI and its construction partners energy on the jobsite: The consistent quality of Knauf 1000° Pipe Insulation has helped keep installers productive. The ease of wrapping Knauf KwikFlex around large pipe and mid-sized tanks has saved labor. Knauf Elevated Temperature Board is easy to handle for larger-sized applications. Quality products have allowed DPI to work harder and smarter.

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Knauf KwikFlex offers flexibility and compressive strength in a blanket form.

As the expansion goes on line, Knauf Pipe Insulation, KwikFlex and ET Board will start saving energy in another way. Much of the Wyoming Ethanol operation is housed in uninsulated metal buildings, and includes several outdoor holding tanks. Knauf Insulation products will play a critical role in making the facility more energy efficient, especially considering the Wyoming weather, which features sudden changes in temperature, 100° degree days in the summer and routinely sub-freezing temperatures in the winter.

In producing a cleaner, naturally-renewable fuel, Renova and Wyoming Ethanol are helping our environment. Knauf Insulation does the same by producing fiberglass insulation products that are saving energy in homes, offices and manufacturing plants, and in turn preventing millions of tons of carbon dioxide emissions every year.

With partners like DPI and International Technifab, Knauf Insulation and Wyoming Ethanol can work towards a common goal: preserving our world's energy resources.



Knauf's "mandrel-wound" forming process prevents gaps and inconsistent densities, making notch out sections easy and clean.



The pressure sensitive self-sealing lap eliminates a need for staples, additional material and tools.



Installation of Knauf 1000° Pipe Insulation in the retrofit areas allowed for non-stop production of ethanol.

KNAUF INSULATION



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Knauf: Preserving Our World's Energy Resources®

At Knauf, we manufacture a wide variety of products that serve a common goal: helping to make the most of our planet's energy resources. A family-owned global company, we understand and are committed to high standards in quality, performance and environmental responsibility. Every step we take today toward energy conservation helps ensure better lives for generations to come.



LEED Eligible Product

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