

# Case Study

Muffling Gas  
Transmission Pipeline Noise

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**GLT**  
PRODUCTS®



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### At -20°F, Muffling Gas Transmission Pipeline Noise Presents Extra Challenges

Standing up to bitter wintertime temperatures in Canada is not for the faint-of-heart or the less-than-robust. This is true even for the materials that go into the tens of thousands of miles of natural gas transmission pipelines that crisscross the country. Natural gas passes through these pipelines at pressures up to 1,200 psi to compressor stations and on to distribution centers or storage facilities on its way to customers. These pipes, made of high-carbon steel, are sometimes up to 60 inches in diameter; they may be buried from three to six feet deep or elevated above ground. Standing near one could be an overwhelming experience because the vibration produced by gas roaring through the pipe sounds like a passing freight train.

Obviously, constant noise at this level would be unacceptable, particularly in heavily populated areas. A supplier for a TransCanada pipeline project turned to GLT Products for assistance in finding an effective noise barrier solution that could also withstand long exposure to a wide range of weather conditions. The acoustic insulation engineers at GLT went to work on the problem, first choosing a pressure-sensitive, solvent-based acrylic adhesive that could be used to laminate the company's Vinaflex™ VN-100 mass-loaded vinyl to a 0.024-inch aluminum jacket, then designing and building a system to produce the product in large quantities. This Vinaflex™ with Aluminum or Vinaflex™ AF, is now a standard product in the GLT line. It was designed to wrap around the transmission pipe over a four-inch layer of fiberglass insulation, followed by another four inches of fiberglass and a final layer of jacketing. This sound barrier "sandwich" lets noise from the pipeline bounce off the Vinaflex barrier as it is absorbed, expending its energy within the fiberglass like a pinball bouncing off a bumper. At a density of 1 lb./ft<sup>2</sup>, the Vinaflex™ AF product provides a 29 dB noise reduction at 1,000 Hz.

Although the project worked out well for both the supplier and the installer teams, there were a few disconcerting moments for GLT managers. Steve Wake recalls, "About two weeks after we sent off a truckload shipment of the product, I get a phone call from a guy on the job site in Canada and he says, 'There's something wrong with these rolls—the vinyl must have shrunk because we just can't open them up.' I asked him, 'Well, where are you working?' He said, 'We're cutting the rolls using a shear in a trailer on the jobsite.' I just couldn't understand the problem they were having because the product was fine when it left our plant. Suddenly, it hit me. 'How cold is it up there?' 'Oh, it's not so cold that the crew can't work.' I asked, 'How cold does it have to get before they stop working?' He said, 'About 20 below . . .' 'Well, imagine trying to unroll a heavy vinyl curtain in an unheated trailer in sub-freezing temperatures. I just told them to turn on a heater in the trailer for a while before they tried to unroll it.'"

Once the heater raised the temperature of the trailer sufficiently, the crew was able to get back to work cutting the insulation to size and wrapping it around the pipeline to stay on schedule.

