

# SOUND SOLUTIONS!

Case History No. 1

## ACOUSTICAL COMPOSITE QUIETS COMPRESSOR STATION

Over 800 sound absorption/barrier panels in 50 different sizes line the interior of Tennessee Gas Pipeline's compressor station 254.



Tennessee Gas Pipeline's mainline compressor station houses five 1400 horsepower compressors.

It's hard to imagine that one person could hold up the expansion plans of a \$3 billion corporation. But that's exactly what happened to the Tennessee Gas division of Tenneco.

Tennessee Gas Pipeline's mainline compressor station 254 is in the small town of Nassau, New York, located just South of Albany. The station houses five 1400 horsepower compressors. These compressors make it possible for natural gas to flow to thousands of homes throughout New York and New England.

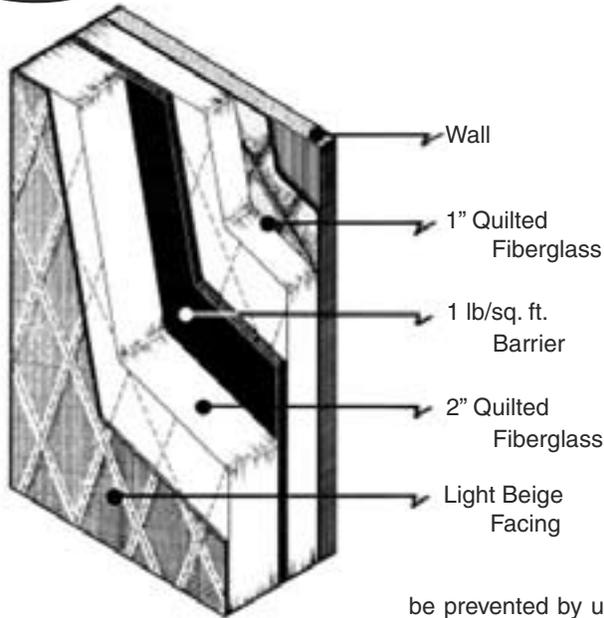
Because of the noise they generated, the compressors were causing serious problems for Tennessee Gas with their next door neighbor and subsequently Nassau's town fathers.

Compressor station 254 sits on a 40 acre lot and is bordered on one side by a private residence. The homeowner's complaints to the local government and press created an adverse public relations climate for Tennessee Gas. With

major expansion planned and the taste of bad press growing more sour every day, Tennessee Gas decided to investigate the noise problem and figure out what could be done to remedy the situation.

Independent testing showed that compressor station 254 was generating sound levels up to 60 dB(a) at the boundary line. Further testing revealed that the dominant noise sources were low frequency, which are always more difficult to attenuate than high frequency noise. To comply with local and state ordinances and clear the way for future expansion, Tennessee Gas set out to find a company which could reduce the noise level at the property line from 60 dB(a) to 50 dB(a) by treating the building, rather than individual compressors. Their reasoning was that employees must have unrestricted access to the compressors and clear visibility throughout the building.

After considering and quickly dismissing a foam product because of its



expense and inability to meet the Class 1 fire rating, Tennessee Gas entertained and ultimately accepted the recommendation offered by Sound Seal of Agawam, Massachusetts. Application engineers from Sound Seal recommended lining the walls and ceiling with a sound absorption/noise barrier composite. The composite, made up of quilted fiberglass and a 1lb./sq.ft. barrier, would do double duty for Tennessee Gas by absorbing airborne sound waves and increasing the transmission loss ability of the building. Leaks at the seams of the panels would

be prevented by using a hook and loop attached noise barrier batten.

After testing and the development of a new, time and money-saving installation technique, Sound Seal began manufacturing over 50 different sizes and configurations of the composite panel. Over 800 panels were made to line the interior of the 40' wide x 179' long x 28' high building.

Post-installation testing showed that the Sound Seal solution performed better than the promised results. The noise level at the property line was reduced from 60dB(a) to 45dB(a), 5dB(a) lower than what was specified. And while noise

levels within the building were not as critical, Tennessee Gas officials were pleased the employees could now hold a conversation without shouting.

In addition, Tennessee Gas found that the light colored fabric facing used by Sound Seal dramatically improved the lighting inside the building.

Town officials quickly expressed their pleasure with the decrease in noise, and the neighbor who shares the property line called Tennessee Gas Pipeline officials to thank them. He even said he would alert the local media to encourage a positive article on the company. Tennessee Gas Pipeline officials are confident they will not hear a lot of noise from the local government when they move ahead with expansion plans.



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