



FOAMGLAS®

FOAMGLAS® Insulation Specified for Phase III Isle of Grain Terminal Expansion

PROJECT PROFILE

As the primary gas import point to the UK, the Isle of Grain liquefied natural gas (LNG) reception terminal in Kent continues to play an important role in the UK's energy security. The requirements of the facility's previous expansion efforts were among the vital considerations for a third expansion project. These included functional efficiency, fire safety and rapid installation.

For the initial two Grain LNG extensions, Pittsburgh Corning's FOAMGLAS® insulation was prefabricated and then applied on site. Due to tight time constraints and lower site work efficiencies, CBI chose to move to a modularized construction approach, with large pipe racks constructed in Immingham, UK, by Fabricom Contracting. The pipework was insulated in Fabricom's yard with strong and resilient FOAMGLAS® cellular glass insulation, then transported by ship to Grain.

The success of the double-layer, all-FOAMGLAS® insulation system with factory pre-applied Terostat vapor retarder was demonstrated in phase two installations. Phase two additionally showed the superior thermal expansion/contraction performance of FOAMGLAS® insulation when compared with plastic foams, allowing for two layers of FOAMGLAS® insulation instead of the three or four layers used with the combined PIR/FOAMGLAS® system for phase one. This proven system was again used for phase three, dramatically reducing labor time. Reduced labor time allowed for ease of phase three program management which led to better contained installed costs.

FOAMGLAS® Innovations

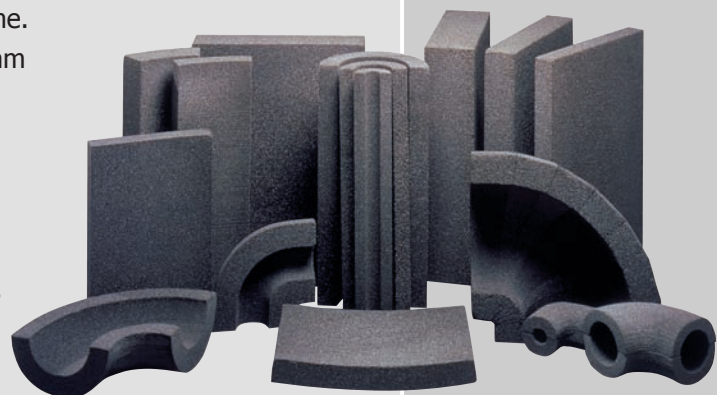
Pittsburgh Corning offers innovative pre-fabrication and factory applied coating techniques to make installation as fast and easy as possible. Pittsburgh Corning supplied

Engineering Design & Specifications
CB & I

Mechanical Contractor
Fabricom Contracting

Insulation Contractor
CGB Humbertherm

Insulation Fabricator
Pittsburgh Corning (UK) Ltd





prefabricated quarter sections for pipes as large as 36" diameter, speeding up installation and improving quality by reducing the number of required field joints. Factory pre-applied Terostat PCFR vapor retarder further minimised site work and provided full weather protection as soon as the FOAMGLAS® insulation was applied to the pipe.

On two-layer cryogenic systems like those in LNG processes, staggered joints can be realised using FOAMGLAS® pre-fabricated bends where the outside layer is longer than the inner layer and longitudinal joints are also prefabricated in a 90° staggered orientation. For the phase three Grain modules, 260 bends and 3.5km of straight section--mostly double layer--was supplied, including nearly 2km at sizes 16" to 36".

Pittsburgh Corning offers additional FOAMGLAS® innovations including pre-fabricated/pre-assembled T-pieces, flange/valve boxes and complete dome ends, as well as pre-applied jet-fire coatings which provide significant program and performance benefits.

FOAMGLAS® Insulation Supports 8th LNG Storage Tank

FOAMGLAS® insulation has supported the four original LNG storage tanks for decades and was installed under the three new LNG storage tanks at Grain. Construction on the eighth tank will take place in 2010, again using FOAMGLAS® cellular glass insulation. FOAMGLAS® Insulation promises a long and successful life for the UK's major LNG import terminal, providing security of energy supply for the UK by protecting against the risks of insulation failure and fire.

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