



# TECHNICAL BULLETIN

# COLD & CRYOGENIC ISO 15665 COMPLIANT SYSTEMS

## FOAMGLAS® | THERMAFIBER®

Industrial environments are known to be noisy with high sound levels that, in many cases, require hearing protection. There are ways to help reduce, if not eliminate, noise from equipment, such as pumps, fans and motors. Each facility is different, and while acoustic data often exists for the equipment in use, a different approach is needed to address the piping that connects the equipment together.

To address the need for piping acoustics, the International Standards Association (ISO) developed the standard ISO 15665:2003 "Acoustics – Acoustic Insulation for Pipes, Valves, and Flanges." This standard simplifies the process of developing an acoustic specification by assigning three levels of performance ("A," "B," and "C") to three different pipe size ranges ("1," "2," and "3"). As an example of the relative difference in performance levels, see the graph on the following page. This comparison is based on two pipe sizes that represent pipe diameters ranging from 12" (DN 300) to 26" (DN 650). A recent addition to this requirement is system "D" created by one of America's largest oil and natural gas producers.



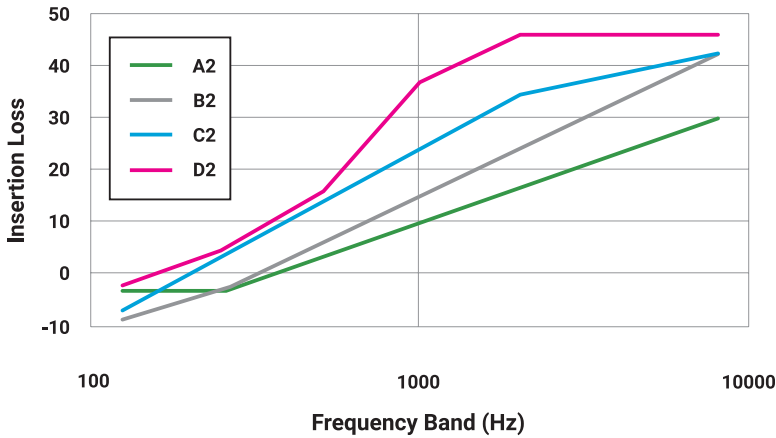
For cold and cryogenic applications, including LNG and ethylene projects, cellular glass insulation is used for thermal protection, overfit with a mineral wool system for additional acoustics performance. FOAMGLAS® cellular glass and Thermafiber® industrial mineral wool insulation for pipes, valves, and flanges meet or exceed the requirements for ISO 15665 and ASTM industry requirements. Tested in an accredited lab, our solution helps to reduce ambient facility noises and potential hearing loss. The chart below indicates the Owens Corning® systems that cover the cold and cryogenic temperature spectrum and performance ratings.

### ISO 15665 Compliance Cold to Cryogenic Temperature - Pipe Sizes Less Than 26" - (DN 650)

CLASS PERFORMANCE <sup>1</sup>	COLD/CRYOGENIC INSULATION	THICKNESS <sup>3</sup>		ACOUSTIC INSULATION <sup>2</sup>	THICKNESS		MASS LOADED VINYL		CLADDING THICKNESS	
		mm	inch		mm	inch	kg/m <sup>2</sup>	lb/ft <sup>2</sup>	mm	inch
C	FOAMGLAS ONE Cellular Glass	50 +	2 +	Pro Section WR	90	3.5	5	1	Steel ≥ 0.7	≥ 0.027
C	FOAMGLAS ONE Cellular Glass	50 +	2 +	Industrial Wrap	100	4	5	1	Steel ≥ 0.7	≥ 0.027
D	FOAMGLAS ONE Cellular Glass	50 +	2 +	Pro Section WR	50 +	2 +	5 +	1 +	Steel ≥ 0.7	≥ 0.027
		50	2	Pro Section WR	50	2	5	1		
D	FOAMGLAS ONE Cellular Glass	50 +	2 +	Industrial Wrap	50 +	2 +	5 +	1 +	Steel ≥ 0.7	≥ 0.027
		50	2	Industrial Wrap	50	2	5	1		

1 1 Diameter less than 12" (DN 300), 2 Diameters ranging from 12" (DN 300) to 26" (DN 650).  
 2 Thermafiber® Pro Section WR is available in North America. It is equivalent to PAROC® Pro Section WR 120. Thermafiber® Industrial Wrap is available in North America. It is equivalent to PAROC® Pro Mat 100 AluCoat.  
 3 Thickness requirements for cold/cryogenic insulation may vary by application and service temperature. Contact Owens Corning for technical assistance.

## ISO 15665:2003 “Acoustics – Acoustic Insulation for Pipes, Valves, and Flanges” Performance Requirements



### Modeling and Testing

The Owens Corning Science and Technology Acoustic Research Lab, located in Granville, Ohio, conducts ongoing building science research studies evaluating the performance of insulating materials.

Owens Corning offers acoustics modeling and testing services. For more information, please send an email to: [GETTECH@owenscorning.com](mailto:GETTECH@owenscorning.com).

### Third-Party Assessments

We also partner with third-party academic and research partners around the globe. For example, Owens Corning conducted acoustic studies at Gryfitlab in Lozianica, Poland, to evaluate how several combinations of insulations, thicknesses, jacketing, and lagging performed under various conditions.

### Disclaimer of Liability

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