



Bilfinger Industrier Norge AS

LAMDA C CRYO CRYOGENIC INSULATION BOX

REMOVABLE INSULATION BOXES

Key Product Benefits

- Extreme performance
 - High Impact resistance
 - No Water or waper absorption
- HSE: No toxic ingredients, no ceramic fibres
- Maintenance free
- Easy to install, remove, inspect, and re-install
- Pre-fabricated solution → low installation cost.
- Low Life Cycle Cost
- Lambda Cryo Box is available in combination with Lambda F Jet Fire Box, or Lambda F Fire Jacket for cold insulation classes when jet fire protection is required.
- Tested and Certified according to
 - Sintef Test report TR F6759

Cryogenic Insulation Boxes – Bilfinger Lambda Products

Lambda is the brand name used on all insulation products marketed by Bilfinger Oil & Gas. All products are designed and documented to be used in high risk environments within the oil & gas industry, nuclear power plants and process industry. The products have been developed and tested as a consequence of the rigorous requirements in the oil & gas industry, meeting Norsok and ISO standards.

All Lambda products are highly recognized among professional engineers as "state of the art" insulation systems. Each product is tailor-made and pre-fabricated to fit the exact valve, flange or equipment to be protected.

In addition to meeting functional requirements, all products are designed for quick and easy removal and re-installation with a minimum use of personnel and tooling. Bilfinger Lambda is continuously and proactively recognizing customer demands and developing solutions to meet these requirements.

Lambda C Cryo Box

The Lambda C Cryo Box has been designed to allow easy maintenance on equipment that need adjustments or renovation. The solution can be removed and re-installed several times, wich means significant cost savings.

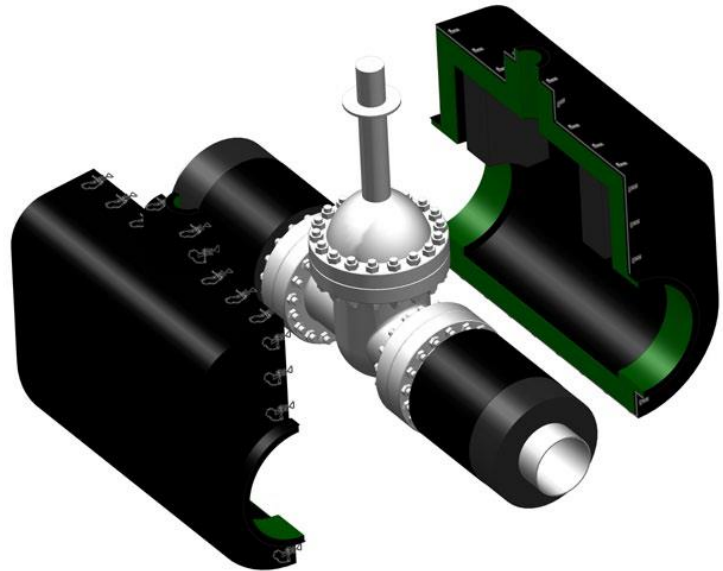
Lambda Cryo Box is a eco-friendly product with a recycling policy that will enhance your environmental profile. The Lambda Cryo Box can be installed and used in systems that are exposed to extreme weather conditions.

Lambda Cryo Box is pre-fabricated at our workshops by certified operators and consists of a two-part solutions where all qualities are ensured and under controlled conditions.

Lambda Cryo Box is available in combination with Lambda F Jet Fire Box, or Lambda F Fire Jacket for cold insulation classes when jet fire protection is required.



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Design and Test results

Lambda C Cryo Box has been tested in an extensive test programme at SINTEF Energi, where the insulation solution was subjected to cooling down to $-163\text{ }^{\circ}\text{C}/-261\text{ }^{\circ}\text{F}$ for a 24-hour period.

The test program included five subsequent cycles where the temperature alternated between an average of $-163\text{ }^{\circ}\text{C}/-261\text{ }^{\circ}\text{F}$ and $+20\text{ }^{\circ}\text{C}/68\text{ }^{\circ}\text{F}$ in each cycle. No indication of moisture/condensation.

SINTEF conclusion:

According to test results described, the insulation boxes behaved in accordance with the intention both as thermal insulation and as a vapor barrier against moisture penetration.

SINTEF				TECHNICAL REPORT	
				SUBJECT/TASK (100)	
				TESTING of prefabricated thermal insulation boxes for low temperature applications	
				CONTRIBUTOR(S)	
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				BIS Industrier AS	
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RESULT (summary)					
Two insulation boxes intended for low temperature application such as LNG plants have been tested.					
Conclusion:					
According to test results shown in chapter 4, the following observations were detected:					
<ul style="list-style-type: none"> No penetration of moisture where detected inside the insulation boxes, when opened after the test. Just minor areas with frost where detected on the outside of the insulation boxes (explained in chapter 4), during the tests 					
According to test results described, the insulation boxes behaved in accordance with the intention both as thermal insulation and as vapour barrier against moisture penetrating.					
KEYWORDS					
SELECTED BY AUTHOR(S)	Thermal Insulation	Termisk isolasjon			
	Vapour barrier	Dampsperre			

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