Spaceloft® Subsea

aspen aerogels®

PRODUCT DATA SHEET

Insulation System for Subsea Pipe-in-pipe Applications

With extremely low thermal conductivity, the Spaceloft® Subsea pipe-in-pipe (PIP) insulation system is the ideal and most widely installed thermal insulation system for subsea pipe-in-pipe applications in the major offshore sectors.

The pre-packaged Spaceloft Subsea system is available in any panel size and with multipe insulation thicknesses - which can be built up in order to meet specific pipeline thermal goals. The system is is ideal for both very hot pipelines as well as cooler pipelines that can sometimes be found in deep fields. The low thermal conductivity of the Spaceloft Subsea insulation provides superior thermal perfomance allowing minimal heat loss for extremely long tiebacks.

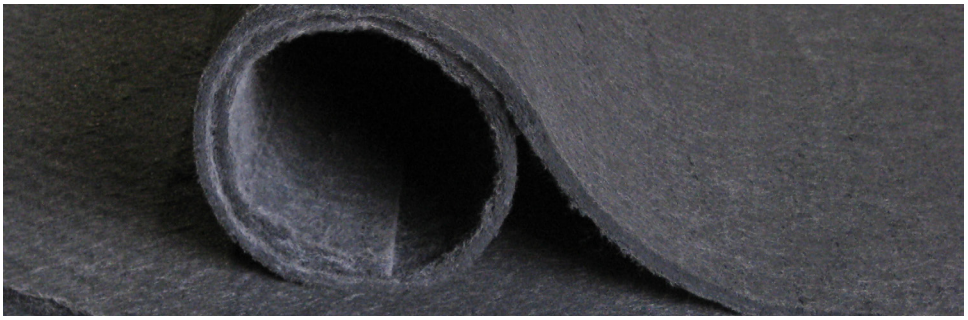
Thse Spaceloft Subsea systems pre-packaged bags are quick and efficient to apply in a continuous process minimizing installation time. Due to its inherent flexibility, the Spaceloft Subsea insulation can be easily tailored on site if required.

With more than 1 million kilometers of pipelines insulated, Spaceloft Subsea has been widely used by major oil companies and their preferred contractors in the Gulf of Mexico, Offshore Brazil, the North Sea, and Offshore West Africa.

Well-suited for long pipelines where the inlet temperatures are low so that the margin on hydrate or wax format is critical. It is a stable, low thermally conductive material that helps minimize carrier sizes while achieving the lowest possible Overall Heat Transfer Coefficient (OHTC) for the pipeline.

ADVANTAGES

- **Spaceloft® Subsea system is provided in a prepackaged form to permit quick installation.**
- **The package is available in flexible formats for Reeling, S lay, and J lay needs.**
- **Pre-packaged thicknesses can be obtained from a combination of 5 mm or 10 mm insulation plies, or a hybrid of 5 mm and 10 mm plies.**
- **Unlike rigid insulations, adapts to any irregular pipe surface such as bundles and electrically heated PIP**
- **Once installed, panels can be easily inspected to ensure proper fit**
- **Can accommodate electrically heat traced PIP (EHPIP) or directly electrically heated (DEH) PIP.**



ADVANTAGES OF SPACELOFT SUBSEA INSULATION

- Equal thermal resistance at a fraction of the thickness of competing materials - minimizing carrier sizes
- Up to five times better thermal performance than competing insulation materials
- Easily cut and packaged to suit customer rapid installation needs
- Soft and flexible but with excellent springback, recovers thermal performance even after compression events as high as 50 psi
- Unlike rigid insulations, adapts to any irregular pipe surface such as bundles and electrically heated PIP
- Repels liquid water but allows vapor to pass through
- Excellent long-term aging performance

PHYSICAL PROPERTIES OF SPACELOFT SUBSEA INSULATION

BLANKET THICKNESS*	0.2 in (5 mm)	0.4 in (10 mm)
MAX. USE TEMP.	390°F (200°C)	
COLOR	Black	
DENSITY*	10 lb/ft^3 (0.16 g/cc)	
HYDROPHOBIC	Yes	

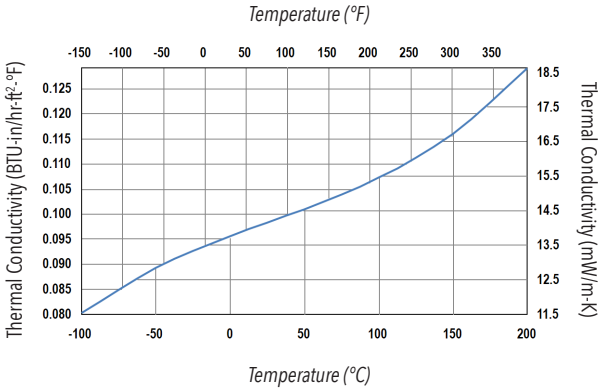
*Nominal Values

THERMAL CONDUCTIVITY OF SPACELOFT SUBSEA INSULATION

ASTM C177 Results

Mean Temp. °F / °C	***k*** BTU-in/hr-ft^2-°F / mW/m-K
-58 / -50	0.09 / 13
32 / 0	0.10 / 14
100 / 37.5	0.10 / 15
122 / 50	0.10 / 15
212 / 100	0.11 / 16
302 / 150	0.12 / 17
392 / 200	0.13 / 19

†Thermal conductivity typically measured at a compressive load of 2 psi.



THE AEROGEL ADVANTAGE

Aerogel is a lightweight solid derived from gel in which the liquid component of the gel has been replaced with air. The process of creating aerogel results in a material with several remarkable properties: extremely low density; the lowest thermal conductivity of any solid; and therefore one of the world's most efficient insulating materials. Our patented process integrates this unique aerogel into a fiber-batting to create our flexible, resilient, and durable aerogel blankets with superior insulating performance.

ADDITIONAL PRODUCTS

Aspen Aerogels produces several types of high-performance flexible aerogel blanket insulations including Pyrogel and Cryogel thermal insulation, for energy conservation, and fire protection. Please visit us at aerogel.com or contact us for additional information on these products.

MORE INFO

PRODUCT WEB PAGE

Scan with mobile device or go to aerogel.com

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