

Spaceloft[®] Subsea

FLEXIBLE INSULATION FOR SUBSEA PIPE-IN-PIPE APPLICATIONS

Spaceloft[®] Subsea, due to its very low thermal conductivity, is used for thermal insulation for pipe-in-pipe (PIP) applications in the major offshore sectors.

Customers can request almost any desired thickness to suit their pipeline thermal goals. The insulation is ideal for very hot pipelines as well as cooler pipelines that can sometimes be found in deep fields.

Spaceloft[®] Subsea has the ability to minimize heat loss for extremely long tiebacks. It is manually installed in a continuous process and, because it is flexible, can be easily tailored on site if required. Spaceloft[®] Subsea is provided prepackaged ready for use or in blanket roll format for later processing.

Spaceloft[®] Subsea has been used by several major oil companies and their preferred contractors in the Gulf of Mexico, Offshore Brazil, the North Sea, and Offshore West Africa.



Physical Properties

Thicknesses*	Blankets: 0.2 in (5 mm), 0.4 in (10 mm) Prepackaged: 0.2 in (5 mm) increments, other thicknesses on request
Material Form*	58 in (1,450 mm) wide
Max. Use Temp.	390°F (200°C)
Color	Black
Density*	10 lb/ft ³ (0.16 g/cc)
Hydrophobic	Yes

* Nominal Values

Advantages

Superior Thermal Performance

Up to five times better thermal performance than competing insulation materials

Reduced Thickness and Profile

Equal thermal resistance at a fraction of the thickness of competing materials

Less Time and Labor to Install

Easily cut and packaged to suit customer rapid installation needs

Physically Robust

Soft and flexible but with excellent springback, recovers thermal performance even after compression events as high as 50 psi

Simplified Inventory

Unlike rigid insulations, adapts to any irregular pipe surface such as bundles and electrically heated PIP

Hydrophobic Yet Breathable

Repels liquid water but allows vapor to pass through

Aging

Excellent long-term aging performance

Environmentally Safe

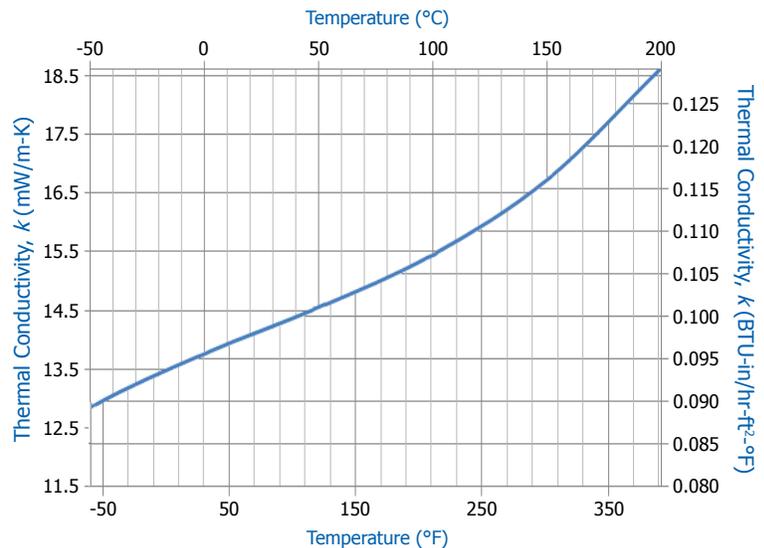
Landfill disposable, shot-free, with no respirable fiber content

Easy to Inspect

Once installed, panels can be easily inspected to ensure proper fill

Thermal Conductivity[†]

ASTM C 177 Results



[†] Thermal conductivity measurements taken at a compressive load of 2 psi. Values shown are taken at the MEAN temperature between the hot and cold side of the insulation. The MEAN temperature is shown in the graph above. For example, 50°C is the mean between 62.5°C hot and 37.5°C cold. 100°C is the mean temperature between 112.5°C hot and 87.5°C cold.

DATA SHEET

Spaceloft® Subsea

Prepackaged Thicknesses

Prepackaged thicknesses can be obtained from an economical combination of 5 mm or 10 mm plies, or a hybrid of 5 mm and 10 mm plies. Thickness obtained can be standard (5 mm, 10 mm, 15 mm, 20 mm, 25 mm, 30 mm, etc.) or any thickness in between. Standard thicknesses provide the most economical solutions in processing industry applications.

Packaging

Spaceloft® Subsea is provided for subsea PIP users in a prepackaged form to permit quick installation. The package is available in flexible formats for Reeling, S lay, and J lay needs.

HPHT PIP Uses

Spaceloft® Subsea has been validated, among other Aspen Aerogels® insulation materials, for high temperature use in future deep subsea pipelines. It provides excellent performance for lines operating at higher temperatures such as 350°F over long lengths.



Low Temperature Margins

Spaceloft® Subsea is 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.

Adaptable to Pipe Changes

Spaceloft® Subsea can be modified on site by trimming or cutting the panel to accommodate any changes in pipe lengths. This can be performed on or off the pipe without any substantial loss of material or panel waste. Similar solutions using other Aspen Aerogels® materials are available for Pipe Line End Terminations (PLET's) or other types of bends.

Electrically Heated Pipe-in-Pipe

Spaceloft® Subsea can accommodate electrically heated PIP (EHP/IP) or directly electrically heated (DEH) PIP.

Characteristics

Spaceloft® Subsea can be cut using conventional textile cutting tools including scissors, electric scissors, and razor knives. The material can be dusty, and it is recommended gloves, safety glasses, and dust mask be worn when handling material. See MSDS for complete health and safety information.

Other Available Materials

Aspen Aerogels® produces several types of flexible aerogel blanket materials for thermal insulation, energy absorption, and fire protection. Please contact an Aspen Aerogels® representative for additional information on these products.

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