



**LLOYD  
INSULATIONS**



**ISOLOYD NILFLAME  
SUPERFOAM  
SUPERTHERM**



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ISO 9001 : 2000 CERTIFIED



# ISOLOYD NILFLAME

## ISOLOYD NILFLAME

Rigid Polyisocyanurate foam insulation, a specialist low temperature and cryogenic insulation which has low thermal conductivity, closed cell, moisture resistance and enhanced compressive strength at low temperature, whilst not comprising its elasticity so as to avoid cracking.

### CFC FREE

Isoloyd Nilflame is the only 'CFC FREE' Polyisocyanurate Insulation product, designed within the guidelines of the Montreal Protocol, 1987, for the protection of the Ozone layer.

### BETTER EXTREME-TEMPERATURE PERFORMANCE

Unlike most thermoplastics, Isoloyd Nilflame has low smoke & toxic gas emission, and will not melt or drip in fire. It has low flame spread and is not easily ignitable

It also has a higher hot surface performance Temperature of 150°C. This makes it ideal for use directly over steam or electrical tracing.

Its fire classification meets even the stringent requirements of the British Board of Trade for shipboard insulation as per BS 5608, the Indian Navy; and those of the US Bureau of Mines.

### INSULATION PERFORMANCE

Isoloyd Nilflame is amongst the most thermally efficient insulation materials available and retains its thermal efficiency under the most severe operating conditions due to its closed cell structure and resistance to moisture absorption. With Isoloyd Nilflame insulation thickness can be reduced as compared to other materials like polystyrene foam, cellular glass and fibreglass. Lower thickness exposes lower surface area for expensive vapour barrier and outer cladding.

### EASE OF APPLICATION

Resistant to almost all solvents, Isoloyd Nilflame is compatible with cold applied adhesives, sealants and Vapour-barrier mastics. Isoloyd Nilflame is available in boards, pipe sections, radiused and bevelled lags, with or without factory-laminated facings.

**The most suitable insulation for SHIPS, LNG plants & building interiors.**

### SUPERFOAM

Easy-Fit Polyurethane Foam for low temperature applications & chilled water pipeline insulation.

### Superfoam Mouldable Insulation

Like other urethane foam insulants, Superfoam has low thermal conductivity, low smoke emission and low water vapour permeability. Superfoam can be factory moulded to any shape and for most applications, the need for a facing material is completely eliminated as the product comes out of the factory with a self skin formation.

### CFC FREE

Superfoam is CFC free Polyurethane Foam insulation product as per Montreal protocol 1987.

### AN INSULANT FOR ALL SEASONS

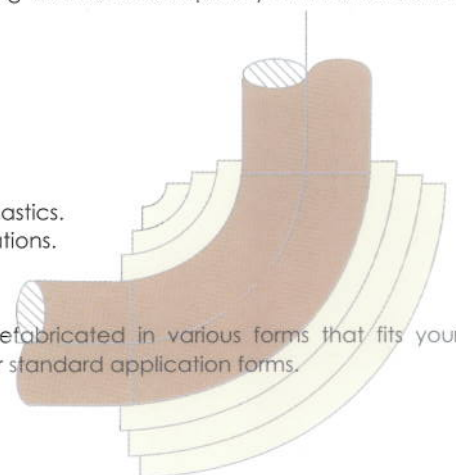
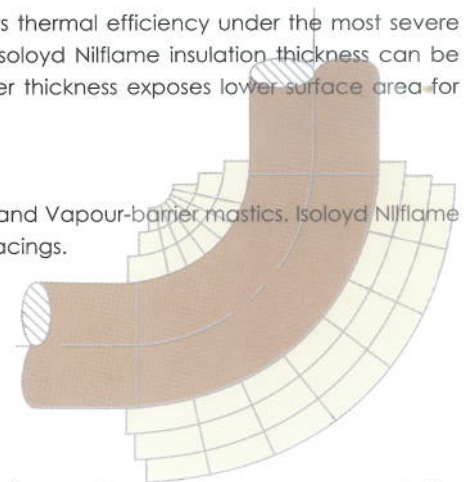
Resistant to all solvents, Superfoam is compatible with cold adhesives, sealants and vapour barrier mastics. Superfoam is available in boards, pipesections radiused bevelled lags, with or without factory laminations.

### DRAMITICALLY REDUCES INSTALLATION TIME

Since Isoloyd Nilflame and Superfoam insulants are mouldable to any shape, they can be prefabricated in various forms that fits your application precisely. Apart from our by now-famous slabs and pipesections we offer them in 4 other standard application forms.

### FOAM-PLUS-MINERAL WOOL 'SANDWICH' PIPESECTION:

The most elegant solution for heat traced lines in systems operating at dual temperatures.



**HORTON SPHERE PETALS:**

A double layer overlapping system of curved 1m x 1m tiles that precisely fit a Horton sphere, enabling complete re-insulation during normal maintenance shutdowns.



**NEW GENERATION PIPESECTION**

The most energy efficient and absolute joint sealed pipe section for cold lines. Superfoam & Nilflame pipe sections are now also available with **shiplap** finish for proper air sealed jointing, which will avoid passage of heat from outside thereby stopping moisture accumulation and ice formation at the joints. The most suitable insulation for low temperature lines.



**PIPE-IN-PIPE PREFAB INSULATION**

A novel factory fabricated one-piece insulated Pipe comprising of a main pipe, superfoam or Nilflame injected insulation and HDPE pipe cladding on top. The inner pipe dia, thickness of insulation shall be as per requirement starting from 3/4" nb and 30mm respectively.

**ENERGY EFFICIENCY**

Isoloyd Nilflame and Superfoam offers one of the most thermally efficient insulation solutions available, providing energy saving benefits and lower long term system running costs.

**HYGIENE**

Isoloyd Nilflame & Superfoam is resistant to fungus & mould growth, will not sustain Vermin, is non-fibrous, odourless and non-tainting.

**STANDARD CONFORMANCE**

Isoloyd Nilflame confirms to IS12436, BS5608 & ASTM C591  
 Superfoam confirms to IS12436, BS5608

**SUPERFORM**

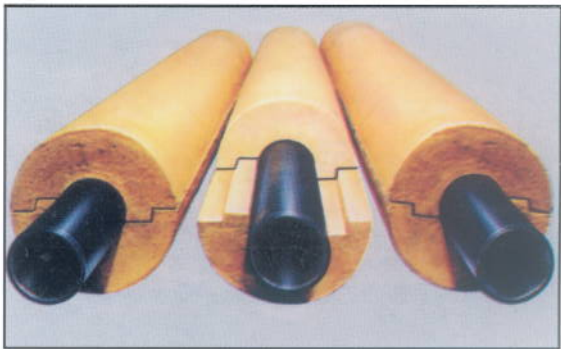


**PROPERTIES**

	<b>ISOLOYD NILFLAME</b>	<b>SUPERFOAM</b>
Density	32 + 2 Kg/m <sup>3</sup> Higher densities available	36 + 2 Kg/m <sup>3</sup> Other densities available on request
Compression Strength (in direction of rise)	172 KN/m <sup>2</sup> (1.75 kgf/cm <sup>2</sup> )	172 KN/m <sup>2</sup> (1.75 kgf/cm <sup>2</sup> )
Thermal Conductivity 'K' (initial) at 10°C	Max. 0.021 W/mK (0.15 BTU-in/hr. sft. DegF) Consult our technical assistance group for thickness recommendations at your operating temperatures and ambient conditions.	Max. 0.021 W/mK (0.15 BTU-in/hr. sft. DegF)
Temperature Limit	150°C to -200°C	+110°C to -180°C
Fire Resistance Properties :		
Surface Spread of Flame (BS : 476 Part-7, 1987)	Class -1	-
Ignitability (BS : 476 Part-5, 1968)	Class 'P' (not easily ignitable)	Class 'P' (not easily ignitable)
Mean Extent of Burn (BS : 4735 Part-7, 1971)	Less than 25mm	Less than 125mm
Toxicity	1.0142	-
Smoke	780.89	-
Oxygen	25	-
Water Vapour Transmission (BS : 4370 Part-2, 1972)	5.84 x 10 <sup>-3</sup> µg-m/s N	5.84 x 10 <sup>-3</sup> µg-m/s N
Closed Cell Content	90% (min.)	90% (min.)
Available Sizes	Boards 1m x 0.5m Pipe Section to suit 50 to 250 mm NB x 1 m long. Other sizes available on request. Shiplap pipe sections Thickness from 25mm to 100mm & Cast-in-Situ	Boards 1 m x 0.5m Pipe Sections to suit 50 to 250 mm NB x 1 m long. Other sizes available on request. Custom moulded shapes to suit Horton spheres and shiplap pipe sections. Thickness from 25mm to 100mm & Cast-in-Situ



**PIPE-IN-PIPE**



**SHIPLAP PIPE SECTION**

# SUPERTHERM

## SUPERTHERM PIPE SUPPORTS

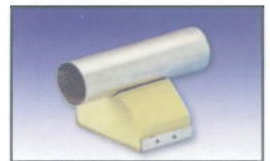
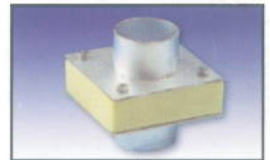
A heavy duty easy to install prefabricated pipe support system of truly revolutionary proportions Supertherm Pipe Supports are made from specially formulated chemical systems that result in high density rigid polyurethane foam. The very nature of the material immediately yields several advantages :-

### PROPERTY

- Wide density range possible
- Pre-engineered at our factory
- Material has a closed cell structure
- Excellent 'K' value
- Good fire resistance
- Close dimensional tolerances
- Supplied in assembled condition, complete with all metal attachments.
- Special sizes, shapes and finishes

### ADVANTAGES

- Higher densities enable higher loads without increase in surface area.
- No sawing and shaping at site. The support precisely matches pipe's OD. Installation time dramatically reduced.
- Does not permit water penetration. No wet rot. No dry rot.
- Provides vastly superior insulation as compared to timber and other materials. No condensation at support point. So no drips, puddles or energy wasted.
- Improved safety at site. Improved durability.
- Pipe Support thickness precisely matches insulation thickness, resulting in neat finish at support location.
- Improved speed of installation. Joint-free in the load bearing area, even for larger diameters of pipe.
- on request Non-standard sizes and shapes can be manufactured to suit specification. Supports can be supplied with a factory - applied coat of fire-resistive mastic, which also serves as a vapour barrier, on the exposed surface.



### PHYSICAL PROPERTIES FOR DIFFERENT DENSITIES

Density (kg/m <sup>3</sup> )	Water Vapour Transmission (gms/m <sup>2</sup> /24 hrs)	Compression Strength (kPa)	Compression Strength (kPa)	Tensile Strength (kpa)
80	93	50	900	1200
120	94	45	1500	1600
180	94	30	2900	2500
250	96	25	4900	3100
320	96	15	8200	5000

The system is 'CFC FREE' and has been designed within the GUIDE LINES OF THE Montreal Protocol, 1987, for the protection of the Ozone layer.

### COMPARISON WITH WOOD

Material	Density kg/m <sup>3</sup>	'k' Value at 10 Deg C	Max. Temp. Deg C	Min. Temp. Deg C	Fire Rating
<b>Wood</b>					
Oak	740	0.159	65	0	Poor
Mahogany	560	0.144	65	0	Poor
<b>Supertherm</b>	80	0.023	110	-185	class 'P' as per BS476 part-5 for ignitability
	120	0.031	110	-185	
	160	0.033	110	-185	

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