

NRP & NSL MATERIAL DATA SHEET

***NRP & NSL* Data file for Insulation**

***NRP & NSL* Insulation excellence**

Thermal Insulation NRP and NSL Being a chemically cross-linked polyethylene foam provide excellent insulation.

see below Comparison table

- 2. No Moisture : A dense independent air cell is perfect with moisture as it can not penetrate the cell
- 3. Semi-Permanence : Chemically cross-linked polyethylene foam will last almost permanently without change due to it's excellent heat proof properties, cold-resistance & durability.
- 4. Flexibility, Anti-noise & vibration properties : both the closed and open cells protect from noise & vibration.

Example: 2mm provides a 21.8 db reduction

- 5. Fire retardant : It is very difficult to light & Releases no toxic smoke when in a fire

Both NRP and Neo have passed Australian Standards Test Method 1530 part 3 as listed below.

Test Report	MEAN		STANDARD ERROR	
	NRP. / NSL.		NRP. / NSL.	
Ignition time	1.7 min	Nil	0.08	Nil
Flame propagation time	Nil s	Nil s	Nil	Nil
Heat release integral	17.6 kJ/m2	Nil. kJ/m2	0.5	Nil
Smoke release, log d	-1.6630	-1.6836	0.0259	0.0419
Optical density. d	0.0219 /m	0.0212 /m		
NRP & NSL Test AS/NZS 1530.3 - 1999				
Simultaneous determination of ignitability flame propagation, heat release and smoke release				

Test Report	NRP	NSL	Range
Spread of Flame Index	0	0	0 - 10
Heat Evolved Index	0	0	0 - 10
Smoke Developed Index	2	2	0 - 10
NRP & NSL Test AS/NZS 1530.3 - 1999			
Simultaneous determination of ignitability flame propagation, heat release and smoke release			

A Various MTL Comparison Table

Item	Density (g/cm3)	Conductivity (Kcal/mh'C)	Water Resistance	Aging
<i>NSL & NRP</i>	0.025	0.029	Excellent	Excellent
Styrofoam	0.030	0.031	Good	Good
Polystyrene foam	0.015	0.031	Good	Good
PU Foam	0.025	0.032	Bad	Bad
Glass Wool	0.01	0.034	Bad	Good

Comparison of Insulation for Panel

Classify		"NSL & NRP"	Glass Wool	Styrofoam (EPS)
Physical Characters	Raw Material	Foaming no toxic polyethylene	Melting scrapped glass mixing with resin	Expanded polystyrene
	Density (g/cm3)	0.029 ~ 35	0.024~32	0.015~20
	Absorption (g/cm3)	0.01%	8%	0.8%
	Thermal conductivity (kcal/mhr'C at 20C)	0.029	0.042	0.076
	Classify	NSL & NRP	Glass Wool	Styrofoam
	Estimated life Cycle	15 years	5 years	10 years
General information	Insulation	Excellent & Stable	Excellent	Excellent
	Heat Resistance	120C	400C	Below 90c
	Anti-condensation	Excellent	Problem	Dew in over-lap part
	Water Proof	Excellent	Problem	*
	Sound Absorption	Excellent	Good	No absorb internal sound
	Anti-chemical	Strong	Strong	Poor/protected by panel
	Anti-fungal	Strong	Weak	*
	Shrinkage	None	Problem	None
	Pollution/Toxic	None	Cancerogenic	Toxic in fire
Inflammability	Non-flammability	Fire Retardant	Fire Retardant	Flammable & Toxic
	Flame protection	Good	Good	*
Construction	Economic Efficiency	Economic	Economic	*
	Construction	Simple, no special clothing needed Favorable in rainy season	Slightly complicated Need skillful workers Coverings & dust masks needed	Special tool & equipment S/B supported on construction
	Working Time	Shortest	Longer	Longer
	Maintenance	Material is flexible/soft. No serious damage could be occurred on construction but handle with care is needed	Damage could be occurred by careless construction. High absorption of water. Trouble with fungus	The glue could be melted in the sun or moisture. Dew in over-lap part. Rain leaks in worse case.
	Repairing	Easy	Difficult	Difficult
Example of Thermal conductivity	The effect of "NSL & NRP" at 10mm is equal to glass wool at 25mm. 5mm PE foam is using at various places for roof/wall at factory, gymnasium, warehouse, farm, train-station, etc			

General		Economic & Simple construction. Excellent insulation. Neat appearance. No water absorption. Anti fungus/chemical Long duration	Economic & slightly complicated construction. Major Problems is high ratio of water-absorption.. Harmful for health. *Carcinogenic	High cost than life span. Internal noise could be amplified by inside panel. Styrofoam can be affected by moisture or uv rays
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NSL Duct insulation excellence

1. Shock absorption
2. Excellent insulation
3. Easy & Convenient for Processing & installation
4. Strong in Chemicals, Temperature extremes & Ageing
5. Excellent Flexibility & Durability

*** Basic Specification**

Item	Thick (mm)	Density (g/cm ³)	Tensile (kg/cm ²)	Thermal conductivity (kcal/mh°C)	Safety Temp. (g/cm ²)	Flexibility
Figure.	5 to 25	0.029	3.4	0.026~29	-100c ~ 80C	Good

High Temp. Duct Insulation

1. Fit for use at high temperature (170'C)
2. Strong resistance for Acid.
3. Good for Shock Absorption.
4. Superior to Heat-Proof.
5. Simple working process.