

FI22 FLEXIBLE DUCTLINER™

Insulation Blanket for Mechanical Services

PRODUCT DESCRIPTION AND TYPICAL APPLICATIONS

Flexible Ductliner™ has an ideal combination of properties for use with automated sheet metal cutting and duct making machinery. It has the high resiliency of a board, while retaining enough flexibility to be used in roll form. When used in this form a continuous length of *Flexible Ductliner* has the benefits of (a) reducing wastage through being able to be cut to varying

lengths and, (b) enabling insulation of L-shaped sections by folding through 90° without cutting.

Flexible Ductliner is also suitable for lagging work (eg. air conditioning ducting) where a 'stiffer' product than the usual FI22 General Purpose and Ductwrap™ is preferred.

PHYSICAL CHARACTERISTICS

Material R-value (m²k/W)	0.7	1.0	1.5
Thickness (mm)	25	38	50
Roll Dimensions (mm)*	20m x 1200	20m x 1200	20m x 1200
Density (kg/m³)	22	22	22
Mass/Unit Area (kg/m²)	0.6	0.8	1.1

*Standard vapour barrier foil laminate facing : Sisalation® Facing Foil Heavy Duty (450).

AVAILABLE FACINGS

Facing on *Ductliners* of all types is primarily used to prevent surface fibre erosion and should be specified where air velocities exceed 6 metres/sec. The following types are available on *Flexible Ductliner*:

Black Tissue - used for the purpose stated above with the added advantage of "blacking out" the insulation surface behind grilles, diffusers and openings.

Perforated Foil - (eg Sisalation® 450) Recommended for use above 10 metres/sec air velocity (see below).

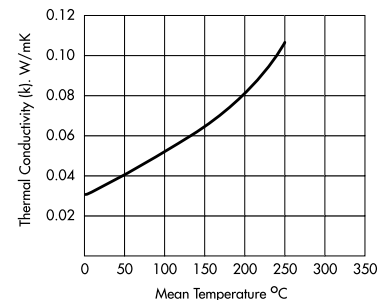
THERMAL CONDUCTIVITY

The R-value of *Flexible Ductliner* is determined in accordance with AS/NZS 4859.1. The thermal conductivity of *Flexible Ductliner* at a mean temperature* 25°C is 0.035 (at 20°C it is 0.034) W/mK when tested in accordance with ASTM C177. Values of thermal conductivity may be obtained from the following graph.

$$\text{*Mean Temperature} = \frac{T1 + T2}{2}$$

Where T1 = temperature of hot side of insulation (°C)

Where T2 = temperature of cool side of insulation (°C)



ACOUSTIC PERFORMANCE

Flexible Ductliner has the following sound absorption coefficients when tested in accordance with AS1045 by the

Reverberation Room Method (Mounting No.4 - laid flat on floor).

Nominal thickness (mm)	Facing	Sound absorption coefficients (reverberation) at frequencies (Hz) of:					
		125	250	500	1000	2000	NRC
25	Black Tissue	0.09	0.28	0.60	0.77	0.90	0.65
25	Perf. Sisalation®	0.12	0.27	0.63	0.89	1.05	0.70

MOISTURE ABSORPTION

Tested in an atmosphere of 65% relative humidity at 20°C in accordance with British Standard 2972.

The moisture content of *FI22 Flexible Ductliner* is less than 0.1% by volume.

BUILDING CODE OF AUSTRALIA (BCA)



The Energy Efficiency provisions of the BCA requires that all insulation complies with the requirements of the Australian/New Zealand standard AS/NZS 4859.1 - Materials for the thermal insulation of buildings. AS/NZS 4859.1 specifies testing and labelling requirements for all types of insulation incorporated into the

building envelope and its services. The thermal resistance (R-value) shown on all labelling must be determined by a recognised laboratory, accredited to test to the relevant standards and procedures. All applicable Fletcher Insulation™ products are independently certified by an accredited organisation to comply with AS/NZS 4859.1.

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Fletcher[™]
Insulation

RECOMMENDED VELOCITIES IN AIR-CONDITIONING DUCTS

Flexible Ductliner has been tested for fibre erosion in accordance with Underwriters Laboratories Standard UL181 - 1972, Section 15 "Standard for Safety - Air Ducts". Black Tissue and perforated foil faced *Flexible Ductliner* has been subjected to velocities of 25 metres/sec, and with a safety factor of 0.4 applied (in

accordance with the above standard), gives a safe working velocity of 10 metres/sec. For higher velocity air flows, plain or Black Tissue faced *Flexible Ductliner* should be used behind perforated metal mechanically fastened to the duct wall.

EARLY FIRE HAZARD RATING

When tested in accordance with AS1530 Part 3 - "Early Fire Hazard Properties of Materials", General Purpose & *Ductwrap* rolls exhibit the following characteristics:

	Plain	Black Tissue Faced	Sisalation® Heavy Duty Faced
Ignitability Index	0	0	0
Spread of Flame Index	0	0	0
Heat Evolved Index	0	0	0
Smoke Developed Index	0-1	2	2

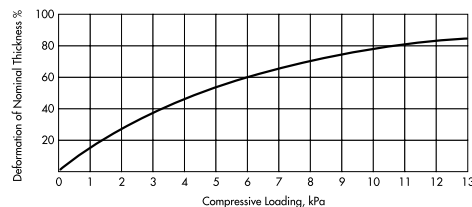
MAXIMUM SERVICE TEMPERATURE

The maximum service temperature for *Flexible Ductliner* is 340°C. However, where a facing is applied to the insulation,

the maximum temperature of the outside surface should be maintained below 70°C.

COMPRESSIVE STRENGTH

Flexible Ductliner has excellent compressive strength and resilience and recovers to its nominal thickness after compression. Deformation under compression loading is shown on the graph.



SPECIFICATION NOTES

State:

- Product name - *Fletcher Insulation FI22 Flexible Ductliner*
- Thickness or thermal and/or acoustic performance required
- Fixing method preferred
- Type or facing required (eg: Perforated Sisalation® 450)

GENERAL INSTALLATION ADVICE

All forms of insulation can be cut with a sharp knife. Cutting with power tools is not recommended. *Flexible Ductliner* for internal application can be bonded directly to duct walls, held in place with metal sections or impaled on spot-welded or adhered

pins. Install insulation in a dry state. If it becomes wet during application, allow to dry completely before installing. Butt edges together firmly at joints to prevent heat leaks.

BIO-SOLUBILITY

Fletcher Insulation glasswool products are manufactured from FBS-1 Bio-Soluble Glass Wool™. FBS-1 Bio-Soluble Glass Wool™ is classified as non-hazardous according to the criteria of the Australian Safety and Compensation Council (formerly

NOHSC), Approved Criteria for Classifying Hazardous Substances (NOHSC:1008) 3rd Edition. *Fletcher Insulation* glasswool is classified as safe to use, refer to our MSDS.



SUSTAINABILITY

Sustainability...measures that satisfy the needs of people today while enhancing the quality of life for future generations. The demands on non-renewable resources for the production of energy are not sustainable without compromising the environment. Insulation, correctly specified and installed, is one of the most critical products in improving energy efficiency and reducing the levels of greenhouse gas emissions. *Fletcher*

Insulation is committed to providing environmentally sustainable products and utilises up to 70% recycled waste glass in the production of glasswool insulation. *Fletcher Insulation* products comply with the GreenStar Insulant ODP Emissions credit requirement, avoiding the use of ozone depleting substances in both manufacture and composition.

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Note: *Fletcher Insulation* (Vic) Pty. Ltd. reserves the right to change product specifications without prior notification. Information in this publication and otherwise supplied to users as to the subject product is based on our general experience and is given in good faith, but because of the many particular factors which are outside our knowledge and control and affect the use of products, no warranty is given or is to be implied with respect to either such information or the product itself, in particular the suitability of the product for any particular purpose. The purchaser should independently determine the suitability of the product for the intended application.

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