



DUCTLINER

PRODUCT DESCRIPTION

Ductliner Unfaced is manufactured from glass wool bonded with a thermosetting resin to form an amber coloured, lightweight, semi-rigid board.

Siliner-Mat Faced is manufactured using Ductliner Baseboard which has adhered to one side a black, puncture resistant, random fibre glass mat.

Ductliner Perforated Foil Faced is manufactured using Ductliner Baseboard which is factory faced with acoustically perforated (approximately 10% free area) Flamestop 530 fire retardant foil laminate. These products are based on a lightweight semi rigid board and are used for internal insulation of sheetmetal ductwork, air conditioning cabinets and plenums to provide acoustic and thermal insulation. In order to prevent any surface erosion they should always be used with a facing on the air stream surface. For applications up to 12.5m/sec Siliner or Ductliner Perforated Foil Faced may be used. Above 12.5m/sec the product should be enclosed with perforated sheetmetal.

APPLICATIONS

Ductliner Unfaced must NOT be used unless protection is provided on the air stream surface because air velocity within the duct may cause surface erosion.

Siliner-Mat Faced is used for internal insulation to sheetmetal ductwork, air conditioning cabinets and plenums to provide excellent acoustic attenuation and thermal insulation eliminating the need for external insulation.

Ductliner Perforated Foil Faced is used as an internal insulation to sheetmetal ducting. In this application it will act both as a thermal insulation and an acoustic absorber. The perforations in the foil give an improved performance at lower frequencies.

PRODUCT BENEFITS

Assures a Quiet Operating System. Excellent acoustical efficiency to absorb fan and equipment noises in ductwork.

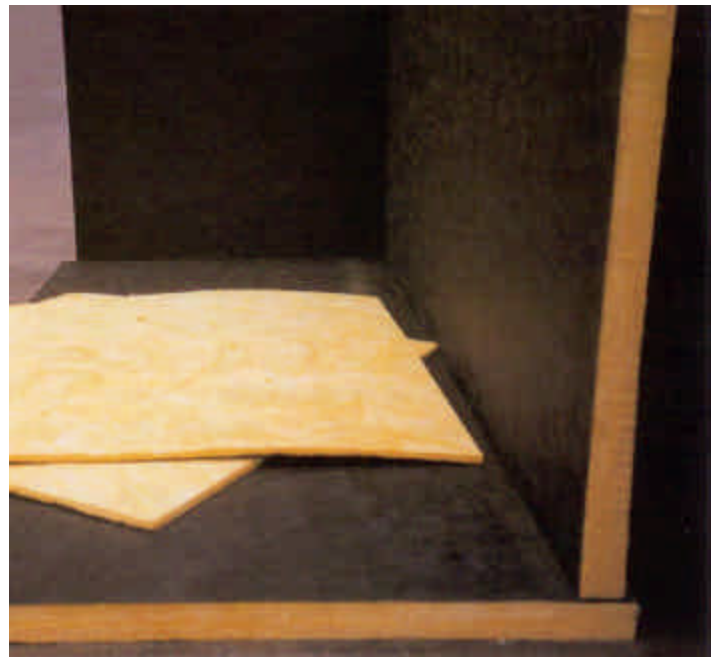
Lower Operating Costs. High thermal efficiency reduces the size of the equipment required for maintaining design comfort levels.

Uniform thickness. The factory controlled uniform thickness means the insulation value remains constant. Internal insulation assures a constant thickness of insulation around the duct perimeter.

No Drumming. The semi-rigid boards add stiffness to the sheetmetal ductwork, reducing drumming and transmission of noise.

Fire Safe. Siliner-Mat Faced as manufactured by Insulation New Zealand will not ignite or spread flame.

No Maintenance. Because insulation is fitted internally in sheetmetal ductwork, it is not exposed to damage by other trades.



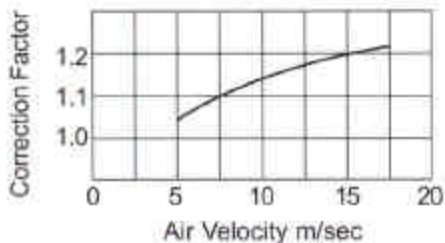
PRODUCT CHARACTERISTICS

Maximum Service Temperature

Ductliner Unfaced	120°C
Siliner Matt Faced	120°C
Ductliner Perforated Foil Faced	
Baseboard	120°C
Foil Facing	60°C

Maximum Air-Stream Velocity. Siliner-Mat Faced can be used in sheetmetal ductwork without further protection up to velocities of 12.5m/sec. For higher velocities further steps must be taken to prevent surface delamination – refer section “Application Recommendations”. Unfaced product must not be used without protection to the air stream surface.

Air Resistance. Siliner-Mat Faced has a resistance to air flow greater than sheetmetal. To determine air flow resistances multiply calculations for sheetmetal ductwork by the correction factors shown in the following graph. These factors will give results, with errors not greater than $\pm 5\%$, within the stated velocity range.



Friction Correction Factors for Straight Ducts

Condensation. The thickness of insulation selected for acoustical performance may not be sufficient to prevent condensation occurring on the exterior of the sheetmetal ductwork. Thus a check should be made to confirm that the insulation is the correct thickness to keep the sheetmetal duct surface above dew point.

Flexibility. This is a semi-rigid product recommended for flat or slightly curved surfaces. It can be formed to smaller radii by scoring the back surface of the board. All gaps must be filled to retain required thermal properties. Minimum radius 600mm.

Curved surfaces. Minimum radius 600mm.

APPLICATION RECOMMENDATIONS

The material shall be fixed in accordance with the company's recommendations for the respective air velocities.

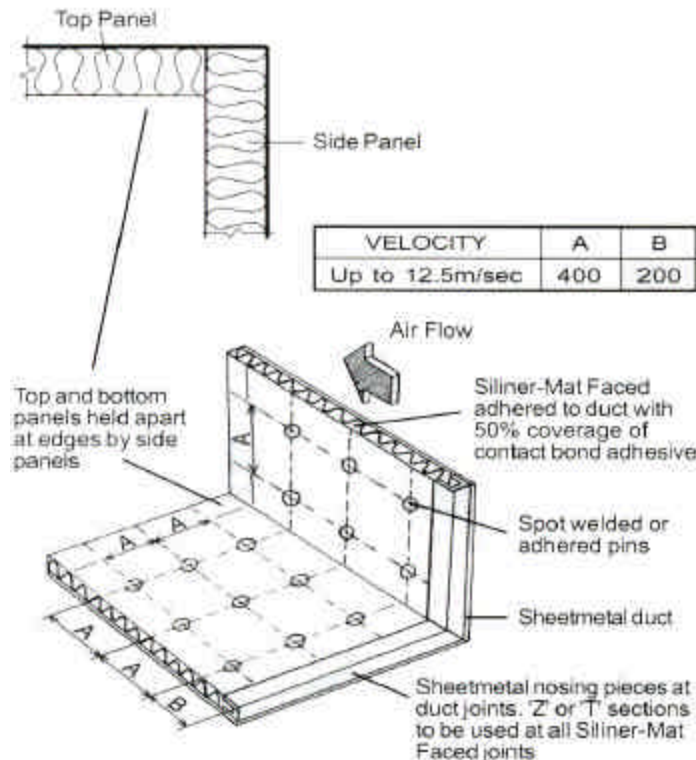
It is important that Siliner-Mat Faced is presented to the air flow in such a way that resistance and abrasion is kept to a minimum.

Siliner should be cut to suit the internal duct dimensions to provide a minimum of butt joints in each section of ducting. All butt joints shall be tightly fitted together and sealed as shown on the following page. At duct section joints U sections should be provided as nosing pieces. Long and trouble free operation will be obtained if all joints are tightly butted and edges sealed. Any deviation from the stated procedure must have the approval of the specifying engineer.

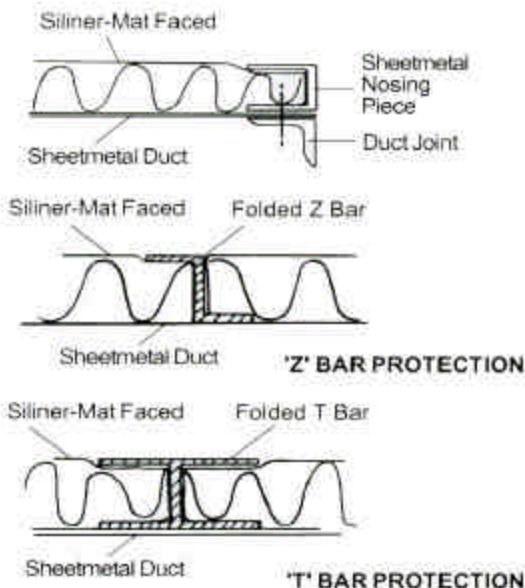


Velocities up to 12.5m/sec

Fix Siliner-Mat Faced to all internal duct surfaces with a 50% coverage of contact bond adhesive and mechanical fasteners (spot welded or adhered pins) at a maximum of 400mm centers on top and bottom of duct where width exceeds 300mm and on sides of duct where depth exceeds 600mm. Longitudinal and circumferential joints should be protected as shown.



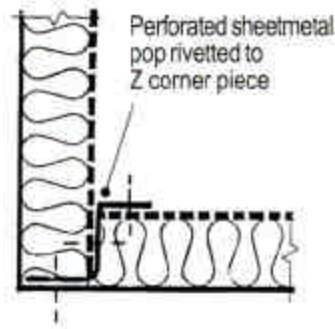
JOINT DETAIL



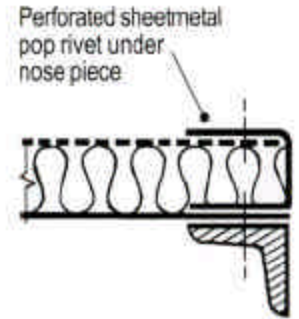
Velocities between 12.5m/sec & 30m/sec

Completely enclose Ductliner or Siliner Mat-Faced with perforated sheetmetal.

CORNER DETAIL

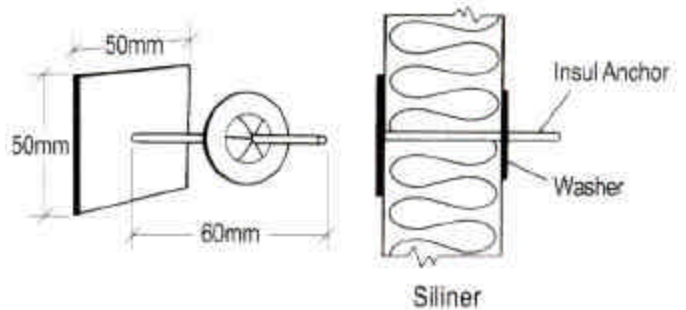


DUCT JOINT DETAIL



Ductliner/Siliner should be fitted and adhered to the internal surface as described before (see Velocities up to 12.5m/sec).

The perforated sheetmetal should be cut and folded to the inside dimensions of the fully lined duct and held in position beneath the turnback of the U nosepiece. Pop rivets should be used to secure the perforated metal to the U section as shown above.



INSULANCHORS

Insul anchors are adhered or screwed to the substrate at 400mm centers in both directions. Siliner/Ductliner Perforated Foil Faced is then impaled onto the pins and the retaining washer pushed into contact with the products surface.

GENERAL

Moisture Absorption. B.S. 2972. Less than 0.2% by volume when held for 96 hours in an atmosphere of 95% relative humidity at 49°C.

Should insulation become damp it must be thoroughly dried before application. Also ensure corrosion has not commenced on equipment.

Odours. Glass wool is odourless and will not absorb from surroundings.

Bacteria and Fungus Resistance. Glass wool insulation does not sustain bacterial or fungal growth.

Packaging. Ductliner/Siliner-Mat Faced is available packed in cardboard cartons and also in larger Tane packs. The number of pieces per carton or pack is quoted on current price list. The method of packaging may be changed without prior notice.

Price. Refer current price list for "Air Conditioning Products".

PRODUCT PERFORMANCE CHART

1. Sound Absorption Coefficients	Frequency HZ						
	125	250	500	1000	2000	4000	NRC
Ductliner Unfaced Plain 25mm	0.07	0.28	0.60	0.83	0.90	0.88	0.65
Ductliner Unfaced Plain 50mm	0.32	0.73	1.00	1.11	1.00	1.06	0.96
<i>Ductliner Unfaced 50mm with Taylor Richardson stock perforated sheetmetal over:-</i>							
Style 0143A (25% free area)	0.36	0.90	1.26	1.30	1.21	1.24	1.14
Style 0119F (6% free area)	0.23	0.74	1.10	1.11	0.97	0.89	0.96
Test results available							
Ductliner Foil Faced 25mm	-	0.15	0.35	0.75	0.90	-	0.54
Ductliner Foil Faced 50mm	-	0.30	0.75	0.90	0.85	-	0.70
<i>* For Ductliner Foil Faced – Results are based on impedance tube testing & indicative only</i>							
Siliner-Mat Faced 25mm	0.06	0.23	0.61	0.88	0.95	0.90	0.65
Siliner-Mat Faced 50mm	0.19	0.76	1.03	1.02	0.95	0.92	0.95
2. Thermal Conductivity							
'K' Value: 0.032 W/m°C at 10°C mean 0.033W/m°C at 25°C mean 0.034W/m°C at 38°C mean							
3. Early Fire Hazard Test							
	500mm	Plain	Faced with Microlith	530/Foil Face			
To A.S 1530 Part 3 1976							
Ignitability Index	(0-20)	0	0	5			
Spread of Flame Index	(0-10)	0	0	0			
Heat Evolved Index	(0-10)	0	0	0			
Smoke Developed Index	(0-10)	0	3	3			
4. Panel Weight							
		25mm	50mm				
		1.12 kg/m2	2.25 kg/m2				
5. Sizes (Special Sizes on application)							
		25mm	50mm				
Ductliner and Siliner Mat Faced		1200mm x 900mm	1200mm x 900mm				
Ductliner and Siliner Mat Faced & Foil Faced		1200mm x 2400mm	1200mm x 2400mm				
All Dimensions are nominal & subject to normal manufacturing tolerances							
Tolerances also apply to microlith facing finish to baseboard.							
6. Packaging							
		25mm	50mm				
Packed in strong cardboard cartons.							
Ductliner & Siliner-Mat Faced (1200mm x 900mm)		Pieces per carton:	20	10			
Ductliner & Siliner-Mat Faced & Foil Faced (1200mm x 2400mm)		Pieces per carton:	8	4			
TANE PACKS							
Ductliner & Siliner-Mat Faced & Foil Faced (1200mm x 2400mm)		Pieces per tane:	50	25			
<i>*NOTE: Test Certificates have been obtained for items 1, 2 and 3 above</i>							

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