

DUCTBOARD™

High Density Glass Wool for Duct Fabrication

PRODUCT DESCRIPTION AND TYPICAL APPLICATIONS

DuctBoard is a composite product manufactured from rigid, high density FBS-1 Bio-Soluble Glass Wool™ and a Sisalation™ 450 foil laminate facing.

DuctBoard can be used to fabricate a complete air duct system with integral thermal, acoustic and condensation insulation properties and is designed for use in commercial, industrial and residential heating, air conditioning and ventilating systems operating at velocities up to

12m/s, 0.5kPa static pressure and maximum air temperature in duct of 120°C.

DuctBoard is easily installed in one operation, even flush against walls and ceilings where there is no necessity to leave space for lagging after the duct is installed.

It is strongly recommended that *DuctBoard* is fabricated and installed in accordance with the manufacturer's instructions.

PHYSICAL CHARACTERISTICS

Standard Thickness (mm)	Standard Sizes (mm)	Nominal Density (kg/m3)	Mass/unit area (kg/m2)
25	2400 x 1200	96	2.8
25	3000 x 1200	96	2.8

EARLY FIRE HAZARD RATING

When tested in accordance with AS1530 Part 3 "Early Hazard Properties of Materials", *Insulation Solutions DuctBoard* exhibits the following characteristics. Tests conducted by AWTA.

Ignitability Index	0
Spread of Flame Index	0
Heat of Flame Index	0
Smoke Developed Index	0-1

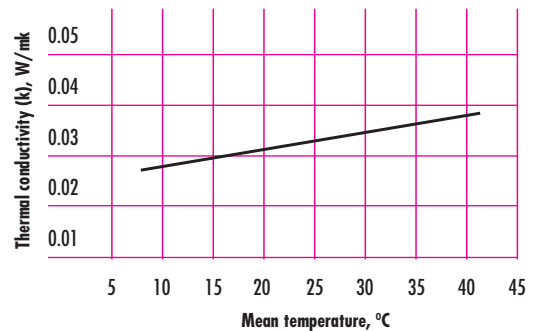
THERMAL CONDUCTIVITY

The thermal conductivity (k) of *DuctBoard* at 20°C mean temperature is 0.032 W/mk. Values of thermal conductivity may be obtained from the graph which is derived from tests performed by the C.S.I.R.O., Division of Applied Physics, in accordance with ASTM C177.

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

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

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



CONDENSATION BARRIER

The *DuctBoard* vapour barrier is *Sisalation 450* reinforced aluminium foil laminate. This vapour barrier has a permeance of less than 1.14 ng/N.

At joints and seams in *DuctBoard Vapastop™* Tape or a suitable equivalent should be used to seal the vapour barrier.

SOUND ATTENUATION

DuctBoard provides excellent sound attenuation. The following design data is based on N.A.T.A. certified laboratory test results using a test method based on BS4718.

The table shows insertion losses measured in a three metre length of duct constructed of 25mm thick *DuctBoard*.

Duct internal dimensions (mm)	Insertion loss (dB) at frequencies of: (Hz)					
	63	125	250	500	1000	2000
900 x 600	3	5	7	16	24	9
800 x 400	7	8	9	18	34	17
300 x 250	13	19	25	33	45	51

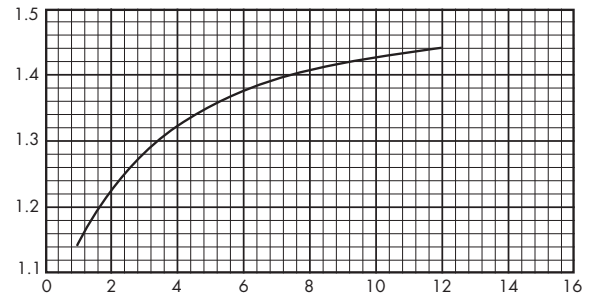
SOUND BREAKOUT

The table gives the sound breakout characteristics of *DuctBoard* when tested and compared with an unlined 0.8mm galvanised steel duct of the same internal dimensions (800mm x 400mm). "Breakout" measurements through the duct walls are in dB. Test performed by ViPAC.

	Centre Frequency (Hz)					
	125	250	500	1000	2000	4000
<i>DuctBoard</i>	22	15	23	18	22	28
Metal Duct	21	26	25	28	32	31

SURFACE FRICTION CORRECTION FACTOR

The graph below shows the friction correction factors for *DuctBoard* at various air velocities. Values obtained from the ASHRAE chart 'Friction of air in straight ducts of galvanised sheet metal' are multiplied by the appropriate correction factor to obtain the correct surface friction value.



DESIGN LIMITATIONS

- **Velocity:** maximum recommended air velocity is 10 metres/sec. (Tested to 25 metres/sec).
- **Static Pressure:** maximum recommended static pressure is 0.50 kPa.

- **Temperature:** maximum recommended temperature in duct is 120°C. *DuctBoard* is not suitable for use within poured concrete slabs or in exposed positions unprotected from the weather.

BIO-SOLUBILITY

The fibre used in this product is *FBS-1 Bio-Soluble Glass Wool* Insulation. This means that it dissolves in bodily fluids and is quickly cleared from the lungs. It complies with the test of short term

biopersistence in Note Q of [NOHSC: 10005 (1999)]. *Glass Wool* is classified as safe to use.



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.

Insulation Solutions is committed to providing environmentally sustainable products and utilises up to 70% recycled waste glass in the production of *Glass Wool* Insulation.