WB-dBFLEX - Aluminum flexible ducts

WB Air
air distribution products
Form Function Reliability

Enhanced Acoustic Applications

Introduction

The WB-dBFLEX is an acoustic flexible duct constructed with a unique sound absorption perforated spun bounded, non woven inner core.

WB-dBFLEX is a fire rated flexible duct manufactured from high quality aluminum reinforced vapor barrier and incorporating a totally encapsulated helically wound high tensile spring steel wire.
Bonded with a fire retardant and slip resistant adhesive, this is the duct for the new millennium.
Environmentally safefrom production to application, day after day , year after year. With it's long strand glasswool, the problem of falling wool is greatly minimised. The WB-dBFLEX is light weight yet suprisingly rigid. It is easy to handle and will maintain the full diameter on standard bends .
The duct is designed for domestic and commercial ventilation and air-conditioning systems. It is ideal for low and medium pressure systems, high pressure systems have been widely used too.
It is recommended for its low resistance , excellent acoustic properties and compliance with relevant standards .

Application

For Low and Medium pressure HVAC systems. Up to a maximum of 2500pa .
Recommended air velocity is 7m/s, but tests on WBFlex is done up to 23m/s.

Size

Standard lengths are 10m for 25mm thick glasswool and 6m for 50mm thick glasswool.
Available from 100mm to 600mm diameters in 50mm increments .

Working Temperature

Between -20 deg C to 82 deg C

Thermal Insulation

WB-dBFLEX with insulation are glasswool applied and sheathed with an outer aluminum laminate vapor barrier .
The thermal resistance values (K) and Thermal Resistance (R) at 24deg C mean temperature are as follows ;

Glasswool Thk/density	K	R	WB Air model
25mm x 32kg/m^3	0.033	0.77	WB-dBFLEX 12
50mm x 32kg/m^3	0.033	1.539	WB-dBFLEX 22

Dia	CMH range
150	0-180
200	181-380
250	381-595
300	596-850
350	851-1190
400	1191-2350

Fire resistance

WB-dBFLEX is tested to BS 476 parts 6 and 7. Complies to Class 0 rating

Packing

Non insulated ducts are compressed to about 300mm to 500mm length.
Insulated ducts are compressed to about 1200mm to 1500mm length.
They are packed in strong plastic sleeves with clearly marked descriptions.

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ACOUSTIC PROPERTIES OF WB-dBFLEX

INSERTION LOSS (dB) IN FORWARD FLOW CONDITIONS FOR 10 FT LENGTH

Dia	Center Frequency HZ	63	125	250	500	1000	2000	4000	8000
6"	1000 FPM	>16	33	39	38	42	48	>48	>33
	1500 FPM	>16	30	37	38	42	48	>48	>33
	2000 FPM	24	28	32	35	39	44	>47	>39
	3000 FPM	15	17	26	36	37	36	33	>32
8"	1000 FPM	9	36	37	36	41	49	35	26
	1500 FPM	21	33	37	36	41	49	37	28
	2000 FPM	18	26	33	36	40	48	38	32
	3000 FPM	13	17	24	36	39	42	36	34
12"	1000 FPM	>16	33	31	28	35	39	24	21
	1500 FPM	>18	32	30	28	35	39	25	22
	2000 FPM	15	28	30	28	35	40	25	22
	3000 FPM	8	21	25	29	34	37	26	26

Note: If data is preceded by the ">" symbol, the actual insertion loss is greater or equal to the data shown. Calculation of insertion loss has been limited by the airflow generated sound pressure level of the duct noise, background noise, or instrumentation.

RADIATED NOISE REDUCTION FOR 10 FT LENGTH

Dia	Center Frequency HZ	63	125	250	500	1000	2000	4000	8000
6"	0 FPM	4	4	4	6	9	11	15	19
	2500 FPM	7	6	5	7	9	11	15	18
8"	0 FPM	4	4	4	6	9	10	13	18
	2500 FPM	3	6	5	6	9	10	13	19
12"	0 FPM	4	5	5	5	6	7	9	11
	2500 FPM	5	7	6	6	6	7	8	11

AIRFLOW GENERATED SOUND POWER LEVEL (DB) FWD FLOW CONDITIONS FOR 10 FT LENGTH

Dia	Center Frequency HZ	63	125	250	500	1000	2000	4000	8000
6"	1000 FPM	<51	<41	<33	<29	<24	<22	<25	<29
	1500 FPM	<52	<43	<39	<37	<31	<26	<25	<29
	2000 FPM	<52	<45	<45	44	<38	<35	<28	<29
	3000 FPM	<55	<52	54	53	<48	<45	<39	<32
8"	1000 FPM	<45	34	26	<23	<17	<17	<21	<27
	1500 FPM	<46	<37	33	<30	<23	<18	<21	<27
	2000 FPM	<48	43	43	39	33	<27	<24	<27
	3000 FPM	<53	52	53	49	<43	<40	<37	<29
12"	1000 FPM	<46	<38	<31	<26	22	19	<22	<27
	1500 FPM	<47	<40	<37	<34	<31	<24	<22	<27
	2000 FPM	<49	<43	<43	<41	<39	<33	<26	<27
	3000 FPM	<56	<52	<52	52	<51	<47	<40	<32

Note : If data is preceded by the "<" symbol, the actual generated sound power level is less than or equal to the data shown. Calculation of generated sound power level has been limited by background noise, or instrumentation.

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PSB Singapore

CERTIFICATE OF CONFORMITY

No. CLS2 13 09 80936 005

Certificate Holder:	**Wong Brothers Pte Ltd** 7 Toa Payoh Industrial Park #01-1245 Singapore 319059 SINGAPORE
Product:	Ductings
Brand Name:	WB AIR
Model(s):	WB-FLEX & WB-dBFLEX
Product Details:	Area Density: 0.685 kg/m² Tested on the aluminium foil face (Rating: Class 0) *Former COC 011268*
Standard(s):	BS 476-6/A1:2009 BS 476-7:1997
Country of Origin	Singapore
Test Report(s):	See COC Appendix (1 pg)
Issued on:	2013-09-04
Valid until:	2016-11-30

Vice-President (Certification Department)
TÜV SÜD PSB