

KoolDuct acoustic performance – SUMMARY

Prepared 25th August 2016

Insertion Losses

Sound pressure losses - difference in sound pressure between the sound power leaving the reference steel duct section and the sound power leaving KoolDuct duct section.

Test on: Duct section 500 x 500 mm x 3m long of KoolDuct 30mm
 Test Standard: Australian Code FD72-R1
 Test Report: J/N:30S-13-0161, dated 5th August 2015

Summary Results:

	INSERTION LOSS, dB					
	Octave Band Centre Frequency, Hz					
	125	250	500	1000	2000	4000
KoolDuct 30mm, no lining	6	2	2	2	2	3

Noise attenuation

The noise attenuation (dB/m) of KoolDuct ducts was found to be slightly better than equivalent unlined sheet metal ducts. Because of the reflecting surfaces of KoolDuct this increase performance would have a negligible effect on the silencing requirements of a typical ventilation system.

Test on: Duct section 250 x 250 mm x 4.5m long of KoolDuct 22mm
 Test Standard:
 Test Report: Brunel University, Experimental study of the acoustic behaviour of KoolDuct, dated 2002-2003

Summary Results:

	Attenuation per Meter Length of 250 x 250 KoolDuct Straight Section using white noise test								
	Frequency, Hz								
	0	100	200	300	400	500	1000	2000	3000
KoolDuct 22mm	0.00	0.26	1.17	1.00	1.24	2.87	0.34	0.84	1.54

Noise absorption

The noise absorption coefficient of the KoolDuct panel was found to be 0.06 to 0.08 Sabins/ft², achieving a Noise Reduction Coefficient NRC of 0.05

Test on: Flat panel KoolDuct 22mm x 3930 x 1200 mm

Test Standard: ASTM C423-02

Test Report: 3079923-001 dated August 8, 2005

Summary Results:

Absorption Coefficients – Sabins/ft ²								
		1/3 Octave Band Center Frequency, Hz						
Test #	Identification	125	250	500	1000	2000	4000	NRC
1	Sample A	0.00	0.02	0.02	0.11	0.15	0.13	0.05
2	Sample B	-0.06	-0.06	0.00	0.13	0.15	0.12	0.05
3	Sample C	-0.08	-0.02	0.02	0.12	0.12	0.11	0.05

Sound reduction index

Test on: Flat panel KoolDuct 20mm x 2100 x 1300mm

Test Standard: BS 2750:1980, ISO 140/3

Test Report: C/93/5L/1477/1 dated 19th April 1994

Summary Results:

Sound Reduction Index Measurement, dB	
Average SRI (100-3150 Hz)	14.1
Weighted SRI, R _w (BS 5821: Part 1)	17

Note on Vibration

KoolDuct walls are not a source of noise due to vibration. KoolDuct does not suffer from drumming like galvanised metal as it is a rigid product with wall thickness 22mm or 30mm (7/8" or 1 3/16") dependent on thermal requirement.