

Tecsonic 400S

Description

Tecsonic 400S is a high quality fully flexible acoustic ducting with an acoustically transparent interliner between the inner core and fibreglass layers. It is ideal for use in low and medium pressure ventilation and air conditioning systems where attenuation of duct borne noise is required.



Construction

Tecsonic 400S is constructed in a similar manner to Tecsonic 400 but with the addition of an acoustically transparent interliner between the inner core and fibreglass layers. This interliner allows for a good acoustical performance yet shields the airstream from the fibreglass and prevents the possibility of fibre migration into the airstream.

This feature makes Tecsonic 400S especially suitable for specialist applications e.g. Food preparation, clean rooms etc. Like Tecsonic 400 this construction still provides a highly flexible duct in which bends of $1/2D$ radius can be produced.

Specification

Acoustic flexible ducting for joints or connections shall be TECSONIC 400S. It shall be manufactured with an aluminium/polyester inner core continuously perforated and wrapped with an acoustically transparent interliner. The interliner shall be covered by an overlapped fibreglass blanket with an outer jacket constructed from a reinforced aluminium fabric. The duct shall meet the time requirements of BS476 parts 6 & 7.

Packaging

Tecsonic 400S is supplied, as standard, in 10 metre lengths. Each length is individually cartoned and labelled. Storage space required is kept to a minimum with a 10 metre length being compressed to 1150mm.

Technical Data

Diameter Range: 100mm to 500mm
 Temperature Range: From -30°C to +120°C
 Air Velocity: 15 m/s maximum
 Working Pressure: 1000 Pa maximum
 Fibreglass: 25mm thk. 16Kg/m³ density
 Outer Jacket: Scuff resistant reinforced aluminium laminate fabric
 Colour: Metallic silver
 Standard Length: 10 metres

Acoustic Performance

Sound attenuation chart for Tecsonic 400 insulated flexible duct - perforated aluminium and polyester laminate Fibreglass is 16kg/m³ with R Value .0392 W/Mk.

The results below give the reduction in noise in comparison to the measurement of sound power levels at Length = 0.

Dia	Duct Length m	63 Hz	125 Hz	250 Hz	500 Hz	1K Hz	2K Hz	4K Hz	8K Hz	dB(A)
82	0	69	81	76	64	65	64	60	56	79
	1	60	62	58	45	37	36	43	41	58
	3	55	58	55	39	31	31	31	24	54
102	0	69	81	75	63	66	65	58	58	79
	1	60	63	57	46	36	36	43	43	58
	3	58	58	55	41	33	32	31	24	54
127	0	70	81	77	65	65	64	64	55	79
	1	59	62	59	44	38	36	44	43	58
	3	53	58	54	39	31	32	31	21	53
152	0	67	81	77	65	63	64	58	56	79
	1	60	60	58	45	38	37	43	38	58
	3	53	59	57	36	30	30	30	27	55
203	0	67	79	78	67	61	66	67	57	79
	1	57	64	63	49	42	49	55	43	63
	3	45	57	58	40	32	34	33	30	56
254	0	63	77	77	66	57	56	62	54	77
	1	54	63	63	49	39	40	51	41	62
	3	43	58	58	42	30	31	39	31	56
315	0	67	76	75	66	54	61	64	53	76
	1	52	64	64	50	36	45	49	43	63
	3	44	57	57	42	31	31	40	33	55
356	0	59	74	73	62	51	57	61	51	74
	1	54	63	63	51	39	44	50	40	63
	3	43	57	57	42	32	34	43	35	56
406	0	63	76	75	65	54	58	62	53	76
	1	53	63	63	50	38	43	50	41	63
	3	43	57	57	42	31	32	41	33	56

Note: Care should be taken when estimating the attenuation of ducts of different lengths; the results are not linear. The possibility of noise 'break-out' should also be taken into consideration at the design stage since there may be some noise emission into the surrounding air space. Wherever possible acoustic ducting should be installed in a part of the building where noise break-out is not of concern or above an acoustic/insulated ceiling to prevent noise reaching the occupied areas.

Installation

Fully extend ducting, then cut to exact length required using a sharp knife and pliers. Pull back fibreglass insulation and tape the inner core to the spigot. Then tape and clamp the outer jacket and inner core to the spigot.

Tecflex, Tectherm & Tecsonic 400S

Fire Test Data

Lindab Tecflex400, Tectherm 400 and Tecsonic 400 have been independently tested by Exova Warrington Fire and have achieved BS476 Parts 6 & 7. Copies of the relevant Fire test reports are available on request.

Pressure Loss

Pressure drop in flexible duct varies significantly from the data given below if the duct is not fully extended when installed. Typically a duct which is 90% extended can result in an increased pressure drop of up to 80%. A duct which is 75% extended could result in a pressure drop variance of as much as 200%. This information applies to all types of flexible duct and illustrates the importance of careful installation. The pressure loss graph below is based on fully extended straight flexible ducting, per metre.

Mounting Instructions –

Recommendations

- 1 Ducting must always be installed fully extended to produce the best results.
- 2 Hanging straps should be at least 25mm wide.
- 3 The distance between supports will vary according to the diameter of ducting. As a guide, on straight runs, supports should be at approx. 1 metre centres. Keep duct sag to a minimum.
- 4 Ensure that when making connections the flexible duct is not over stressed.
- 5 Ensure that flexible ducting is not in contact with sharp objects which may puncture the duct when the system is commissioned.
- 6 Ensure that ducting is not placed on un-insulated steam or hot process pipes.
- 7 Connections to heater batteries should not be made using flexible duct.

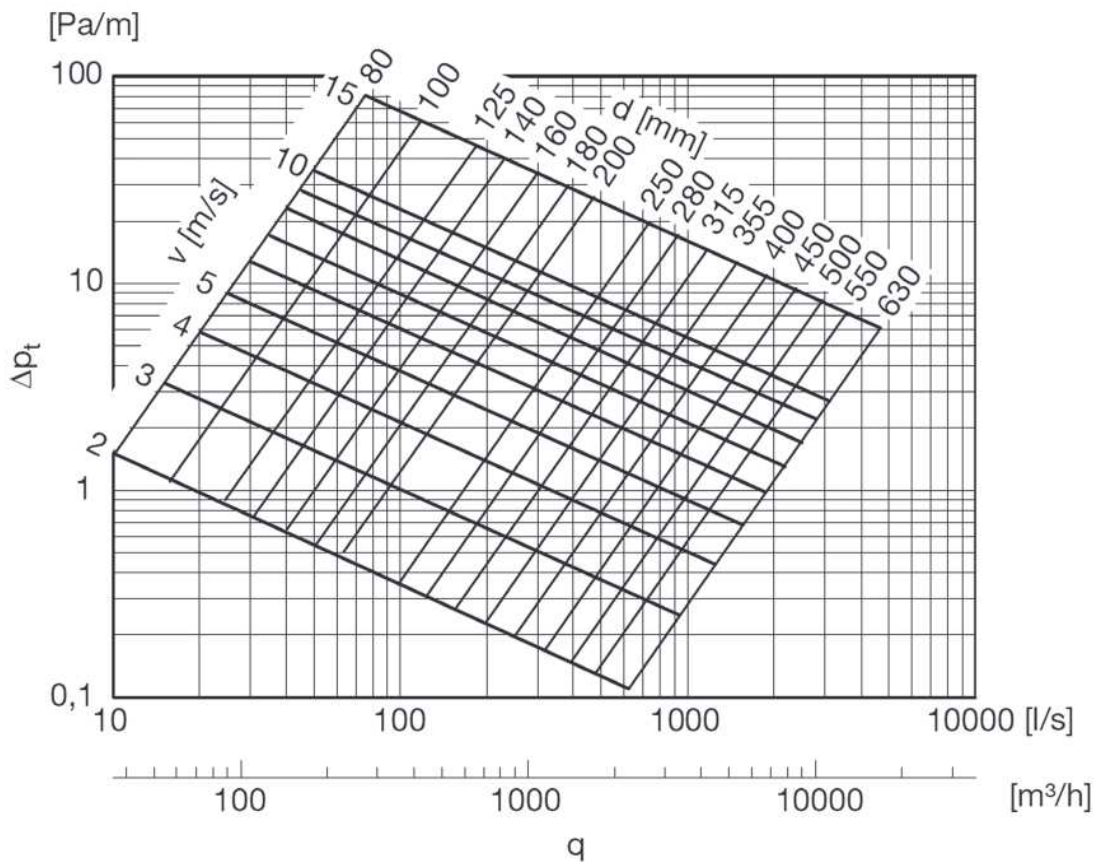


Diagram 1: Pressure drop chart

Other Flexible Duct Products available from Lindab



Tecflex 800S

A highly flexible fabric ducting manufactured from a tough grey coloured PVC coated woven glass cloth fabric supported by an encapsulated high tensile steel wire helix.



Tecflex PU

Tecflex PU Ducting is manufactured from a springsteel wire helix, covered with a highly durable natural clear polyurethane membrane. Tecflex PU is an excellent abrasion resistant ducting with a working life many times longer than its PVC equivalents. Ideal for wood working, dust extraction, plastic granules, abrasive powders, etc.



Tecflex VF

Tecflex VF Ducting is manufactured from a PVC coated spring steel wire helix, covered with a high grade PVC material, heat welded to a form of continuous surface.

Tecflex VF ducting is specifically designed for efficient air, fume, dust and abrasive particle extraction.



Tecflex 500

Semi rigid flexible ducting manufactured from corrugated aluminium strip spirally wound to produce a double overlapped joint ensuring durability in use. Tecflex 500 has an operating temperature range of -30 to +250°C and a maximum operating pressure of 2000Pa. Tecflex 500 is supplied loose in 3m lengths compressed to 0.8m.

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