ductmann

Acoustics

Circular Duct Silencers (Code SIL)

I.D.	O.D.	L	Ordering Code	Silencer Insertion Loss Octave-Band Mid Frequencies Hz 125	250	500	1K	2K	4K	Kg
100	200	300	SIL0100-03	5	8	13	19	23	16	2.5
		600	SIL0100-06	7	13	25	32	29	23	4
		900	SIL0100-09	9	23	31	36	31	27	6.6
		1200	SIL0100-12	11	24	35	38	37	36	9
125	225	300	SIL0125-03	3	7	13	16	17	17	4
		600	SIL0125-06	5	12	21	31	34	30	5
		900	SIL0125-09	7	16	28	37	37	32	8
		1200	SIL0125-12	9	19	33	39	39	35	10
150	250	300	SIL0150-03	3	8	11	14	15	13	4
		600	SIL0150-06	5	11	20	28	32	24	6
		900	SIL0150-09	8	14	25	38	37	24	9
		1200	SIL0150-12	10	18	33	38	40	33	11
160	260	300	SIL0160-03	3	7	11	13	16	13	4
		600	SIL0160-06	5	11	21	28	30	25	6
		900	SIL0160-09	7	14	25	37	36	25	9
		1200	SIL0160-12	8	18	32	40	42	32	11
200	300	300	SIL0200-03	2	5	9	14	17	13	5
		600	SIL0200-06	4	8	15	25	24	19	8
		900	SIL0200-09	7	10	21	32	33	21	11
		1200	SIL0200-12	9	15	24	35	35	24	12
250	350	300	SIL0250-06	2	4	10	15	15	14	5
		600	SIL0250-06	5	8	14	21	16	15	9
		900	SIL0250-09	7	11	20	27	23	17	13
		1200	SIL0250-12	9	13	25	34	29	20	16
300	400	300	SIL0300-03	1	4	10	14	15	10	6
		600	SIL0300-06	3	7	13	18	17	11	12
		900	SIL0300-09	5	9	17	23	19	14	18
		1200	SIL0300-12	5	11	21	28	22	16	24
315	415	300	SIL0315-03	1	4	10	14	15	10	6
		600	SIL0315-06	3	7	13	18	17	11	12
		900	SIL0315-09	5	9	17	23	19	14	18
		1200	SIL0315-12	5	11	21	28	22	16	24
355	455	300	SIL0355-03	1	3	10	13	13	12	7
		600	SIL0355-06	3	6	13	17	15	12	13
		900	SIL0355-09	4	9	16	21	18	14	16
		1200	SIL0355-12	4	9	19	24	21	15	22
400	500	300	SIL0400-03	2	3	9	12	12	9	8
		600	SIL0400-06	2	5	10	14	13	10	16
		900	SIL0400-09	4	7	14	18	15	11	24
		1200	SIL0400-12	4	8	16	22	17	11	31

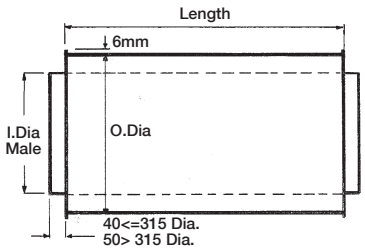
Designed by an independent acoustic consultant, data being derived from tests meeting the requirements of BS 4718:1971 (static tests)
Acoustic media 45kg/m^3 Rockwool infill. The material is inert, vermin, rot & moisture proof, non-combustible and does not support bacterial growth.

To prevent air erosion the acoustic media is faced with glass fibre tissue or Melinex for easy cleaning.

Pod and outer casing encased in expanded metal or perforated sheet minimum 0.7mm thick. Maximum velocity through silencer not to exceed 30 m/sec.

OPTIONS

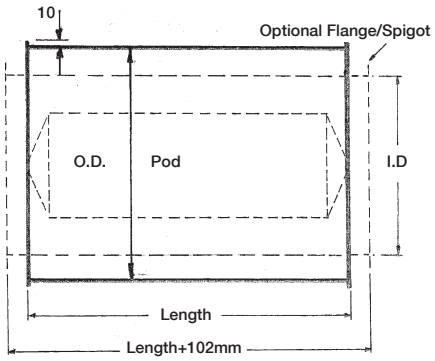
Powder coating to any RAL colour
Clorinated rubber finish
Stainless steel
Fire Rated Casing tested to EN 1366 Part 1
Melinex Lining (Consult our Sales)
Choice of connections, spigots, Doby
Mezz, Ductmate, nut inserts
Drilled to clients p.c.d



CODE SIL

Circular Straight Through Duct Silencers (Code ST)

I.D.	O.D.	L	Ordering Code	Silencer Insertion Loss Octave-Band Mid Frequencies Hz 63	125	250	500	1K	2K	4K	8K	Kg
315	515	315	ST0315-L	2	3	6	10	13	10	6	4	12
		630	ST0315-2L	4	5	10	20	22	13	10	8	20
355	555	355	ST0350-L	2	3	6	10	13	10	6	4	14
		710	ST0350-2L	4	5	10	18	22	15	11	8	24
400	600	400	ST0400-L	2	3	6	10	13	10	6	4	17
		800	ST0400-2L	4	5	10	18	22	15	11	8	28
450	650	450	ST0450-L	2	3	6	10	13	10	6	4	20
		974	ST0450-2L	4	6	11	21	22	15	11	8	36
500	700	500	ST0500-L	2	4	6	12	13	9	6	4	23
		974	ST0500-2L	4	7	11	21	22	15	11	7	39
560	760	560	ST0560-L	2	4	6	12	13	9	6	4	32
		1214	ST0560-2L	4	7	11	21	22	15	11	7	58
630	830	630	ST0630-L	2	4	7	13	14	8	6	4	38
		1214	ST0630-2L	4	7	12	21	22	12	11	7	64
710	910	710	ST0710-L	2	4	7	13	14	8	5	4	46
		1464	ST0710-2L	4	7	12	21	22	12	11	7	82
800	1000	800	ST0800-L	2	4	7	13	13	7	5	4	55
		1600	ST0800-2L	4	7	12	21	21	11	10	7	98
900	1100	900	ST0900-L	2	4	7	13	12	6	5	4	75
		1800	ST0900-2L	4	7	11	21	20	10	9	7	135
1000	1200	1000	ST1000-L	2	5	7	13	11	6	4	3	89
		2000	ST1000-2L	4	8	13	21	18	12	8	7	162



CODE ST & SP

For drilling details see page 6

The acoustic and aerodynamic performance very much depends on unrestricted outlets, avoid Vcd's, bends ie; noise generated obstructions near to silencer discharge.
Pressure drop through SIL & SP silencers can be calculated as straight ductwork.

Circular Duct Silencers (Code SP) Pod Type

I.D.	O.D.	L	Code	Silencer Insertion Loss Octave-Band Mid Frequencies 63	125	250	500	1K	2K	4K	8K	Kg
315	515	315	SP0315-L	3	5	8	11	19	20	15	14	15
		630	SP0315-2L	4	9	13	20	32	34	27	25	23
355	555	355	SP0350-L	3	5	8	11	19	20	15	14	17
		710	SP0350-2L	4	9	13	20	32	34	27	25	27
400	600	400	SP0400-L	3	5	8	11	19	20	15	14	20
		800	SP0400-2L	4	9	13	20	32	34	27	25	33
450	650	450	SP0450-L	3	5	8	13	20	20	17	14	24
		974	SP0450-2L	5	9	13	22	31	33	27	25	42
500	700	500	SP0500-L	3	5	8	14	20	20	16	12	28
		974	ST0500-2L	5	9	14	24	32	33	27	21	45
560	760	560	SP0560-L	3	5	8	14	20	20	16	12	38
		1214	SP0560-2L	5	9	14	24	32	33	27	21	68
630	830	630	SP0630-L	3	6	9	15	22	20	16	12	46
		1214	SP0630-2L	5	10	15	25	33	30	26	21	75
710	910	710	SP0710-L	3	6	9	16	22	19	15	12	56
		1464	SP0710-2L	5	10	16	26	33	30	26	21	99
800	1000	800	SP0800-L	3	6	10	16	21	18	14	12	70
		1600	SP0800-2L	5	10	16	25	28	24	18	16	120
900	1100	800	SP0900-L	4	6	10	16	20	16	14	12	95
		1800	SP0900-2L	5	10	16	25	28	24	18	15	165
1000	1200	1000	SP1000-L	5	6	10	20	19	15	13	11	115
		2000	SP1000-2L	7	11	19	26	27	24	18	15	200

Figures based on an axial blade pitch angle of 20 Deg. over 20 Deg. the accoustic performance will marginally diminish and visa versa

Standard Temp. range -40 to 200 Deg. C
Maximum velocity 30m/sec

Manufactured to DW144 Class C

Maximum volume in m^3/sec through Pod silencers (Code SP)

Diameter	NC / Pa	25 / 25	30 / 37	35 / 50	40 / 62	45 / 75	50 / 100	55 / 125
315		0.588	0.709	0.836	0.940	1.061	1.200	1.355
355		0.747	0.901	1.062	1.194	1.348	1.524	1.721
400		0.834	1.005	1.185	1.332	1.504	1.700	1.921
450		0.949	1.144	1.348	1.516	1.711	1.934	2.185
500		1.200	1.448	1.707	1.918	2.166	2.448	2.766
560		1.859	2.242	2.643	2.971	3.354	3.791	4.283
630		2.353	2.837	3.345	3.760	4.244	4.798	5.421
710		2.988	3.604	4.248	4.776	5.391	6.094	6.885
800		3.794	4.575	5.393	6.063	6.844	7.737	8.741
900		4.802	5.790	6.826	7.674	8.662	9.792	11.063
1000		5.928	7.149	8.427	9.473	10.694	12.089	13.658

To obtain air resistance for Code 2L long silencers multiply Pa above by 1.2

TABLE 1 Guide Noise Levels

NC	Environment
55-75	Factory (heavy Engineering)
45-65	Factory (light Engineering)
40-50	Kitchens
35-50	Swimming Pools, Sports Areas
35-45	Restaurants,Bars,Cafeterias,Canteens,Department Stores, Shops, General Offices
40-50	Mechanised Offices
30-35	Private Offices, Libaries, Courtrooms, Schoolrooms, Cinemas
25-35	Hospital Wards & Operating Theatres,Homes,Bedrooms
25-30	Theatres, Assemble Halls, Churches
20-25	Concert Halls,Opera Halls
15-20	Broadcasting & Recording Studios

	Mid-Frequency Octave Band (Hz) 63	125	250	500	1k	2k	4k	8k
NC55	74	67	62	58	56	54	53	52
NC50	71	64	58	54	51	49	48	47
NC45	67	60	54	49	46	44	43	42
NC40	64	57	50	45	41	39	38	37
NC35	60	52	45	40	36	34	33	32
NC30	57	48	41	35	31	29	28	27
NC25	54	44	37	31	27	24	22	21
NC20	51	40	33	26	22	19	17	16

Rectangular Silencers

At design stage to facilitate selection of a fan and it's noise level we allow initially 50Pa for each silencer

Model	Length	Code	Insertion Loss dB Octave Band Centre Frequencies Hz 63	125	250	500	1k	2k	4k	8k
R75	600	R75/600	5	8	15	26	34	33	27	20
	900	R75/900	7	11	22	36	43	41	36	27
	1200	R75/1200	8	14	28	44	50	50	44	32
	1500	R75/1500	10	17	33	50	50	50	48	38
	1800	R75/1800	12	21	38	50	50	50	50	43
	2100	R75/2100	15	24	47	50	50	50	50	47
	2400	R75/2400	17	27	50	50	50	50	50	50
R100	600	R100/600	5	7	13	22	28	28	22	16
	900	R100/900	6	10	20	31	40	37	29	21
	1200	R100/1200	7	12	25	40	45	46	34	26
	1500	R100/1500	8	15	30	47	49	49	42	30
	1800	R100/1800	9	19	34	50	50	50	44	32
	2100	R100/2100	11	20	40	50	50	50	45	35
	2400	R100/2400	12	24	44	50	50	50	50	40
R150	600	R150/600	4	6	11	17	22	20	14	11
	900	R150/900	5	8	14	24	31	26	18	14
	1200	R150/1200	6	10	17	30	34	33	22	16
	1500	R150/1500	7	12	21	35	45	40	26	18
	1800	R150/1800	8	14	24	42	49	47	31	20
	2100	R150/2100	9	16	29	47	50	50	37	22
	2400	R150/2400	10	18	36	46	50	50	40	24
R200	600	R200/600	4	6	9	13	17	13	10	6
	900	R200/900	5	7	13	20	23	18	13	8
	1200	R200/1200	6	9	14	25	28	24	17	10
	1500	R200/1500	7	9	17	29	34	29	20	11
	1800	R200/1800	8	11	20	29	42	32	22	14
	2100	R200/2100	8	13	24	41	48	38	25	15
	2400	R200/2400	9	16	26	45	49	43	28	17

Designed by an independent acoustic consultant data being derived from tests meeting the requirments of BS 4718:1971 (static tests)
Acoustic media 45kg/m^3 Rockwool infill.
The material is inert, vermin, rot & moisture proof, non-combustible and does not support bacterial growth.
To prevent air erosion the acoustic media is faced with glass fibre or Melinex for easy cleaning.
Splitters are faced in expanded metal or perforated sheet minimum 0.7mm thick

For Melinex lining please consult our sales for the insertion loss data

Quick selection.. method using the most common models R100 & R150 length of siliencer shown in mm.

TABLE 2

Model	NC35 Fan Static Pressure Pa 250	500	1000	NC40 250	500	1000	NC45 250	500	1000
R100	1200	1200	1500	1200	1200	1500	900	1200	1500
R150	1500	1800	2100	1500	1800	2100	1500	1800	2100

1 Select NC level for condition room table1 page 2

2 Using calculated Fan Static Pressure having included 50Pa per silencer read off appropriate model and silencer length from table 2

3 Consult Model R100 or R150 tables on pages 4 and 5 using volume of system in M3/s select suitable cross section of silencer to suit site space available .

Rectangular Silencers

Model	width	height	
R100/1200/	600/	1200	(Specify options Melinex,Fire Rated,special finishes etc.)

Model R75 (m3/sec based on 1200mm long silencer)

Pressure Loss Pa	15	25	35	50	60	75	85	100	110	125
Face Velocity m/s	1.64	2.06	2.45	2.92	3.22	3.59	3.82	4.00	4.30	4.60

Width	Height	m^3/sec									
		NC Level									
mm	mm	15	25		30		35		40		Kg
275	150	0.07	0.09	0.10	0.12	0.13	0.15	0.16	0.17	0.18	0.19	15
	300	0.14	0.17	0.20	0.24	0.27	0.30	0.32	0.33	0.35	0.38	21
	450	0.20	0.26	0.30	0.36	0.40	0.44	0.47	0.50	0.53	0.57	26
	600	0.27	0.34	0.40	0.48	0.53	0.59	0.63	0.66	0.71	0.76	32
	750	0.34	0.43	0.51	0.60	0.66	0.74	0.79	0.83	0.89	0.95	40
	900	0.41	0.51	0.61	0.72	0.80	0.89	0.95	0.99	1.06	1.14	46
550	300	0.27	0.34	0.40	0.48	0.53	0.59	0.63	0.66	0.71	0.76	35
	450	0.41	0.51	0.61	0.72	0.80	0.89	0.95	0.99	1.06	1.14	44
	600	0.54	0.68	0.81	0.96	1.06	1.18	1.26	1.32	1.42	1.52	53
	750	0.68	0.85	1.01	1.21	1.33	1.48	1.58	1.65	1.77	1.90	65
	900	0.81	1.02	1.21	1.45	1.59	1.78	1.89	1.98	2.13	2.28	75
	1050	0.95	1.19	1.41	1.69	1.86	2.07	2.21	2.31	2.48	2.66	84
825	450	0.61	0.77	0.91	1.09	1.19	1.33	1.42	1.49	1.60	1.71	63
	600	0.81	1.02	1.21	1.45	1.59	1.78	1.89	1.98	2.13	2.28	74
	750	1.01	1.28	1.52	1.81	1.99	2.22	2.36	2.48	2.66	2.85	92
	900	1.22	1.53	1.82	2.17	2.39	2.66	2.84	2.97	3.19	3.41	104
	1050	1.42	1.79	2.12	2.53	2.79	3.11	3.31	3.47	3.73	3.98	123
	1200	1.62	2.04	2.42	2.89	3.18	3.55	3.78	3.96	4.26	4.55	135
1100	600	1.08	1.36	1.62	1.93	2.12	2.37	2.52	2.64	2.84	3.03	102
	750	1.35	1.70	2.02	2.41	2.65	2.96	3.15	3.30	3.55	3.79	125
	900	1.62	2.04	2.42	2.89	3.18	3.55	3.78	3.96	4.26	4.55	140
	1050	1.89	2.38	2.83	3.38	3.71	4.14	4.41	4.62	4.97	5.31	155
	1200	2.16	2.73	3.23	3.86	4.24	4.73	5.04	5.28	5.68	6.07	170
	1350	2.43	3.07	3.64	4.34	4.77	5.33	5.67	5.94	6.39	6.83	201
1375	750	1.69	2.13	2.53	3.02	3.32	3.70	3.94	4.13	4.44	4.74	151
	900	2.03	2.55	3.03	3.62	3.98	4.44	4.73	4.95	5.32	5.69	169
	1050	2.37	2.98	3.54	4.22	4.64	5.18	5.52	5.78	6.21	6.64	188
	1200	2.70	3.41	4.04	4.82	5.31	5.92	6.30	6.60	7.10	7.59	206
	1350	3.04	3.83	4.55	5.43	5.97	6.66	7.09	7.43	7.98	8.54	244
	1500	3.38	4.26	5.05	6.03	6.63	7.40	7.88	8.25	8.87	9.48	262
1650	900	2.43	3.07	3.64	4.34	4.77	5.33	5.67	5.94	6.39	6.83	214
	1050	2.84	3.58	4.24	5.07	5.57	6.21	6.62	6.93	7.45	7.97	236
	1200	3.25	4.09	4.85	5.79	6.37	7.10	7.57	7.92	8.52	9.10	258
	1350	3.65	4.60	5.46	6.51	7.16	7.99	8.51	8.91	9.58	10.24	304
	1500	4.06	5.11	6.06	7.24	7.96	8.88	9.46	9.90	10.64	11.38	326
	1650	4.46	5.62	6.67	7.96	8.75	9.76	10.40	10.89	11.71	12.52	348
	1800	4.87	6.13	7.27	8.68	9.55	10.65	11.35	11.88	12.77	13.66	370
1925	1050	3.31	4.17	4.95	5.91	6.50	7.25	7.72	8.09	8.69	9.29	270
	1200	3.79	4.77	5.66	6.75	7.43	8.28	8.83	9.24	9.94	10.62	295
	1350	4.26	5.37	6.36	7.60	8.36	9.32	9.93	10.40	11.18	11.95	347
	1500	4.73	5.96	7.07	8.44	9.28	10.36	11.03	11.55	12.42	13.28	372
	1650	5.21	6.56	7.78	9.29	10.21	11.39	12.14	12.71	13.66	14.60	397
	1800	5.68	7.15	8.49	10.13	11.14	12.43	13.24	13.86	14.90	15.93	422
	1950	6.15	7.75	9.19	10.97	12.07	13.46	14.34	15.02	16.14	17.26	461
	2100	6.63	8.35	9.90	11.82	13.00	14.50	15.45	16.17	17.39	18.59	486
2200	1200	4.33	5.45	6.47	7.72	8.49	9.47	10.09	10.56	11.35	12.14	332
	1350	4.87	6.13	7.27	8.68	9.55	10.65	11.35	11.88	12.77	13.66	391
	1500	5.41	6.81	8.08	9.65	10.61	11.84	12.61	13.20	14.19	15.17	419
	1650	5.95	7.49	8.89	10.61	11.67	13.02	13.87	14.52	15.61	16.69	447
	1800	6.49	8.18	9.70	11.58	12.73	14.20	15.13	15.84	17.03	18.21	475
	1950	7.03	8.86	10.51	12.54	13.79	15.39	16.39	17.16	18.45	19.73	518
	2100	7.57	9.54	11.31	13.51	14.86	16.57	17.65	18.48	19.87	21.24	546
	2250	8.11	10.22	12.12	14.47	15.92	17.75	18.91	19.80	21.29	22.76	574
2475	1350	5.48	6.90	8.18	9.77	10.74	11.98	12.77	13.37	14.37	15.36	435
	1500	6.09	7.66	9.09	10.85	11.94	13.31	14.19	14.85	15.97	17.07	466
	1650	6.69	8.43	10.00	11.94	13.13	14.65	15.60	16.34	17.56	18.78	497
	1800	7.30	9.20	10.91	13.02	14.32	15.98	17.02	17.82	19.16	20.48	527
	1950	7.91	9.96	11.82	14.11	15.52	17.31	18.44	19.31	20.76	22.19	576
	2100	8.52	10.73	12.73	15.20	16.71	18.64	19.86	20.79	22.35	23.90	607
	2250	9.13	11.50	13.64	16.28	17.91	19.97	21.28	22.28	23.95	25.61	637
	2400	9.74	12.26	14.55	17.37	19.10	21.30	22.70	23.77	25.55	27.31	668

Adustments to Pa at various lengths

Length	600	900	1200	1500	1800	2100	2400
	x0.72	x 0.86	0	x1.15	x1.29	x1.44	1.58

For 90 Degree bend silencers add f50% to pressure drop

Model R100 (m^3/sec based on 1200mm long silencer)

Pressure Loss Pa	15	25	35	50	60	75	85	100	110	125
Face Velocity m/s	2.12	2.75	3.32	3.87	4.20	4.70	5.00	5.40	5.57	6.00

Width	Height	m^3/sec										
		NC Level										
mm	mm	15	25		30		35		40			Kg
300	150	0.10	0.12	0.15	0.17	0.19	0.21	0.23	0.24	0.25	0.27	16
	300	0.19	0.25	0.30	0.35	0.38	0.42	0.45	0.49	0.50	0.54	21
	450	0.29	0.37	0.45	0.52	0.57	0.63	0.68	0.73	0.75	0.81	27
	600	0.38	0.50	0.60	0.70	0.76	0.85	0.90	0.97	1.00	1.08	33
	750	0.48	0.62	0.75	0.87	0.95	1.06	1.13	1.22	1.25	1.35	40
	900	0.57	0.74	0.90	1.04	1.13	1.27	1.35	1.46	1.50	1.62	47
600	300	0.38	0.50	0.60	0.70	0.76	0.85	0.90	0.97	1.00	1.08	36
	450	0.57	0.74	0.90	1.04	1.13	1.27	1.35	1.46	1.50	1.62	45
	600	0.76	0.99	1.20	1.39	1.51	1.69	1.80	1.94	2.01	2.16	53
	750	0.95	1.24	1.49	1.74	1.89	2.12	2.25	2.43	2.51	2.70	68
	900	1.14	1.49	1.79	2.09	2.27	2.54	2.70	2.92	3.01	3.24	76
	1050	1.34	1.73	2.09	2.44	2.65	2.96	3.15	3.40	3.51	3.78	85
	1200	1.53	1.98	2.39	2.78	3.02	3.39	3.60	3.89	4.01	4.32	94
900	450	0.86	1.11	1.34	1.57	1.70	1.90	2.03	2.19	2.26	2.43	64
	600	1.14	1.49	1.79	2.09	2.27	2.54	2.70	2.92	3.01	3.24	76
	750	1.43	1.86	2.24	2.61	2.84	3.17	3.38	3.65	3.76	4.05	94
	900	1.72	2.23	2.69	3.13	3.40	3.81	4.05	4.37	4.51	4.86	105
	1050	2.00	2.60	3.14	3.65	3.97	4.44	4.73	5.10	5.26	5.67	124
	1200	2.29	2.97	3.59	4.18	4.54	5.08	5.40	5.83	6.02	6.48	137
	1350	2.58	3.34	4.03	4.70	5.10	5.71	6.08	6.56	6.77	7.29	161
1200	600	1.53	1.98	2.39	2.78	3.02	3.39	3.60	3.89	4.01	4.32	104
	750	1.91	2.48	2.99	3.48	3.78	4.23	4.50	4.86	5.01	5.40	127
	900	2.29	2.97	3.59	4.18	4.54	5.08	5.40	5.83	6.02	6.48	142
	1050	2.67	3.47	4.18	4.87	5.29	5.93	6.30	6.80	7.02	7.56	157
	1200	3.05	3.96	4.78	5.57	6.05	6.77	7.20	7.78	8.02	8.64	173
	1350	3.43	4.46	5.38	6.26	6.80	7.62	8.10	8.75	9.02	9.72	204
	1500	3.82	4.95	5.98	6.96	7.56	8.47	9.00	9.72	10.03	10.80	219
1500	750	2.39	3.09	3.74	4.35	4.73	5.29	5.63	6.08	6.27	6.75	154
	900	2.86	3.71	4.48	5.22	5.67	6.35	6.75	7.29	7.52	8.10	172
	1050	3.34	4.33	5.23	6.09	6.62	7.41	7.88	8.51	8.77	9.45	190
	1200	3.82	4.95	5.98	6.96	7.56	8.47	9.00	9.72	10.03	10.80	209
	1350	4.29	5.57	6.72	7.83	8.51	9.52	10.13	10.94	11.28	12.15	246
	1500	4.77	6.19	7.47	8.70	9.45	10.58	11.25	12.15	12.53	13.50	265
	1650	5.25	6.81	8.22	9.57	10.40	11.64	12.38	13.37	13.79	14.85	301
	1800	5.72	7.43	8.96	10.44	11.34	12.70	13.50	14.58	15.04	16.20	321
1800	900	3.43	4.46	5.38	6.26	6.80	7.62	8.10	8.75	9.02	9.72	218
	1050	4.01	5.20	6.27	7.31	7.94	8.89	9.45	10.21	10.53	11.34	240
	1200	4.58	5.94	7.17	8.35	9.07	10.16	10.80	11.66	12.03	12.96	262
	1350	5.15	6.68	8.07	9.40	10.21	11.43	12.15	13.12	13.54	14.58	308
	1500	5.72	7.43	8.96	10.44	11.34	12.70	13.50	14.58	15.04	16.20	330
	1650	6.30	8.17	9.86	11.48	12.47	13.97	14.85	16.04	16.54	17.82	352
	1800	6.87	8.91	10.76	12.53	13.61	15.24	16.20	17.50	18.05	19.44	374
	1950	7.44	9.65	11.65	13.57	14.74	16.51	17.55	18.95	19.55	21.06	408
2100	1050	4.67	6.06	7.32	8.53	9.26	10.37	11.03	11.91	12.28	13.23	316
	1200	5.34	6.93	8.37	9.74	10.58	11.85	12.60	13.61	14.04	15.12	300
	1350	6.01	7.80	9.41	10.96	11.91	13.33	14.18	15.31	15.79	17.01	352
	1500	6.68	8.66	10.46	12.18	13.23	14.82	15.75	17.01	17.55	18.90	377
	1650	7.35	9.53	11.50	13.40	14.55	16.30	17.33	18.71	19.30	20.79	402
	1800	8.01	10.40	12.55	14.62	15.88	17.78	18.90	20.41	21.05	22.68	427
	1950	8.68	11.26	13.60	15.83	17.20	19.26	20.48	22.11	22.81	24.57	466
	2100	9.35	12.13	14.64	17.05	18.52	20.74	22.05	23.81	24.56	26.46	491
	2250	10.02	12.99	15.69	18.27	19.85	22.22	23.63	25.52	26.32	28.35	516
2400	1200	6.11	7.92	9.56	11.14	12.10	13.55	14.40	15.55	16.04	17.28	338
	1350	6.87	8.91	10.76	12.53	13.61	15.24	16.20	17.50	18.05	19.44	397
	1500	7.63	9.90	11.95	13.92	15.12	16.93	18.00	19.44	20.05	21.60	425
	1650	8.40	10.89	13.15	15.31	16.63	18.63	19.80	21.38	22.06	23.76	452
	1800	9.16	11.88	14.34	16.70	18.14	20.32	21.60	23.33	24.06	25.92	480
	1950	9.92	12.87	15.54	18.10	19.66	22.01	23.40	25.27	26.07	28.08	524
	2100	10.68	13.86	16.73	19.49	21.17	23.70	25.20	27.22	28.07	30.24	552
	2250	11.45	14.85	17.93	20.88	22.68	25.40	27.00	29.16	30.08	32.40	580
	2400	12.21	15.84	19.12	22.27	24.19	27.09	28.80	31.10	32.08	34.56	608

Adustments to Pa at various lengths

Length	600	900	1200	1500	1800	2100	2400
	x0.8	x0.9	0	x1.10	x1.2	x1.3	x1.4

For 90 Degree bend silencers add 50% to pressure drop

Model R150 (m^3/sec based on 1200mm long silencer)

Pressure Loss Pa	15	25	35	50	60	75	85	100	110	125
Face Velocity m/s	3.01	3.89	4.60	5.49	6.03	6.74	7.17	7.78	8.10	8.61

Width	Height	m^3/sec										
		NC Level										
mm	mm	25		30		35		40		45		Kg
350	150	0.16	0.20	0.24	0.29	0.32	0.35	0.38	0.41	0.43	0.45	16
	300	0.32	0.41	0.48	0.58	0.63	0.71	0.75	0.82	0.85	0.90	22
	450	0.47	0.61	0.72	0.87	0.95	1.06	1.13	1.23	1.28	1.36	28
	600	0.63	0.82	0.97	1.15	1.27	1.41	1.50	1.63	1.70	1.81	33
	750	0.79	1.02	1.21	1.44	1.58	1.77	1.88	2.04	2.13	2.26	41
	900	0.95	1.22	1.45	1.73	1.90	2.12	2.26	2.45	2.55	2.71	48
700	300	0.63	0.82	0.97	1.15	1.27	1.41	1.50	1.63	1.70	1.81	35
	450	0.95	1.22	1.45	1.73	1.90	2.12	2.26	2.45	2.55	2.71	47
	600	1.27	1.63	1.93	2.31	2.53	2.83	3.01	3.27	3.40	3.62	55
	750	1.58	2.04	2.41	2.88	3.17	3.54	3.76	4.09	4.25	4.52	68
	900	1.90	2.45	2.90	3.46	3.80	4.24	4.51	4.90	5.10	5.43	78
	1050	2.21	2.86	3.38	4.04	4.43	4.95	5.27	5.72	5.95	6.33	94
	1200	2.53	3.27	3.86	4.62	5.07	5.66	6.02	6.54	6.80	7.24	103
1050	450	1.42	1.84	2.17	2.60	2.85	3.18	3.39	3.68	3.83	4.07	65
	600	1.90	2.45	2.90	3.46	3.80	4.24	4.51	4.90	5.10	5.43	85
	750	2.37	3.06	3.62	4.33	4.75	5.31	5.64	6.13	6.38	6.78	103
	900	2.85	3.67	4.35	5.19	5.70	6.37	6.77	7.35	7.65	8.14	115
	1050	3.32	4.29	5.07	6.06	6.65	7.43	7.90	8.58	8.93	9.50	128
	1200	3.80	4.90	5.79	6.92	7.60	8.49	9.03	9.81	10.21	10.85	140
	1350	4.27	5.51	6.52	7.79	8.55	9.55	10.16	11.03	11.48	12.21	164
	1500	4.75	6.12	7.24	8.65	9.50	10.61	11.29	12.26	12.76	13.57	177
1400	750	3.16	4.08	4.83	5.77	6.33	7.07	7.52	8.17	8.51	9.05	131
	900	3.80	4.90	5.79	6.92	7.60	8.49	9.03	9.81	10.21	10.85	147
	1050	4.43	5.71	6.76	8.08	8.86	9.90	10.53	11.44	11.91	12.66	162
	1200	5.06	6.53	7.73	9.23	10.13	11.32	12.04	13.08	13.61	14.47	177
	1350	5.69	7.35	8.69	10.38	11.40	12.73	13.54	14.71	15.31	16.28	208
	1500	6.33	8.16	9.66	11.54	12.66	14.15	15.05	16.34	17.01	18.09	223
	1650	6.96	8.98	10.62	12.69	13.93	15.56	16.55	17.98	18.71	19.90	257
	1800	7.59	9.80	11.59	13.85	15.20	16.98	18.06	19.61	20.41	21.71	273
1750	900	4.75	6.12	7.24	8.65	9.50	10.61	11.29	12.26	12.76	13.57	193
	1050	5.54	7.14	8.45	10.10	11.08	12.38	13.17	14.30	14.88	15.83	212
	1200	6.33	8.16	9.66	11.54	12.66	14.15	15.05	16.34	17.01	18.09	232
	1350	7.12	9.18	10.86	12.98	14.25	15.92	16.93	18.39	19.14	20.35	270
	1500	7.91	10.20	12.07	14.42	15.83	17.69	18.81	20.43	21.26	22.61	289
	1650	8.70	11.22	13.28	15.86	17.41	19.45	20.69	22.47	23.39	24.87	308
	1800	9.49	12.24	14.49	17.31	18.99	21.22	22.57	24.52	25.52	27.14	327
	1950	10.28	13.26	15.69	18.75	20.58	22.99	24.45	26.56	27.64	29.40	356
	2100	11.07	14.29	16.90	20.19	22.16	24.76	26.33	28.60	29.77	31.66	375
2100	1050	6.64	8.57	10.14	12.11	13.30	14.86	15.80	17.16	17.86	18.99	249
	1200	7.59	9.80	11.59	13.85	15.20	16.98	18.06	19.61	20.41	21.71	271
	1350	8.54	11.02	13.04	15.58	17.10	19.10	20.31	22.06	22.96	24.42	316
	1500	9.49	12.24	14.49	17.31	18.99	21.22	22.57	24.52	25.52	27.14	338
	1650	10.44	13.47	15.93	19.04	20.89	23.34	24.83	26.97	28.07	29.85	360
	1950	12.34	15.92	18.83	22.50	24.69	27.59	29.34	31.87	33.17	35.28	416
	2100	13.29	17.14	20.28	24.23	26.59	29.71	31.60	34.32	35.72	37.99	438
	2250	14.24	18.37	21.73	25.96	28.49	31.83	33.86	36.77	38.27	40.70	460
2450	1200	8.86	11.43	13.52	16.15	17.73	19.81	21.07	22.88	23.81	25.33	310
	1350	9.97	12.86	15.21	18.17	19.94	22.28	23.70	25.74	26.79	28.49	362
	1500	11.07	14.29	16.90	20.19	22.16	24.76	26.33	28.60	29.77	31.66	387
	1650	12.18	15.71	18.59	22.21	24.38	27.23	28.97	31.46	32.74	34.82	412
	1800	13.29	17.14	20.28	24.23	26.59	29.71	31.60	34.32	35.72	37.99	437
	1950	14.39	18.57	21.97	26.25	28.81	32.19	34.23	37.18	38.70	41.15	475
	2100	15.50	20.00	23.66	28.27	31.02	34.66	36.87	40.04	41.67	44.32	500
	2250	16.61	21.43	25.35	30.29	33.24	37.14	39.50	42.90	44.65	47.49	525
	2400	17.72	22.86	27.04	32.31	35.46	39.61	42.13	45.76	47.63	50.65	550

Adustments to Pa at various lengths

Length	600	900	1200	1500	1800	2100	2400
	x0.9	x0.94	0	x1.05	x1.1	x1.16	x1.2

For 90 Degree bend silencers add 50% to pressure drop

Model R200 (m3/sec based on 1200mm long silencer)

Pressure Loss Pa	15	25	35	50	60	75	85	100	110	125
Face Velocity m/s	4.10	5.19	6.18	7.35	8.07	9.00	9.63	10.39	11.00	11.60

Width	Height	m³/sec										
		NC Level										
mm	mm	25		30	35	40		45		50		Kg
400	150	0.25	0.31	0.37	0.44	0.48	0.54	0.58	0.62	0.66	0.70	17
	300	0.49	0.62	0.74	0.88	0.97	1.08	1.16	1.25	1.32	1.39	23
	450	0.74	0.93	1.11	1.32	1.45	1.62	1.73	1.87	1.98	2.09	29
	600	0.98	1.25	1.48	1.76	1.94	2.16	2.31	2.49	2.64	2.78	34
	750	1.23	1.56	1.85	2.20	2.42	2.70	2.89	3.12	3.30	3.48	42
	900	1.48	1.87	2.22	2.64	2.91	3.24	3.47	3.74	3.96	4.18	49
	1050	1.72	2.18	2.59	3.08	3.39	3.78	4.04	4.36	4.62	4.87	61
	1200	1.97	2.49	2.96	3.53	3.87	4.32	4.62	4.98	5.28	5.57	67
800	450	1.48	1.87	2.22	2.64	2.91	3.24	3.47	3.74	3.96	4.18	48
	600	1.97	2.49	2.96	3.53	3.87	4.32	4.62	4.98	5.28	5.57	57
	750	2.46	3.11	3.71	4.41	4.84	5.40	5.78	6.23	6.60	6.96	70
	900	2.95	3.74	4.45	5.29	5.81	6.48	6.93	7.48	7.92	8.35	80
	1050	3.44	4.36	5.19	6.17	6.78	7.56	8.09	8.72	9.24	9.74	96
	1200	3.94	4.98	5.93	7.05	7.75	8.64	9.24	9.97	10.56	11.14	105
	1350	4.43	5.61	6.67	7.93	8.72	9.71	10.40	11.22	11.88	12.53	123
	1500	4.92	6.23	7.41	8.81	9.68	10.79	11.56	12.46	13.20	13.92	132
1200	600	2.95	3.74	4.45	5.29	5.81	6.48	6.93	7.48	7.92	8.35	94
	750	3.69	4.67	5.56	6.61	7.26	8.10	8.67	9.35	9.90	10.44	106
	900	4.43	5.61	6.67	7.93	8.72	9.71	10.40	11.22	11.88	12.53	119
	1050	5.17	6.54	7.78	9.25	10.17	11.33	12.13	13.09	13.86	14.62	131
	1200	5.90	7.47	8.89	10.58	11.62	12.95	13.87	14.95	15.84	16.70	143
	1350	6.64	8.41	10.00	11.90	13.07	14.57	15.60	16.82	17.82	18.79	168
	1500	7.38	9.34	11.12	13.22	14.53	16.19	17.33	18.69	19.80	20.88	180
	1650	8.12	10.28	12.23	14.54	15.98	17.81	19.07	20.56	21.78	22.97	209
	1800	8.86	11.21	13.34	15.87	17.43	19.43	20.80	22.43	23.76	25.06	222
1600	900	5.90	7.47	8.89	10.58	11.62	12.95	13.87	14.95	15.84	16.70	156
	1050	6.89	8.72	10.37	12.34	13.56	15.11	16.18	17.45	18.48	19.49	172
	1200	7.87	9.96	11.86	14.10	15.49	17.27	18.49	19.94	21.12	22.27	188
	1350	8.86	11.21	13.34	15.87	17.43	19.43	20.80	22.43	23.76	25.06	219
	1500	9.84	12.46	14.82	17.63	19.37	21.59	23.11	24.92	26.40	27.84	234
	1650	10.82	13.70	16.30	19.39	21.30	23.75	25.42	27.42	29.04	30.62	262
	1800	11.81	14.95	17.78	21.15	23.24	25.91	27.73	29.91	31.68	33.41	278
	1950	12.79	16.19	19.27	22.92	25.18	28.06	30.05	32.40	34.32	36.19	302
	2100	13.78	17.44	20.75	24.68	27.12	30.22	32.36	34.89	36.96	38.98	319
2000	1050	8.61	10.90	12.97	15.42	16.95	18.89	20.22	21.81	23.10	24.36	219
	1200	9.84	12.46	14.82	17.63	19.37	21.59	23.11	24.92	26.40	27.84	239
	1350	11.07	14.01	16.67	19.83	21.79	24.29	26.00	28.04	29.70	31.32	277
	1500	12.30	15.57	18.53	22.04	24.21	26.99	28.89	31.16	33.00	34.80	296
	1650	13.53	17.13	20.38	24.24	26.63	29.68	31.78	34.27	36.30	38.28	315
	1800	14.76	18.68	22.23	26.44	29.05	32.38	34.67	37.39	39.60	41.76	334
	1950	15.99	20.24	24.08	28.65	31.47	35.08	37.56	40.50	42.90	45.24	363
	2100	17.22	21.80	25.94	30.85	33.89	37.78	40.45	43.62	46.20	48.72	382
	2250	18.45	23.36	27.79	33.05	36.32	40.48	43.34	46.73	49.50	52.20	402
	2400	19.68	24.91	29.64	35.26	38.74	43.18	46.22	49.85	52.80	55.68	421
2400	1200	11.81	14.95	17.78	21.15	23.24	25.91	27.73	29.91	31.68	33.41	279
	1350	13.28	16.82	20.01	23.80	26.15	29.14	31.20	33.65	35.64	37.58	324
	1500	14.76	18.68	22.23	26.44	29.05	32.38	34.67	37.39	39.60	41.76	347
	1650	16.24	20.55	24.45	29.09	31.96	35.62	38.13	41.12	43.56	45.94	369
	1800	17.71	22.42	26.68	31.73	34.86	38.86	41.60	44.86	47.52	50.11	391
	1950	19.19	24.29	28.90	34.37	37.77	42.10	45.07	48.60	51.48	54.29	424
	2100	20.66	26.16	31.12	37.02	40.67	45.33	48.54	52.34	55.44	58.46	446
	2400	23.62	29.89	35.57	42.31	46.48	51.81	55.47	59.82	63.36	66.82	490

Adustments to Pa at various lengths

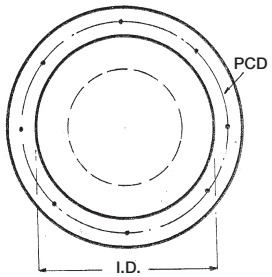
Length	600	900	1200	1500	1800	2100	2400
	x0.96	x0.99	0	x1.02	x1.03	x1.05	x1.07

For 90 Degree bend silencers add 50% to pressure drop

Circular Silencer Drillings (ST & SP)

H number of holes G size inserts on PCD

I.D.	H	G	PCD
315	8	M8	356
350	8	M8	395
400	12	M8	438
450	12	M8	487
500	12	M8	541
560	16	M10	605
630	16	M10	674
710	16	M10	751
800	24	M10	837
900	24	M10	934
1000	24	M10	1043



Rect Silencer Specification

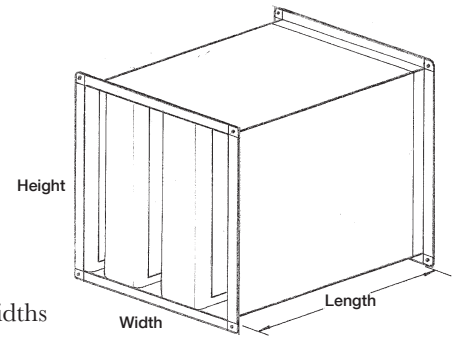
Manufactured to DW 144 Class B (1000 Pa) splitters lined with glass fibre tissue or melinex and encased in expanded metal of 0.7 thick

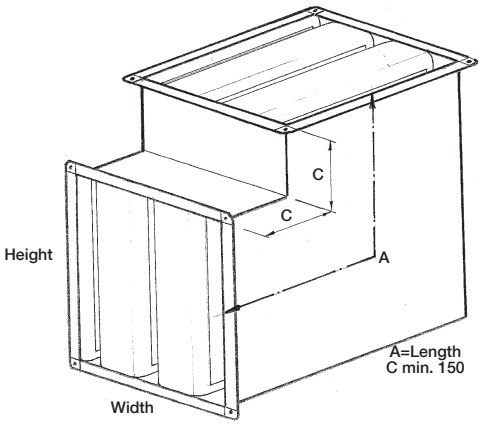
Silencer Longest Side	Galvanized Casing Gauge	Joints Doby	Galvanized Pod Gauges	Number of 50 RSA Stiffeners (only apply if section over 1500 high)			
				1500 long	1800 long	2100 long	2400 long
up to 800	0.08	20	0.08	0	1	1	1
801 to 1000	0.08	30	0.08	0	1	1	1
1001 to 1600	1	30	0.08	0	1	1	1
1601 to 2500	1.2	40	0.08	0	1	1	1

Maximum single module 2100 wide x 1500 high
For module construction allow 2 x Flange width + 10mm on width or height

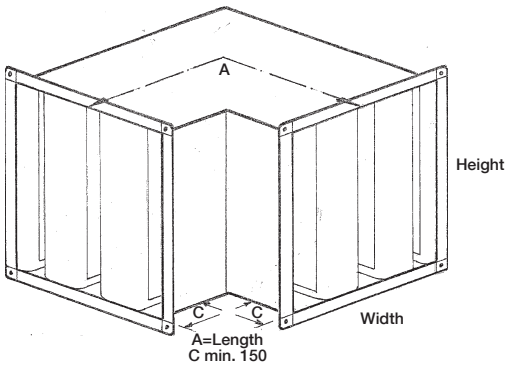
OPTIONS

DW 144 class C (2000Pa)
Melinex Lining
Powder Coated to any RAL colour
Clorinated Rubber painted
Stainless Steel
Fire Rated Casing to BSEN 1366 Part 1
RSA, Mez or Ductmate Flanges
If splitters are in horizontal plane they must be supported at 1200mm widths
Larger cross sections are supplied in modules for easy handling





Vertical Bend



Horizontal Bend

DELIVERY

Silencers delivered with heavy gauge polythene sheet taped to ends to prevent dust ingress.
Special paint finishes are protected with bubble wrap. Silencers if requested can be fixed to wooden pallets for easy offloading.

Acoustic Louvres

Louvres tested by an independent Accoustic consultant to BS2750:1956
Manufactured from 1.2mm galvanized sheet with rockwool 45kg/m^3 acoustic media infill.
To prevent air erosion, the acoustic media is faced with glass fibre held in place with expanded metal or perforated or 0.7mm thick
Bird mesh at rear of louvre
Can be powder coated to any RAL colour
Any size can be manufactured up to a maximim single module 1800wide x 2400high over this size louvres supplied in multiple sections for easy handling minimum height 450mmm
Give us your site apperature sizes and we will manufacture the louve to suit

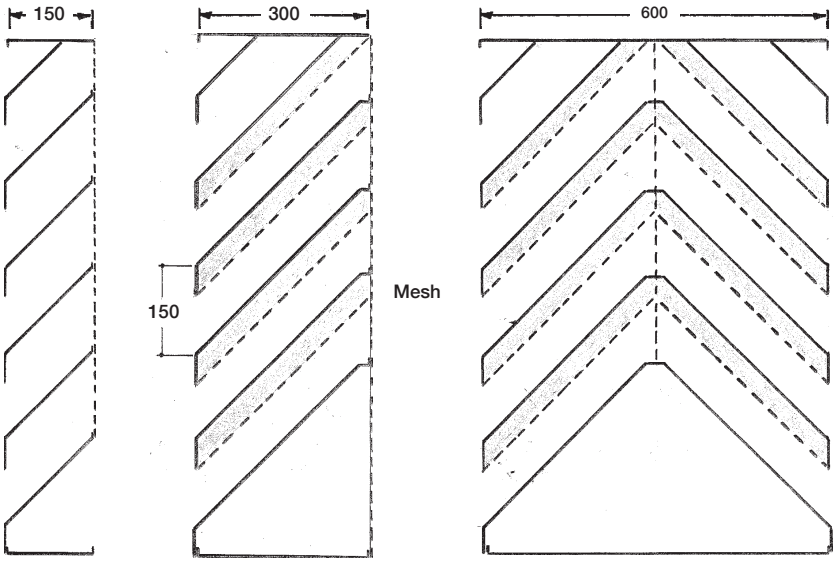
OPTIONS

1 Powder coated to any RAL colour
2 Internal or external flanges supplied loose
3 Drip sills top & bottom
4 Rear fixing brackets
5 Drilling of fixing holes in vertical sides

TABLE 1

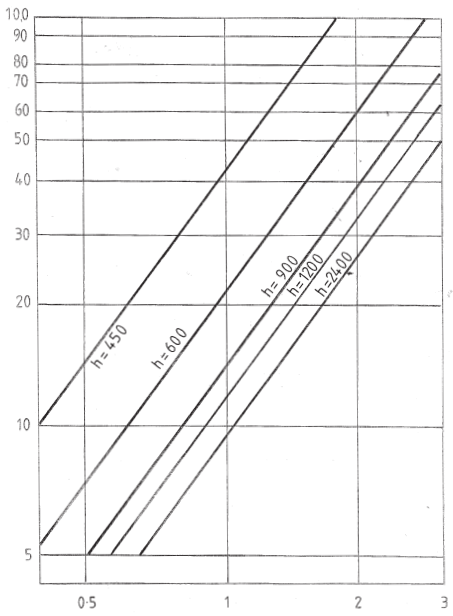
	Sound Reduction Index dB Octave Band Mid Frequency Hz							
width	63	125	250	500	1K	2K	4K	8K
300	5	6	8	12	15	19	14	13
600	8	9	12	20	28	30	23	22

Louvre selection from Table 1 is a balance between acceptable air resistance in (Pa) and the degree of weather protection (slot face velocity)

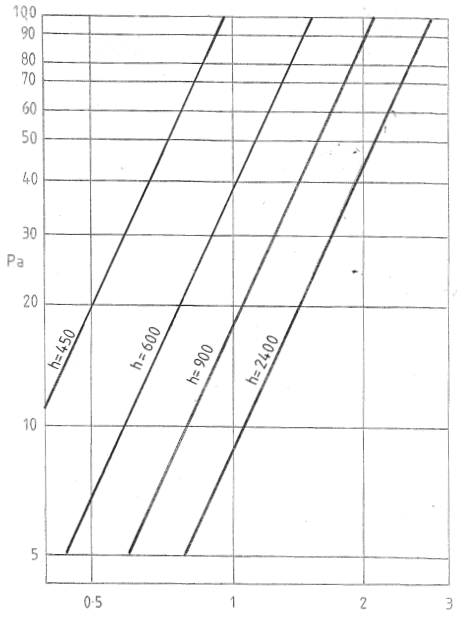


Type L150 Type LA300 Type LA600

Face Velocity (m/s)=Volume (m^3/s)/louvre area
Select resistance Pa from graphs below.
If water ingress is a concern refer to Table 2
for recommended volumes (m^3/s)
over standard face sizes



Face Velocity m/s Type LA300



Face Velocity m/s Type LA600

TABLE 2 Table 2 (Recommended maximum volume) m^3/s

Height	Width													
h	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
450	0.2	0.24	0.28	0.32	0.36	0.4	0.44	0.48	0.52	0.56	0.6	0.64	0.68	0.72
600	0.4	0.48	0.56	0.64	0.72	0.8	0.88	0.96	1.04	1.12	1.2	1.28	1.36	1.44
700	0.6	0.72	0.84	0.96	1.08	1.2	1.32	1.44	1.56	1.68	1.8	1.92	2.04	2.16
800	0.8	0.96	1.12	1.28	1.44	1.6	1.76	1.92	2.08	2.24	2.4	2.56	2.72	2.88
900	1	1.2	1.4	1.6	1.8	2	2.2	2.4	2.6	2.8	3	3.2	3.4	3.6
1000	1.2	1.44	1.68	1.92	2.16	2.4	2.64	2.88	3.12	3.36	3.6	3.84	4.08	4.32
1100	1.4	1.68	1.96	2.24	2.52	2.8	3.08	3.36	3.64	3.92	4.2	4.48	4.76	5.04
1200	1.6	1.92	2.24	2.56	2.88	3.2	3.52	3.84	4.16	4.48	4.8	5.12	5.44	5.76
1300	1.8	2.16	2.52	2.88	3.24	3.6	3.96	4.32	4.68	5.04	5.4	5.76	6.12	6.48
1400	2	2.4	2.8	3.2	3.6	4	4.4	4.8	5.2	5.6	6	6.4	6.8	7.2
1500	2.2	2.64	3.08	3.52	3.96	4.4	4.84	5.28	5.72	6.16	6.6	7.04	7.48	7.92
1600	2.4	2.88	3.36	3.84	4.32	4.8	5.28	5.76	6.24	6.72	7.2	7.68	8.16	8.64
1700	2.6	3.12	3.64	4.16	4.68	5.2	5.72	6.24	6.76	7.28	7.8	8.32	8.84	9.36
1800	2.8	3.36	3.92	4.48	5.04	5.6	6.16	6.72	7.28	7.84	8.4	8.96	9.52	10.08
1900	3	3.6	4.2	4.8	5.4	6	6.6	7.2	7.8	8.4	9	9.6	10.2	10.8
2000	3.2	3.84	4.48	5.12	5.76	6.4	7.04	7.68	8.32	8.96	9.6	10.24	10.88	11.52
2100	3.4	4.08	4.76	5.44	6.12	6.8	7.48	8.16	8.84	9.52	10.2	10.88	11.56	12.24
2200	3.6	4.32	5.04	5.76	6.48	7.2	7.92	8.64	9.36	10.08	10.8	11.52	12.24	12.96
2300	3.8	4.56	5.32	6.08	6.84	7.6	8.36	9.12	9.88	10.64	11.4	12.16	12.92	13.68
2400	4	4.8	5.6	6.4	7.2	8	8.8	9.6	10.4	11.2	12	12.8	13.6	14.4

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