

SAND TRAP LOUVERS





STL - 100

Sand Trap Louvers are generally used as prefilter for fresh air intake of Air Handling Units (AHU), Package Air Conditioning Units (PACU), Roof Top Fresh Air Units (RTFAU) for Air Conditioning Systems and for Fresh Air Intake in manufacturing plants. These louvers are able to separate sand and large dust particles even in case of high dust concentrations. The vertically arranged blade sections and holes for sand drainage ensure that the sand trap louver is self cleaning and maintenance free. It is designed to separate large particles of sand and dust from airstream at low velocities, thus avoiding excessive dust loading of conventional filters. It is not intended as a substitute for conventional filters.

Construction Standards

Frame:
Gauge 16 (1.5mm thk.) from formed galvanized steel sheet.

Blades:
Gauge 18 (1.2mm thick) formed galvanized steel sheet.

Screen:
Galvanized steel bird screen 12 x 12 x 1mm fixed behind the blades. Please note that Pressure Drop Data is obtained from AMCA Test without bird screen. Pressure drop of bird screen is additive and to be calculated separately.

Minimum Size:
150 x 150mm (6in x 6in) - Neck Size.

Maximum Size:
2500 x 1200mm as single section (Neck Size).
2500 x 2500mm will be single module with 2 sections vertical blades and with sand chute between.

Consult SAFID for multiple section assembly details.

STL - 110

General construction as type STL - 100 but frame and blades are built from mill finish aluminum sheet.

STL - 120

General construction as type STL - 100 but frame and blades are built from extruded aluminum profiles.

STL - 130

General construction as type STL - 100 but frame and blades are built from stainless steel sheet Grade 304.

Optional: Frame and blades from stainless steel Grade 316 or 316L.

Additional Options

- *Code Z: Painted to RAL (epoxy coated).
- *Code I: Insect screen in galvanized steel 1 x 1 x 0.4mm.
- *Code T: Bird screen in stainless steel 5 x 5 x 0.7mm.

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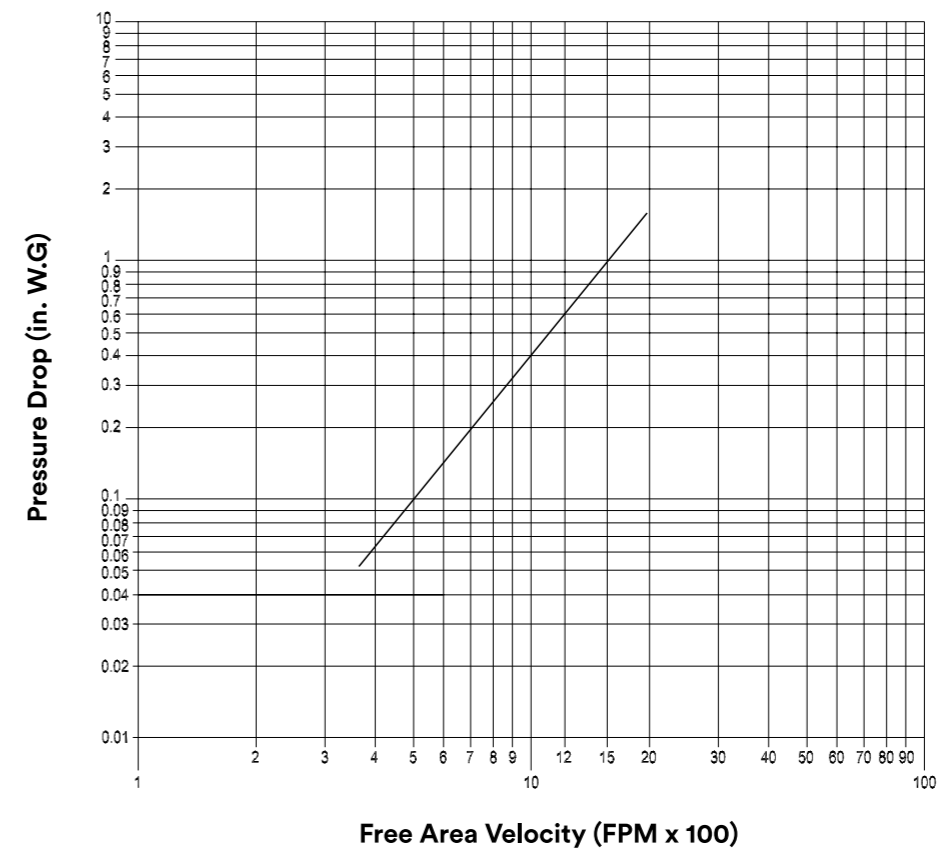


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Test Information
Tested for air performance Figure 5.5 and Sand Rejection Figure 5.12 in accordance with ANSI / AMCA Standard 500-L-12.

STL SERIES [STL - 100, STL - 110, STL - 120, STL - 130]

Pressure Drop

Intake Air Performance



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Free Area Chart (Sq. Ft.)

Outer Frame Size (W1 Inches)

Outer Frame Size (H1 Inches)

	16	24	28	36	40	48	52	60	64	68	76	84	88	92	100	104
16	0.31	0.47	0.62	0.78	0.94	1.09	1.25	1.40	1.56	1.72	1.87	2.03	2.19	2.34	2.50	2.65
24	0.53	0.79	1.05	1.32	1.58	1.85	2.11	2.37	2.64	2.90	3.16	3.43	3.69	3.96	4.22	4.48
28	0.64	0.95	1.27	1.59	1.91	2.22	2.54	2.86	3.18	3.49	3.81	4.13	4.45	4.76	5.08	5.40
36	0.85	1.28	1.70	2.13	2.55	2.98	3.40	3.83	4.25	4.68	5.10	5.53	5.95	6.38	6.80	7.23
40	0.96	1.44	1.92	2.39	2.87	3.35	3.83	4.31	4.79	5.27	5.75	6.23	6.71	7.18	7.66	8.14
48	1.17	1.76	2.35	2.93	3.52	4.13	4.69	5.28	5.87	6.45	7.04	7.63	8.21	8.80	9.39	9.97
52	1.28	1.92	2.56	3.20	3.84	4.48	5.12	5.76	6.40	7.05	7.69	8.33	8.97	9.61	10.25	10.89
60	1.39	2.08	2.78	3.47	4.17	4.86	5.55	6.25	6.94	7.64	8.33	9.03	9.72	10.41	11.11	11.80
64	1.50	2.24	2.99	3.74	4.49	5.24	5.98	6.73	7.48	8.23	8.98	9.73	10.47	11.22	11.97	12.72
68	1.60	2.41	3.21	4.01	4.81	5.61	6.42	7.22	8.02	8.82	9.62	10.42	11.23	12.03	12.83	13.63
76	1.82	2.73	3.64	4.55	5.46	6.37	7.28	8.19	9.10	10.01	10.91	11.82	12.73	13.64	14.55	15.46
84	2.03	3.05	4.07	5.09	6.10	7.12	8.14	9.15	10.17	11.19	12.21	13.22	14.24	15.26	16.28	17.29
88	2.14	3.21	4.28	5.36	6.43	7.50	8.57	9.64	10.71	11.78	12.85	13.92	14.99	16.07	17.14	18.21
92	2.25	3.37	4.50	5.62	6.75	7.87	9.00	10.12	11.25	12.37	13.50	14.62	15.75	16.87	18.00	19.12
100	2.46	3.70	4.93	6.16	7.39	8.63	9.86	11.09	12.32	13.56	14.79	16.02	17.25	18.49	19.72	20.95
104	2.57	3.86	5.15	6.43	7.72	9.00	10.29	11.58	12.86	14.15	15.44	16.72	18.01	19.29	20.58	21.87

NOTE

See Table 1 on page 13 for the equivalent neck size (W x H).



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Sand Filtration Performance Data

Wind Driven Sand at 22 m/s.

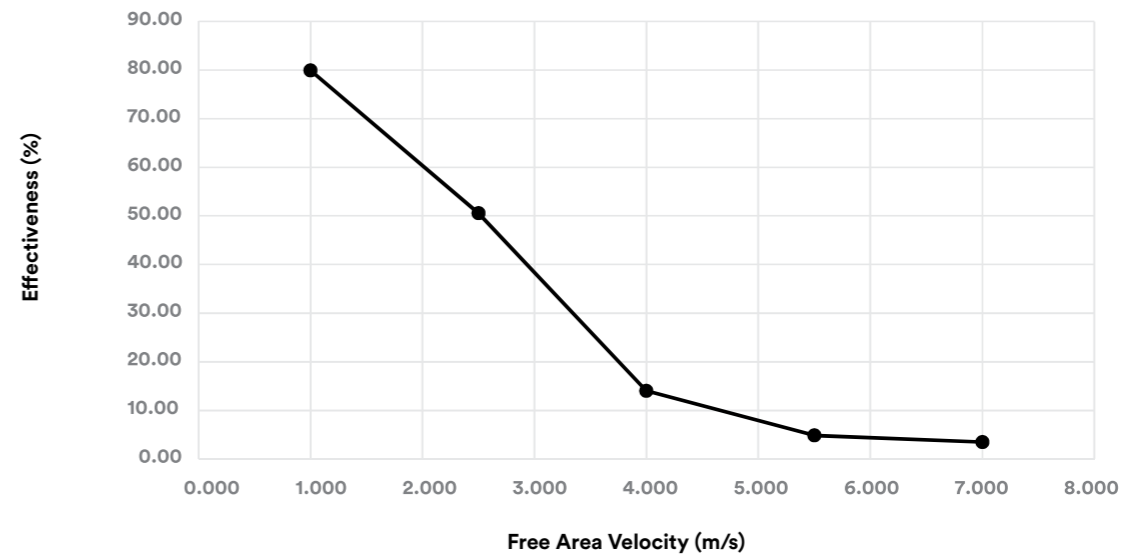
Simulated wind velocity in accordance with ANSI/AMCA Standard 500-L.

Tested for Sand Rejection Effectiveness as per ANSI/AMCA Standard 500-L.

AMCA Test Figure 5.12

Sand Rejection Effectiveness of Louver

Sand Particles Grade in Microns (µm)	Free Area Velocity (m/s)	Sand Rejection Louver Effectiveness (%)	Penetration Class
76 - 699	1.000	79.65	C
	2.500	50.57	D
	4.000	14.02	D
	5.500	4.87	D
	7.000	3.48	D



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Sand Filtration Performance Data

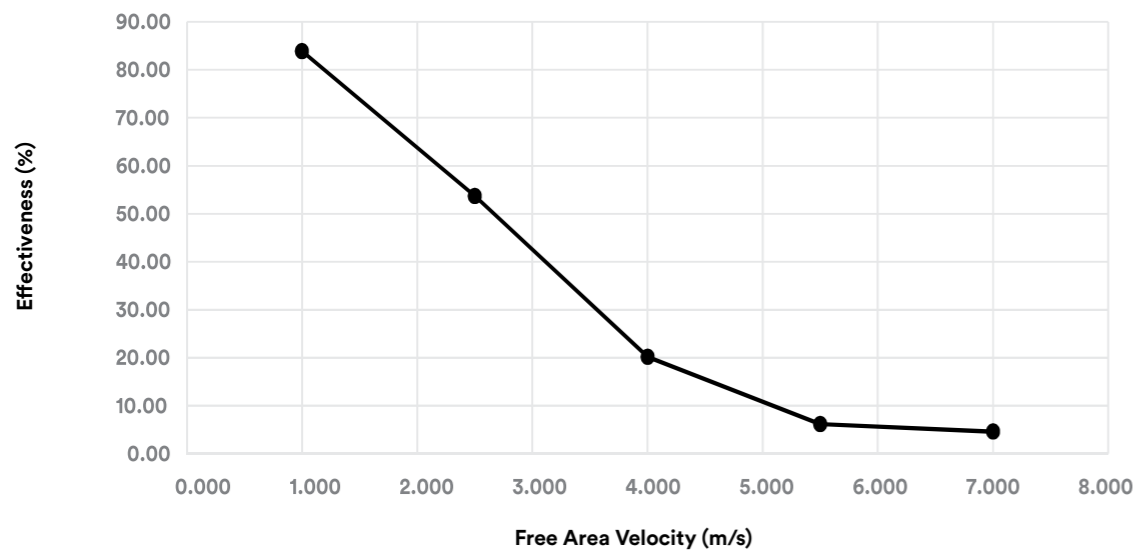
Wind Driven Sand at 11 m/s.

Simulated wind velocity in accordance with ANSI/AMCA Standard 500-L.
Tested for Sand Rejection Effectiveness as per ANSI/AMCA Standard 500-L.

AMCA Test Figure 5.12

Sand Rejection Effectiveness of Louver

Sand Particles Grade in Microns (µm)	Free Area Velocity (m/s)	Sand Rejection Louver Effectiveness (%)	Penetration Class
76 - 699	1.000	83.91	B
	2.500	53.72	D
	4.000	20.17	D
	5.500	6.17	D
	7.000	4.59	D



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Sand Filtration Performance Data

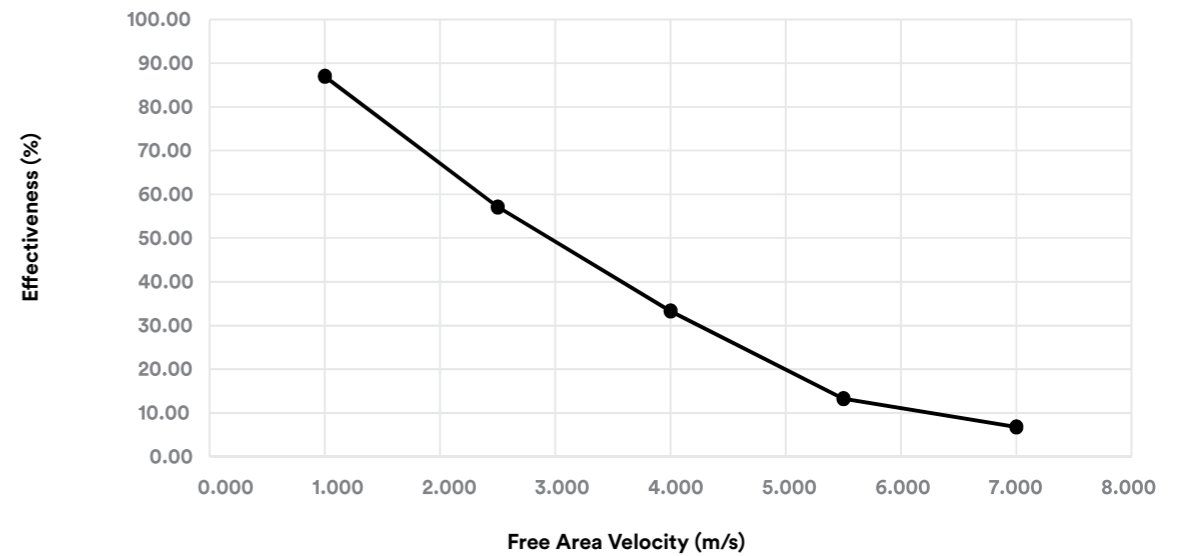
Wind Driven Sand at 7 m/s.

Simulated wind velocity in accordance with ANSI/AMCA Standard 500-L.
Tested for Sand Rejection Effectiveness as per ANSI/AMCA Standard 500-L.

AMCA Test Figure 5.12

Sand Rejection Effectiveness of Louver

Sand Particles Grade in Microns (µm)	Free Area Velocity (m/s)	Sand Rejection Louver Effectiveness (%)	Penetration Class
76-699	1.000	86.96	B
	2.500	57.10	D
	4.000	33.31	D
	5.500	13.20	D
	7.000	6.76	D



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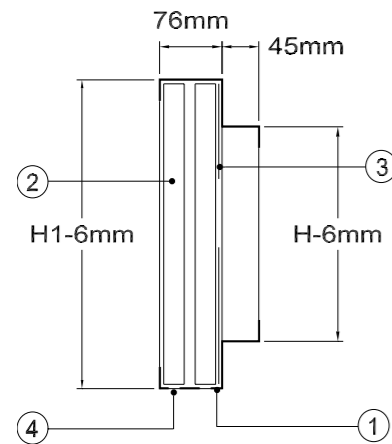
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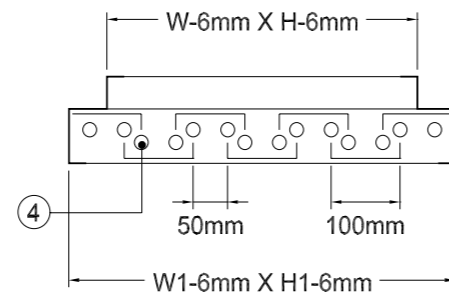
Construction - Dimension and Details

- 1 - Casing
- 2 - Blade
- 3 - Bird Screen (optional)
- 4 - Drain Hole

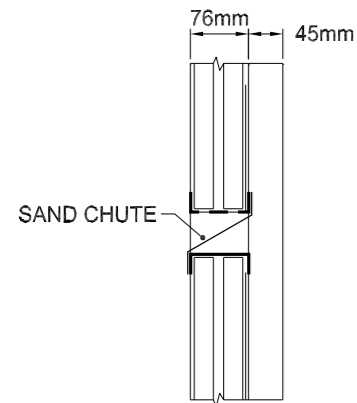
Vertical Section



Horizontal Section

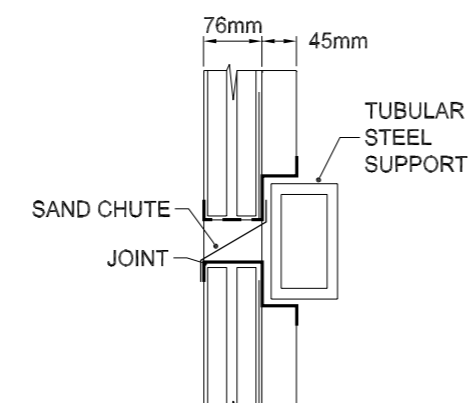


Single Module with Sand Chute



Single Module with 2 sections on vertical blades with Sand Chute from height (H) of 1300mm up to 2500mm.

Multiple Module with Sand Chute



Consult SAFID for Multiple Module assembly details.

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Table 1

Outer Frame Size (in.)	Neck Size (mm)
W1 x H1	W x H
16 x 16	300 x 300
20 x 20	400 x 400
24 x 24	500 x 500
28 x 28	600 x 600
32 x 32	700 x 700
36 x 36	800 x 800
40 x 40	900 x 900
44 x 44	1000 x 1000
48 x 48	1100 x 1100
52 x 52	1200 x 1200
56 x 56	1300 x 1300
60 x 60	1400 x 1400
64 x 64	1500 x 1500
68 x 68	1600 x 1600
72 x 72	1700 x 1700
76 x 76	1800 x 1800
80 x 80	1900 x 1900
84 x 84	2000 x 2000
88 x 88	2100 x 2100
92 x 92	2200 x 2200
96 x 96	2300 x 2300
100 x 100	2400 x 2400
104 x 104	2500 x 2500

Selection Example

For normal operation condition the sand trap louvers should be selected for a maximum free area velocity of 600 feet per minute (FPM).

Example:

Given:
Airflow: 2658 CFM
Assumed free area velocity: 600 FPM

Calculate for free area, neck size and pressure drop.

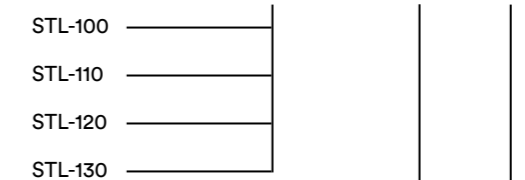
1. Free Area = 2658 CFM / 600 FPM = 4.43 ft².
2. From Free Area Chart the outer frame size is 48in x 48in (W1 x H1).
3. From Table 1 neck size is 1100mm x 1100mm (W x H).
4. Pressure drop = 0.151 in. W.G. (38Pa).

Note:

For optional screens the pressure drop is additive and to be calculated separately.

Order Example

Product Code: STL-100 - a - aaa x aaa



With Optional Extras:

- Z = Painted to RAL (epoxy coated)
- I = Insect Screen in galvanized
- T = Bird Screen in stainless steel

Sizes _____

Ordering:

Make : SAFID
Type : STL-100 - 500 x 500
Qty. : 1