



**FSD/CFSD ALLOWABLE
LEAKAGE BY CLASSIFICATION**

The table 1 shows Fire smoke damper/Combination Fire Smoke damper allowable leakage by classification.

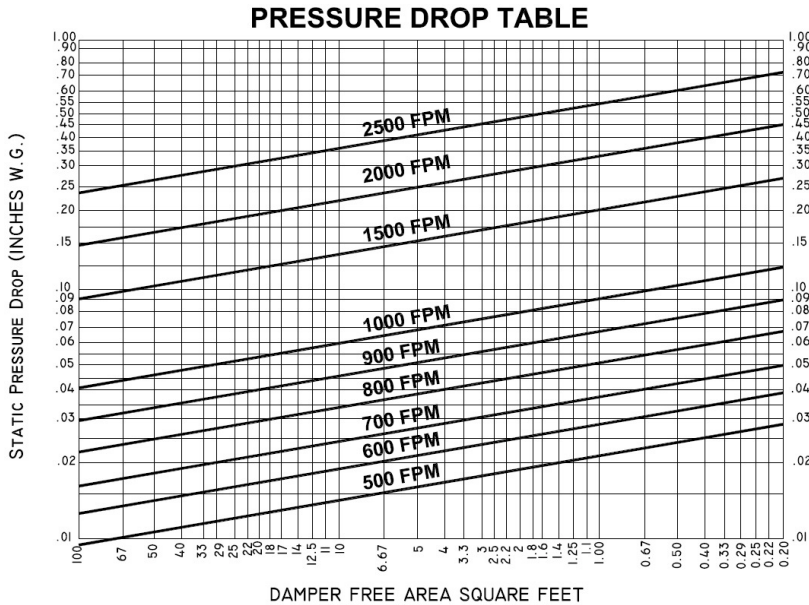
FSD/CFSD Allowable Leakage by classification					
1.00" Water Gauge					
Damper leakage classifications	Damper Leakage Allowed Maximum CFM/SQ/FT	8"x8" SQ/FT 0.44	8"x36" SQ/FT 2.00	24"x24" SQ/FT 4.00	36"x36" SQ/FT 9.00
Class 1 (CFM)	4	1.76	8.00	16.00	36.00
Class 2 (CFM)	10	4.40	20.00	40.00	90.00
4.00" Water Gauge					
Damper leakage classifications	Damper Leakage Allowed Maximum CFM/SQ/FT	8"x8" SQ/FT 0.44	8"x36" SQ/FT 2.00	24"x24" SQ/FT 4.00	36"x36" SQ/FT 9.00
Class 1 (CFM)	8	3.52	16.00	32.00	72.00
Class 2 (CFM)	20	8.80	40.00	80.00	180.00
8.00" Water Gauge					
Damper leakage classifications	Damper Leakage Allowed Maximum CFM/SQ/FT	8"x8" SQ/FT 0.44	8"x36" SQ/FT 2.00	24"x24" SQ/FT 4.00	36"x36" SQ/FT 9.00
Class 1 (CFM)	11	4.84	22.00	44.00	99.00
Class 2 (CFM)	28	12.32	56.00	112.00	252.00
12.00" Water Gauge					
Damper leakage classifications	Damper Leakage Allowed Maximum CFM/SQ/FT	8"x8" SQ/FT 0.44	8"x36" SQ/FT 2.00	24"x24" SQ/FT 4.00	36"x36" SQ/FT 9.00
Class 1 (CFM)	14	6.16	28.00	56.00	126.00
Class 2 (CFM)	35	15.40	70.00	140.00	315.00

Table 1: FSD/ CFSD Allowable Leakage by Classification





FIRE SMOKE DAMPER



**MODELS:
FSD-111 Performance Data**

This pressure drop testing was conducted in accordance with AMCA Standard 500-D using the three configurations shown. All data has been corrected to represent standard air at a density of 0.07 lb/ft³ (1.2kg/m³).

Figure 5.1

Test Figures:

Figure 5.3 illustrates a fully ducted damper. This configuration has the lowest pressure drop of the three test configurations because entrance and exit losses are minimized by straight duct runs upstream and downstream of the damper.

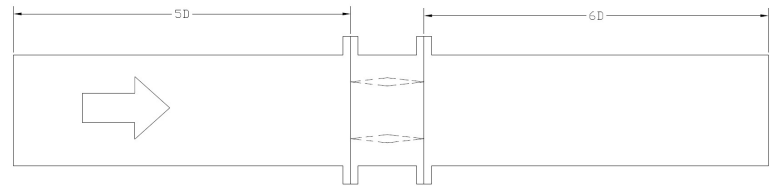


Figure 5.3

DETERMINE DAMPER PRESSURE DROP:

ESTABLISH THE FREE AREA:

Use the free area table (Table 5.2)

(Example: 24"W x 24"H DAMPER =2.63 SQFT)

ESTABLISH THE VELOCITY:

Use the formula:

$$FPM = CFM / FA$$

(Example: $FPM = 4000CFM / 2.63 FA$)

(=1520 FPM)

DETERMINE THE PRESSURE DROP:

Using the pressure drop figure (Figure 5.1):

Find the free area number (2.63) on the bottom line of the table.

Next, project a line vertically horizontally to the left or right and read the pressure drop in inches of water.

(Example: 0.19 INCHES W.G.)

		Damper Free Area								
		8	12	16	20	24	28	30	32	36
W	H									
8		0.21	0.35	0.49	0.63	0.77	0.83	0.91	0.95	1.00
10		0.25	0.43	0.59	0.74	0.91	1.09	1.18	1.21	1.23
12		0.30	0.49	0.69	0.87	1.09	1.29	1.37	1.41	1.54
14		0.38	0.63	0.87	1.14	1.39	1.69	1.77	1.80	2.00
16		0.45	0.74	1.14	1.39	1.69	2.00	2.15	2.20	2.50
20		0.59	1.00	1.39	1.77	2.15	2.56	2.74	2.86	3.23
24		0.71	1.20	1.77	2.15	2.63	3.08	3.33	3.51	4.00
28		0.87	1.47	2.06	2.67	3.23	3.77	4.08	4.35	4.88
32		1.01	1.68	2.35	3.03	3.64	4.35	4.65	5.00	5.56
36		1.14	1.89	2.63	3.39	4.17	4.88	5.26	5.56	6.25

Table 5.2

