DUCT SIZING GUIDE

Residential Duct Sizing Guide

The following duct sizes are based on a fraction drop of .10 inches per 100 feet of lineal duct. This "Equal-Friction" method of duct sizing should be adequate for normal residential furnace heating and air conditioning applications. Larger air volumes or higher static pressures should be dealt with on an individual job basis.

Rectangular and Round Duct

Air Volume CFM	Duct Height Inches					Equivalent Round Duct	Air Volume CFM
	4"	6"	8"	10"	12"		
50	6 x 4					5	50
75	6 x 4					6	75
100	8 x 4	6 x 6				6	100
125	10 x 4	6 x 6				7	125
150	10 x 4	8 x 6				7	150
175	12 x 4	8 x 6				8	175
200	14 x 4	8 x 6				8	200
225	16 x 4	10 x 6				8	220
250	16 x 4	10 x 6				9	250
275		12 x 6	8 x 8			9	275
300		12 x 6	8 x 8			9	300
400		14 x 6	10 x 8			10	400
500		18 x 6	12 x 8	10 x 10		11	500
600		20 x 6	14 x 8	12 x 10		12	600
700		24 x 6	16 x 8	12 x 10		12	700
800		26 x 6	18 x 8	14 x 10	12 x 12	13	800
900		30 x 6	20 x 8	16 x 10	12 x 12	14	900
1000			22 x 8	16 x 10	14 x 12	14	1000
1100			24 x 8	18 x 10	16 x 12	15	1100
1200			26 x 8	20 x 10	16 x 12	15	1200
1300			28 x 8	20 x 10	18 x 12	16	1300
1400			30 x 8	22 x 10	18 x 12	16	1400
1500				24 x 10	20 x 12	16	1500
1600				24 x 10	20 x 12	17	1600
1700				26 x 10	22 x 12	17	1700
1800				28 x 10	22 x 12	18	1800
1900				30 x 10	22 x 12	18	1900
2000					24 x 12	18	2000

Suggested Air Changes

Type of Building	Minute Air Change
Assembly halls	3 - 10
Auditoriums	4 - 15
Bakeries	1 - 3
Banks	3 - 10
Bars	2 - 4
Beauty parlors	2 - 5
Boiler rooms	2 - 4
Bowling alleys	2 - 8
Churches	4 - 15
Corridors	6 - 20
Dry cleaners	1 - 5
Engine rooms	1 - 1.5
Factor (gen. vent.)	5 - 10
Factory (fumes)	1 - 5
Forge shops	1 - 2
Foundries	1 - 4
Garages (repairs)	2 - 10
Generating rooms	2 - 5
Glass plants	1 - 2
Gymnasiums	2 - 10
Heat treat rooms	0.5 - 1
Kitchens	1 - 3
Laundries	2 - 5
Locker rooms	2 - 5
Machine shops	3 - 5
Mills (paper)	2 - 3
Mills (textile)	5 - 15
Offices	2 - 8
Packing houses	2 - 5
Production rooms	1 - 2
Projection rooms	1 - 3
Recreation rooms	2 - 8
Residences	2 - 5
Restaurants	5 - 10
Retail stores	3 - 10
Sales rooms	3 - 10
Shops (gen. vent.)	3 - 10
Stores	5 - 10
Theaters	3 - 8
Toilets	2 - 5
Transformer rooms	1 - 5
Turbine room elec.	2 - 6
Waiting rooms	10
Warehouses	2 - 10

In selecting the size and capacity of a fan, find the total cubic feet of air space of the building and divide by the number of air changes necessary to give proper ventilation.

$$CFM = \frac{\text{Building volume in cubic feet}}{\text{Minute air change}}$$

Example:
A building 100' long x 60' wide with a 20' ceiling: Multiply 100 x 60 x 20 = 120,000 cubic feet. Assuming a 6 minute air change is required: 120,000 cubic feet of air divided by 6 gives you 20,000 CFM required to change the air every 6 minutes.

Refer to manufacturer's instructions and local codes.