

Table 4.... Btuh Capacities and CFM of 6-Inch Feeder Ducts in Perimeter-Radial Systems in Concrete Slab Floors

Section A. For Side-Wall and Floor Diffusers

Bonnet Pressure 0.15 in. Static

Bonnet Temperature 170 F

No. of Elbows	Capacity	Actual Length of Pipe from Bonnet to Diffuser—Feet															
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
0	Btuh Cfm										8700 127.7	8060 124.8	7460 122.3	6920 119.7	6430 117.4	5960 115.0	5550 113.0
1	Btuh Cfm										8820 122.8	8000 120.0	7430 117.6	6900 115.3	6400 113.0	5930 111.0	5500 109.0
2	Btuh Cfm										8600 118.5	7960 116.2	7390 114.0	6860 112.0	6380 110.0	5940 107.8	5530 106.0
3	Btuh Cfm										8640 114.0	8020 112.0	7450 110.0	6950 108.2	6460 106.5	6020 104.7	5600 103.0
4	Btuh Cfm										8790 110.2	8160 108.4	7580 106.6	7050 105.0	6540 103.0	6080 101.5	5640 99.0
5	Btuh Cfm										8850 106.8	8250 105.0	7670 103.5	7140 102.0	6640 100.5	6170 99.0	5740 97.5
6	Btuh Cfm										9050 104.0	8420 102.5	7840 100.7	7280 99.2	6750 97.8	6300 96.5	5850 95.2

For Equivalent Length Values used and included in calculating this table are: Diffuser and Boot = 40 ft; Plenum Take-off = 20 ft; Each Elbow = 14 ft. For each additional 14 ft equivalent length of boot and diffuser, count one additional elbow.

All cfm values are based on standard air.

Section B. For Baseboard Diffusers Only

Bonnet Pressure 0.15 in. Static

Bonnet Temperature 170 F

No. of Elbows	Capacity	Actual Length of Pipe from Bonnet to Diffuser—Feet															
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
0	Btuh Cfm										8570 109.0	8000 107.2	7450 105.5	6910 103.7	6420 102.0	5960 100.4	5560 98.8
1	Btuh Cfm										8700 105.5	8100 104.0	7550 102.3	7000 100.7	6520 99.2	6060 97.6	5630 96.2
2	Btuh Cfm										8890 102.8	8270 101.3	7700 99.8	7160 98.2	6660 96.7	6200 95.3	5750 94.0
3	Btuh Cfm										8440 98.4	7870 96.8	7320 95.3	6820 93.9	6350 92.5	5890 91.3	5460 90.0
4	Btuh Cfm										8690 95.8	8080 94.4	7500 93.0	6960 91.6	6460 90.3	5990 88.9	5560 87.8
5	Btuh Cfm										8940 93.4	8320 92.2	7740 91.0	7200 89.8	6680 88.5	6190 87.3	5720 86.2
6	Btuh Cfm										8580 90.0	7960 89.8	7380 88.6	6850 87.5	6350 86.5	5890 85.4	5440 84.2

The Equivalent Length Values used and included in calculating this table are: Diffuser and Boot = 100 ft; Plenum Take-off = 20 ft; Each Elbow = 14 ft. For each additional 14 ft equivalent length of boot and diffuser count one additional elbow.

All cfm values are based on standard air.

Warm Air Heating Systems

Table 5.... Btuh Capacities and Cfm of Individual Ducts in Perimeter Systems Used in Crawl-Space or Basement Construction

Section A. For 5-Inch Individual Round Pipe and for Side-wall, Floor, and Baseboard Diffusers

Bonnet Pressure 0.15 in. Static

Bonnet Temperature 170 F

No. of Elbows	Capacity	Actual Length of Pipe from Bonnet to Diffuser—Feet															
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
0	Btuh Cfm										8700 100.5	7900 96.2	7150 92.7	6450 89.7	5800 87.0	5230 82.5	4700 80.4
1	Btuh Cfm										8620 95.8	7800 91.7	7100 88.7	6470 86.0	5830 83.8	5250 81.6	4700 79.7
2	Btuh Cfm										8700 90.8	7900 87.9	7180 85.2	6530 82.7	5950 80.7	5400 78.9	4920 77.1
3	Btuh Cfm										8800 86.6	8000 84.0	7300 81.5	6650 79.3	6070 77.5	5530 75.8	5050 74.3
4	Btuh Cfm										8250 81.0	7520 78.8	6850 77.0	6230 75.3	5680 73.7	5180 72.2	4720 70.8
5	Btuh Cfm										7720 76.4	7050 74.5	6420 73.0	5840 71.6	5300 70.3	4850 69.0	4430 67.8
6	Btuh Cfm										7280 72.5	6630 71.2	6070 69.8	5530 68.5	5050 67.3	4600 66.0	4180 64.7

The Equivalent Length Values used and included in calculating this table are: Diffuser and Boot = 35 ft; Plenum Take-off = 15 ft; Each Elbow = 12 ft. For each additional 12 ft equivalent length of boot and diffuser count one additional elbow.

All cfm values are based on standard air.

Section B. For 6-Inch Individual Round Pipe and for Side-wall and Floor Diffusers

Bonnet Pressure 0.15 in. Static

Bonnet Temperature 170 F

No. of Elbows	Capacity	Actual Length of Pipe from Bonnet to Diffuser—Feet															
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
0	Btuh Cfm										8700 127.7	8060 124.8	7460 122.3	6920 119.7	6430 117.4	5960 115.0	5550 113.0
1	Btuh Cfm										8620 122.8	8000 120.0	7430 117.6	6900 115.3	6400 113.0	5930 111.0	5500 109.0
2	Btuh Cfm										8600 118.5	7960 116.2	7390 114.0	6860 112.0	6380 110.0	5940 107.8	5530 106.0
3	Btuh Cfm										8640 114.0	8020 112.0	7450 110.0	6950 108.2	6460 106.5	6020 104.7	5600 103.0
4	Btuh Cfm										8790 110.2	8160 108.4	7580 106.6	7050 105.0	6540 103.0	6080 101.5	5640 99.0
5	Btuh Cfm										8850 106.8	8250 105.0	7670 103.5	7140 102.0	6640 100.5	6170 99.0	5740 97.5
6	Btuh Cfm										9050 104.0	8420 102.5	7840 100.7	7280 99.2	6750 97.8	6300 96.5	5850 95.2

The Equivalent Length Values used and included in calculating this table are: Diffuser and Boot = 40 ft; Plenum Take-off = 20 ft; Each Elbow = 14 ft. For each additional 14 ft equivalent length of boot and diffuser count one additional elbow.

All cfm values are based on standard air.

and subject to limitations of: 1,000 to 1,200 sq ft maximum area, not more than approximately 15 ft along perimeter between diffusers, and no radial duct substantially longer than 20 ft, is the following:

1. Calculate the heat loss of each room or area using the method explained in Chapter 12. For subfloor and edge losses,

see Manual 3 of the National Warm Air Heating and Air Conditioning Association.

2. Determine the required furnace-bonnet capacity from the heat loss of the building.

3. Locate the diffusers on the plan. Allow at least one diffuser for each exposed wall in each room or area of the building and preferably beneath window areas. For residential installations, limit each diffuser to a maximum of 7,000 Btuh.