Table 6. Selection of Bonnet Temperature, Register Temperature and Register Delivery (CFM).[b]

(For Buildings Having a Heat Loss Greater than 250,000 BTU/Hr.)
Register Delivery Volume in CFM per 1000 BTU per Hr.

Bonnet Temp. °F.	Linear Distance from Bonnet to Register, in Feet																								
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250
140	138[a]	136	134	132	130	128	127	126	125	124	123	121	120	119	118	117	116	115	114	113	112	111	110	109	108
	14.4[b]	14.8	15.2	15.6	16.0	16.4	16.6	16.9	17.1	17.4	17.6	18.2	18.4	18.7	19.0	19.3	19.7	20.0	20.4	20.8	21.2	21.6	22.1	22.5	23.1
150	148	146	143	141	139	137	135	133	131	129	128	127	126	124	123	122	120	119	118	117	116	115	114	113	112
	12.8	13.1	13.5	13.9	14.2	14.6	15.0	15.4	15.8	16.2	16.4	16.6	16.9	17.4	17.6	17.9	18.4	18.7	19.0	19.3	19.7	20.0	20.4	20.8	21.2
160	158	155	152	150	147	145	143	140	138	136	134	132	130	128	127	126	125	124	123	121	120	119	118	117	116
	11.6	12.0	12.3	12.6	13.0	13.2	13.5	14.0	14.4	14.8	15.2	15.6	16.0	16.4	16.6	16.9	17.1	17.4	17.6	18.2	18.4	18.7	19.0	19.3	19.7
170	167	164	161	158	155	152	150	147	145	143	140	138	136	134	132	130	128	127	126	125	124	123	121	120	119
	10.8	11.0	11.3	11.6	12.0	12.3	12.6	13.0	13.2	13.5	14.0	14.4	14.8	15.2	15.6	16.0	16.4	16.6	16.9	17.1	17.4	17.6	18.2	18.4	18.7
180	177	173	170	167	164	161	158	155	152	150	147	145	143	140	138	136	134	132	130	128	127	126	125	124	123
	9.9	10.2	10.5	10.8	11.0	11.3	11.6	12.0	12.3	12.6	13.0	13.2	13.5	14.0	14.4	14.8	15.2	15.6	16.0	16.4	16.6	16.9	17.1	17.4	17.6
190	186	182	178	175	172	168	165	162	159	156	153	151	148	146	143	141	139	137	135	133	131	129	128	127	126
	9.3	9.6	9.8	10.0	10.3	10.7	10.9	11.2	11.5	11.8	12.2	12.4	12.8	13.1	13.5	13.9	14.2	14.6	15.0	15.4	15.8	16.2	16.4	16.6	16.9
200	196	191	187	183	179	176	172	169	166	163	160	157	154	151	149	147	144	142	140	138	135	133	131	130	128
	8.8	9.0	9.2	9.5	9.8	10.0	10.3	10.6	10.8	11.1	11.4	11.7	12.1	12.4	12.7	13.0	13.4	13.7	14.0	14.4	14.6	15.0	15.4	15.8	16.0	16.4

[a] Register temperature, Fahrenheit. (Use upper value in each group).
[b] Register delivery volume in cubic feet per minute per 1000 Btu (Use lower value in each group).

Table 7. Determination of Free Area and Pressure Loss of Register for 22 Deg Deflection of Air[a, b, c, d, e]

Register Free Area in Square Inches (Upper value in each group)
Pressure Loss in Inches of Water (Lower value in each group)

CFM	Residential Use: Reg. Size or Equivalent	Residential Use: Pressure Loss
Up to 59	10 x 4 10 x 6	.01 .01
60–69	10 x 6 12 x 4	.01 .02
70–99	10 x 6 12 x 6	.02 .02

CFM	Residential Use: Reg. Size or Equivalent	Residential Use: Pressure Loss
100–119	12 x 6 14 x 4	.02 .02
120–129	12 x 6 14 x 6	.02 .02
130–169	14 x 6	.02
170–189	14 x 8	.02

CFM	Distance From Register to Opposite Wall: Up to 18	19–21	22–24	25–27	28–30	31–34	35–39	40–49	50–59
190–209	68 0.02	49 0.03	38 0.05	29 0.08	24 0.11	19 0.16			
210–229	82 0.02	60 0.03	45 0.04	35 0.06	28 0.10	23 0.13			
230–249		71 0.02	54 0.04	42 0.06	34 0.08	28 0.11	22 0.17		
250–269		84 0.02	63 0.03	49 0.05	40 0.07	32 0.10	25 0.16		
270–299		100 0.02	76 0.03	60 0.04	48 0.06	38 0.09	30 0.13		
300–339			96 0.02	73 0.04	60 0.05	48 0.07	37 0.11		
340–379			122 0.02	95 0.03	78 0.04	61 0.06	47 0.09	33 0.18	
380–419				117 0.02	94 0.03	75 0.05	58 0.08	39 0.15	
420–459				142 0.02	113 0.03	91 0.04	70 0.06	47 0.13	
460–499				168 0.02	135 0.03	108 0.04	83 0.06	56 0.11	
500–539					159 0.02	126 0.03	97 0.05	66 0.19	
540–579					185 0.02	147 0.03	113 0.04	77 0.08	
580–619					212 0.02	169 0.03	130 0.04	88 0.08	51 0.18
620–659						192 0.02	147 0.03	100 0.07	59 0.15
660–699						217 0.02	166 0.03	113 0.06	75 0.13

A B

CFM	Distance From Register to Opposite Wall: 31–34	35–39	40–49	50–59	60–69	70–79	80–89
			A′	B′			
700–739	243 0.02	186 0.03	127 0.06	85 0.11			
740–779	271 0.02	208 0.03	141 0.05	94 0.10			
780–819		230 0.02	157 0.05	105 0.09			
820–859		254 0.02	173 0.04	115 0.08			
860–899		278 0.02	190 0.04	126 0.08			
900–939		304 0.02	207 0.04	138 0.07			
940–979		332 0.02	226 0.03	151 0.07	108 0.12		
980–1019		360 0.02	245 0.03	163 0.06	118 0.11		
1020–1059		390 0.02	265 0.03	177 0.06	127 0.11		
1060–1099			285 0.03	190 0.06	137 0.10		
1100–1139			307 0.03	204 0.05	147 0.09		
1140–1179			330 0.02	220 0.05	158 0.09		
1180–1219			353 0.02	235 0.04	169 0.08		
1220–1259			376 0.02	251 0.04	180 0.08		
1260–1299			401 0.02	267 0.04	192 0.07	136 0.13	
1300–1339			426 0.02	284 0.04	204 0.07	144 0.13	
1340–1379			452 0.02	301 0.04	217 0.06	154 0.12	109 0.22
1380–1419			479 0.02	319 0.04	230 0.06	163 0.12	116 0.21
1420–1459			508 0.02	338 0.03	244 0.06	172 0.11	122 0.20
1460–1500			536 0.02	356 0.03	256 0.06	182 0.10	129 0.19

A′ B′

[a] If register selected based on distance from register to opposite wall is unsatisfactory on account of size or pressure loss, it is permissible to shift one or more spaces left or right in the tables to obtain a more suitable register. If requirements fall in blank space, select two registers in place of one and divide CFM capacity between the two registers.
[b] Pressure loss is based on FLAT FACE ADJUSTABLE BAR TYPE and does NOT include stackhead.
[c] Values on the right of line A and A′ should not be used in applications such as churches, auditoriums, and concert halls.
[d] Values on right of line B and B′ should not be used in applications such as residential work, motion picture theaters, court rooms and schools.
[e] For floor and baseboard registers where a velocity of approximately 300 FPM is used, the free area = $\frac{\text{CFM} \times 144}{300}$ or approximately, $\frac{\text{CFM}}{2}$. Assume a pressure loss of .01.