

ASHRAE Standard 62.1-2004-2010

By MFIA Inc.

System Ventilation Requirements

AHU Location	Description		Σ Vpz cfm	Ps People	Σ Pz People	D Ps / Σ Pz	Vou cfm	Vps cfm	Xs	Ev	Vot cfm	%OA Vot / Vps
Alternative 1												
Zone	RTU-2	Cooling	2,585	109	109	1.00	1,034	2,585	0.400	1.000	1,034	40.0
		Heating	2,585	109	109	1.00	1,034	2,585	0.400	0.900	1,149	44.4
Zone	Zone - 016	Cooling	368	3	3	1.00	34	368	0.093	1.000	34	9.3
		Heating	368	3	3	1.00	34	368	0.093	1.000	34	9.3
Zone	RTU-3	Cooling	1,957	88	88	1.00	901	1,957	0.460	1.000	901	46.0
		Heating	1,957	88	88	1.00	901	1,957	0.460	0.885	1,018	52.0
Zone	RTU-1	Cooling	3,436	47	47	1.00	695	3,436	0.202	0.402	1,728	50.3
		Heating	3,436	47	47	1.00	695	3,436	0.202	0.402	1,728	50.3
Zone	HP-3	Cooling	339	6	6	1.00	57	339	0.169	0.993	58	17.0
		Heating	339	6	6	1.00	57	339	0.169	0.950	60	17.8
Zone	RTU-4	Cooling	1,015	6	6	1.00	174	1,015	0.172	0.993	175	17.3
		Heating	1,015	6	6	1.00	174	1,015	0.172	0.949	184	18.1
Zone	HP-1	Cooling	300	17	17	1.00	170	300	0.567	1.000	170	56.7
		Heating	300	17	17	1.00	170	300	0.567	0.858	198	66.0
Zone	AC-1	Cooling	0	0	0	0.00	0	0	0.000	0.000	0	0.0
		Heating	0	0	0	0.00	0	0	0.000	0.000	0	0.0

* Apply Single Zone Ventilation Calculation

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Ventilation Parameters

								Std 170	—Cooling—	—Heating—		
System	Zone	Room	Occupancy Category	Rp cfm / p	Pz People	Ra cfm/ft²	Az ft²	Vbz cfm	Ez Min OA ach	Ez Voz cfm	Ez Voz cfm	
Alternative 1												
		145 GAMING	Game arcades	7.50	109.09	0.18	1,200	1,034	1.00	1,034	0.80	1,293
		RTU-2		7.50	109.09	0.18	1,200	1,034		1,034		1,293
		143 SECURE VESTIBULE	Corridors	0.00	0.26	0.06	78	5	1.00	5	0.80	6
		144 COUNTING ROOM	Office space	5.00	3.01	0.06	241	30	1.00	30	0.80	37
		Zone - 016		4.60	3.27	0.06	319	34		34		43
		RTU-2		7.42	112.36	0.15	1,519	1,068		1,068		1,335
		138 DINING	Restaurant dining rooms	7.50	88.33	0.18	1,325	901	1.00	901	0.80	1,126
		RTU-3		7.50	88.33	0.18	1,325	901		901		1,126
		102 DRY GOODS	Supermarket	7.50	39.60	0.06	3,960	535	1.00	535	0.80	668
		119 CORRIDOR	Corridors	0.00	2.48	0.06	745	45	1.00	45	0.80	56
		140 CORRIDOR	Corridors	0.00	2.10	0.06	648	39	1.00	39	0.80	49
		112 HALL	Corridors	1.00	0.71	0.06	212	13	1.00	13	0.80	16
		126 LAUNDRY	Laundry Rooms, Central	5.00	0.51	0.12	154	21	2.0	51	0.80	51
		127 RECEIVING	Shipping/ receiving	0.00	0.47	0.12	142	17	1.00	17	0.80	21
		118 STORAGE	Shipping/ receiving	0.00	0.45	0.12	135	16	1.00	16	0.80	20
		148 VESTIBULE	Office space	5.00	0.92	0.06	92	10	1.00	10	0.80	13
		RTU-1		6.43	47.31	0.06	6,088	695		726		894
		125 OFFICE	Office space	6.43	47.31	0.06	6,088	695		726		894
		122 OFFICE	Office space	5.00	2.10	0.06	168	21	1.00	21	0.80	26
		117 SECURITY	Office space	5.00	0.83	0.06	83	9	1.00	9	0.80	11
		130 OFFICE	Office space	5.00	0.65	0.06	65	7	1.00	7	0.80	9
		124 IT OFFICE	Office space	5.00	1.96	0.06	176	20	1.00	20	0.80	25
		HP-3		5.00	5.54	0.06	492	57		57		71
		134 KITCHEN	Kitchen - cooking	7.50	5.23	0.12	1,045	165	1.00	165	0.80	206
		131 ALCOVE	Corridors	0.00	0.53	0.06	160	10	1.00	10	0.80	12
		RTU-4		6.81	5.76	0.11	1,205	174		174		218
		121 BANQUET	Restaurant dining rooms	6.81	5.76	0.11	1,205	174		174		218
		HP-1		7.50	16.67	0.18	250	170	1.00	170	0.80	213
		RTU-1		7.50	16.67	0.18	250	170		170		213

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Ventilation Parameters

System Zone Room	Occupancy Category	Rp cfm / p	Pz People	Ra cfm/ft²	Az ft²	Vbz cfm	Std 170 Min OA ach	—Cooling— Ez cfm	—Heating— Ez cfm	
Alternative 1										
HP-1		7.50	16.67	0.18	250	170		170		213

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Ventilation Calculations for Cooling Design

System Zone Room	Box Type	Vpz cfm	Vfan cfm	Vdz cfm	Vpz-min cfm	Voz-clg cfm	Zd	Ep	Er	Fa	Fb	Fc	Evz
Alternative 1													
145 GAMING	Single Fan CV	2,585	2,585	2,585	0	1,034	0.400	1.00	1.00	1.00	1.00	1.00	1.000 *
		2,585	2,585	2,585	0	1,034							1.000
143 SECURE VESTIBULE	Single Fan CV	64	64	64	0	5	0.073	1.00	1.00	1.00	1.00	1.00	1.000
		305	305	305	0	30	0.097	1.00	1.00	1.00	1.00	1.00	1.000 *
144 COUNTING ROOM	Single Fan CV	368	368	368	0	34							1.000
		2,954	2,954	2,954	0	1,068							1.000
RTU-2	Single Fan CV	1,957	1,957	1,957	0	901	0.460	1.00	1.00	1.00	1.00	1.00	1.000 *
		1,957	1,957	1,957	0	901							1.000
RTU-3	Single Fan CV	1,957	1,957	1,957	0	901							1.000
		2,556	2,556	2,556	0	835	0.209	1.00	1.00	1.00	1.00	1.00	0.993
102 DRY GOODS	Single Fan CV	279	279	279	0	45	0.160	1.00	1.00	1.00	1.00	1.00	1.000
		246	246	246	0	39	0.158	1.00	1.00	1.00	1.00	1.00	1.000
119 CORRIDOR	Single Fan CV	246	246	246	0	39	0.158	1.00	1.00	1.00	1.00	1.00	1.000
		79	79	79	0	13	0.160	1.00	1.00	1.00	1.00	1.00	1.000
112 HALL	Single Fan CV	64	64	64	0	51	0.800	1.00	1.00	1.00	1.00	1.00	0.402 *
		63	63	63	0	17	0.269	1.00	1.00	1.00	1.00	1.00	0.934
126 LAUNDRY	Single Fan CV	63	63	63	0	17	0.269	1.00	1.00	1.00	1.00	1.00	0.934
		118 STORAGE	Single Fan CV	60	60	60	0	16	0.272	1.00	1.00	1.00	0.931
148 MANAGER	Single Fan CV	89	89	89	0	10	0.114	1.00	1.00	1.00	1.00	1.00	1.000
		3,436	3,436	3,436	0	726							0.402
RTU-1	Single Fan CV	3,436	3,436	3,436	0	726							0.402
		117	117	117	0	21	0.175	1.00	1.00	1.00	1.00	1.00	0.983 *
125 OFFICE	Single Fan CV	55	55	55	0	9	0.165	1.00	1.00	1.00	1.00	1.00	1.000
		117 SECURITY	Single Fan CV	50	50	50	0	7	0.144	1.00	1.00	1.00	1.000
130 OFFICE	Single Fan CV	50	50	50	0	7	0.144	1.00	1.00	1.00	1.00	1.00	1.000
		124 IT OFFICE	Single Fan CV	117	117	117	0	20	0.174	1.00	1.00	1.00	1.000
HP-3	Single Fan CV	339	339	339	0	57							0.983
		339	339	339	0	57							0.993
HP-2	Single Fan CV	339	339	339	0	57							0.993
		923	923	923	0	165	0.178	1.00	1.00	1.00	1.00	1.00	0.993 *
134 KITCHEN	Single Fan CV	93	93	93	0	10	0.103	1.00	1.00	1.00	1.00	1.00	1.000
		1,015	1,015	1,015	0	174							0.993
RTU-4	Single Fan CV	1,015	1,015	1,015	0	174							0.993
		121 BANQUET	Single Fan CV	300	300	300	0	170	0.567	1.00	1.00	1.00	1.000 *
HP-1	Single Fan CV	300	300	300	0	170							1.000
		300	300	300	0	170							1.000
AC-1		0	0	0	0	0							0.000
		0	0	0	0	0							0.000

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