

## APPENDIX B

# DEFAULT INTERNAL LOAD VALUES AND SCHEDULES

### SECTION B101 GENERAL

**B101.1 Scope.** The following default internal load values and schedules shall apply to Section C407.

### SECTION B103 DEFAULT SCHEDULES

**B103.1 Default schedules.** Default schedules for occupancy, lighting, receptacles, HVAC, service hot water, and elevators are included in Tables B103(1) through B103(10).

### SECTION B102 DEFAULT TABLES OF INTERNAL LOADS

**B102.1 Default tables of internal loads.** Default occupancy densities, receptacle power densities and service hot water consumption are included in Table B102.

**TABLE B102  
ACCEPTABLE OCCUPANCY DENSITIES, RECEPTACLE POWER DENSITIES  
AND SERVICE HOT WATER CONSUMPTION<sup>a</sup>**

BUILDING TYPE	OCCUPANCY DENSITY <sup>b</sup> ft <sup>2</sup> /PERSON (Btu/h · ft <sup>2</sup> )	RECEPTACLE POWER DENSITY <sup>c</sup> Watts/ft <sup>2</sup> (Btu/h · ft <sup>2</sup> )	SERVICE HOT WATER QUANTITIES <sup>d</sup> Btu/h PER PERSON
Assembly	50 (4.60)	0.25 (0.85)	215
Health/Institutional	200 (1.15)	1.00 (3.41)	135
Hotel/Motel	250 (0.92)	0.25 (0.85)	1,110
Light Manufacturing	750 (0.31)	0.20 (0.68)	225
Office	275 (0.84)	0.75 (2.56)	175
Parking Garage	NA	NA	NA
Restaurant	100 (2.30)	0.10 (0.34)	390
Retail	300 (0.77)	0.25 (0.85)	135
School	75 (3.07)	0.50 (1.71)	215
Warehouse	15,000 (0.02)	0.10 (0.34)	225

- a. The occupancy densities, receptacle power densities, and service hot water consumption values are from ASHRAE Standard 90.1-1989 and addenda.
- b. Values are in square feet of conditioned floor area per person. Heat generation in Btu per person per hour is 230 sensible and 190 latent. Figures in parenthesis are equivalent Btu per hour per square foot.
- c. Values are in Watts per square foot of conditioned floor area. Figures in parenthesis are equivalent Btu per hour per square foot. These values are the minimum acceptable. If other process loads are not input (such as for computers, cooking, refrigeration, etc.), it is recommended that receptacle power densities be increased until total process energy consumption is equivalent to 25% of the total.
- d. Values are in Btu per person per hour.

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TABLE B103(1)  
ASSEMBLY OCCUPANCY<sup>a</sup>

HOUR OF DAY (Time)	SCHEDULE FOR OCCUPANCY Percent of Maximum Load			SCHEDULE FOR LIGHTING RECEPTACLE Percent of Maximum Load			SCHEDULE FOR HVAC SYSTEM			SCHEDULE FOR SERVICE HOT WATER Percent of Maximum Load			SCHEDULE FOR ELEVATOR Percent of Maximum Load		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun
1 (12-1 am)	0	0	0	5	5	5	Off	Off	Off	0	0	0	0	0	0
2 (1-2 am)	0	0	0	5	5	5	Off	Off	Off	0	0	0	0	0	0
3 (2-3 am)	0	0	0	5	5	5	Off	Off	Off	0	0	0	0	0	0
4 (3-4 am)	0	0	0	5	5	5	Off	Off	Off	0	0	0	0	0	0
5 (4-5 am)	0	0	0	5	5	5	Off	Off	Off	0	0	0	0	0	0
6 (5-6 am)	0	0	0	5	5	5	On	Off	Off	0	0	0	0	0	0
7 (6-7 am)	0	0	0	40	5	5	On	On	On	0	0	0	0	0	0
8 (7-8 am)	0	0	0	40	30	30	On	On	On	0	0	0	0	0	0
9 (8-9 am)	20	20	10	40	30	30	On	On	On	0	0	0	0	0	0
10 (9-10 am)	20	20	10	75	50	30	On	On	On	5	5	5	0	0	0
11 (10-11 am)	20	20	10	75	50	30	On	On	On	5	5	5	0	0	0
12 (11-12 pm)	80	60	10	75	50	30	On	On	On	35	20	10	0	0	0
13 (12-1 pm)	80	60	10	75	50	65	On	On	On	5	0	0	0	0	0
14 (1-2 pm)	80	60	70	75	50	65	On	On	On	5	0	0	0	0	0
15 (2-3 pm)	80	60	70	75	50	65	On	On	On	5	0	0	0	0	0
16 (3-4 pm)	80	60	70	75	50	65	On	On	On	5	0	0	0	0	0
17 (4-5 pm)	80	60	70	75	50	65	On	On	On	5	0	0	0	0	0
18 (5-6 pm)	80	60	70	75	50	65	On	On	On	0	0	0	0	0	0
19 (6-7 pm)	20	60	70	75	50	65	On	On	On	0	0	0	0	0	0
20 (7-8 pm)	20	60	70	75	50	65	On	On	On	0	65	65	0	0	0
21 (8-9 pm)	20	60	70	75	50	65	On	On	On	0	30	30	0	0	0
22 (9-10 pm)	20	80	70	75	50	65	On	On	On	0	0	0	0	0	0
23 (10-11 pm)	10	10	20	25	50	5	On	On	On	0	0	0	0	0	0
24 (11-12 am)	0	0	0	5	5	5	Off	Off	Off	0	0	0	0	0	0
Total/Day	710	750	700	1155	800	845	1800	1700	1700	70	125	115	0	0	0
Total/Week			50.50 hours			74.20 hours			124 hours			5.9 hours			0 hours
Total/Year			2633 hours			3869 hours			6465 hours			308 hours			0 hours

Wk = Weekday

a. Schedules for occupancy, lighting, receptacle, HVAC system, and service hot water are from ASHRAE Standard 90.1-1989 and addendums, except that 5 percent emergency lighting has been added for all off hours. Elevator schedules, except for restaurants, are from the U.S. Department of Energy Standard Evaluation Techniques except changed to 0 percent when occupancy is 0 percent. **These values may be used only if actual schedules are not known.**

TABLE B103(2)  
HEALTH OCCUPANCY<sup>a</sup>

HOUR OF DAY (Time)	SCHEDULE FOR OCCUPANCY Percent of Maximum Load			SCHEDULE FOR LIGHTING RECEPTACLE Percent of Maximum Load			SCHEDULE FOR HVAC SYSTEM			SCHEDULE FOR SERVICE HOT WATER Percent of Maximum Load			SCHEDULE FOR ELEVATOR Percent of Maximum Load		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun
1 (12-1 am)	0	0	0	10	10	5	On	On	On	1	1	1	0	0	0
2 (1-2 am)	0	0	0	10	10	5	On	On	On	1	1	1	0	0	0
3 (2-3 am)	0	0	0	10	10	5	On	On	On	1	1	1	0	0	0
4 (3-4 am)	0	0	0	10	10	5	On	On	On	1	1	1	0	0	0
5 (4-5 am)	0	0	0	10	10	5	On	On	On	1	1	1	0	0	0
6 (5-6 am)	0	0	0	10	10	5	On	On	On	1	1	1	0	0	0
7 (6-7 am)	0	0	0	10	10	5	On	On	On	1	1	1	0	0	0
8 (7-8 am)	10	10	0	50	20	5	On	On	On	17	1	1	2	2	0
9 (8-9 am)	50	30	5	90	40	10	On	On	On	58	20	1	75	46	2
10 (9-10 am)	80	40	5	90	40	10	On	On	On	66	28	1	100	70	2
11 (10-11 am)	80	40	5	90	40	10	On	On	On	78	30	1	100	70	2
12 (11-12 pm)	80	40	5	90	40	10	On	On	On	82	30	1	100	70	2
13 (12-1 pm)	80	40	5	90	40	10	On	On	On	71	24	1	75	51	2
14 (1-2 pm)	80	40	5	90	40	10	On	On	On	82	24	1	100	51	2
15 (2-3 pm)	80	40	5	90	40	10	On	On	On	78	23	1	100	51	2
16 (3-4 pm)	80	40	5	90	40	10	On	On	On	74	23	1	100	51	2
17 (4-5 pm)	80	40	0	30	40	5	On	On	On	63	23	1	100	51	0
18 (5-6 pm)	50	10	0	30	40	5	On	On	On	41	10	1	100	25	0
19 (6-7 pm)	30	10	0	30	10	5	On	On	On	18	1	1	52	2	0
20 (7-8 pm)	30	0	0	30	10	5	On	On	On	18	1	1	52	0	0
21 (8-9 pm)	20	0	0	30	10	5	On	On	On	18	1	1	52	0	0
22 (9-10 pm)	20	0	0	30	10	5	On	On	On	10	1	1	28	0	0
23 (10-11 pm)	0	0	0	30	10	5	On	On	On	1	1	1	0	0	0
24 (11-12 am)	0	0	0	10	10	5	On	On	On	1	1	1	0	0	0
Total/Day	850	380	40	1060	550	160	2400	2400	2400	783	249	24	1136	540	16
Total/Week			46.70 hours			60.10 hours			168 hours			41.88 hours			62.36 hours
Total/Year			2435 hours			3134 hours			8760 hours			2148 hours			3251 hours

Wk = Weekday

a. Schedules for occupancy, lighting, receptacle, HVAC system, and service hot water are from ASHRAE Standard 90.1-1989 and addendums, except that 5 percent emergency lighting has been added for all off hours. Elevator schedules, except for restaurants, are from the U.S. Department of Energy Standard Evaluation Techniques except changed to 0 percent when occupancy is 0 percent. **These values may be used only if actual schedules are not known.**

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TABLE B103(3)  
HOTEL/MOTEL OCCUPANCY<sup>a</sup>

HOUR OF DAY (Time)	SCHEDULE FOR OCCUPANCY Percent of Maximum Load			SCHEDULE FOR LIGHTING RECEPTACLE Percent of Maximum Load			SCHEDULE FOR HVAC SYSTEM			SCHEDULE FOR SERVICE HOT WATER Percent of Maximum Load			SCHEDULE FOR ELEVATOR Percent of Maximum Load		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun
1 (12-1 am)	90	90	70	20	20	30	On	On	On	20	20	25	40	44	55
2 (1-2 am)	90	90	70	15	20	30	On	On	On	15	15	20	33	35	55
3 (2-3 am)	90	90	70	10	10	20	On	On	On	15	15	20	33	35	43
4 (3-4 am)	90	90	70	10	10	20	On	On	On	15	15	20	33	35	43
5 (4-5 am)	90	90	70	10	10	20	On	On	On	20	20	20	33	35	43
6 (5-6 am)	90	90	70	20	10	20	On	On	On	25	25	30	33	35	43
7 (6-7 am)	70	70	70	40	30	30	On	On	On	50	40	50	42	40	52
8 (7-8 am)	40	50	70	50	30	40	On	On	On	60	50	50	42	32	52
9 (8-9 am)	40	50	50	40	40	40	On	On	On	55	50	50	52	45	65
10 (9-10 am)	20	30	50	40	40	30	On	On	On	45	50	55	52	45	65
11 (10-11 am)	20	30	50	25	30	30	On	On	On	40	45	50	40	42	53
12 (11-12 pm)	20	30	30	25	25	30	On	On	On	45	50	50	51	60	60
13 (12-1 pm)	20	30	30	25	25	30	On	On	On	40	50	40	51	65	53
14 (1-2 pm)	20	30	20	25	25	20	On	On	On	35	45	40	51	65	51
15 (2-3 pm)	20	30	20	25	25	20	On	On	On	30	40	30	51	65	50
16 (3-4 pm)	30	30	20	25	25	20	On	On	On	30	40	30	51	65	44
17 (4-5 pm)	50	30	30	25	25	20	On	On	On	30	35	30	63	65	64
18 (5-6 pm)	50	50	40	25	25	20	On	On	On	40	40	40	80	75	62
19 (6-7 pm)	50	60	40	60	60	50	On	On	On	55	55	50	86	80	65
20 (7-8 pm)	70	60	60	80	70	70	On	On	On	60	55	50	70	80	63
21 (8-9 pm)	70	60	60	90	70	80	On	On	On	50	50	40	70	75	63
22 (9-10 pm)	80	70	80	80	70	60	On	On	On	55	55	50	70	75	63
23 (10-11 pm)	90	70	80	60	60	50	On	On	On	45	40	40	45	55	40
24 (11-12 am)	90	70	80	30	30	30	On	On	On	25	30	20	45	55	40
Total/Day	1390	1390	1300	855	785	810	2400	2400	2400	915	930	900	1217	1303	1287
Total/Week			96.40 hours			58.70 hours			168.0 hours			64.05 hours			86.75 hours
Total/Year			5026 hours			3061 hours			8760 hours			3340 hours			4523 hours

Wk = Weekday

a. Schedules for occupancy, lighting, receptacle, HVAC system, and service hot water are from ASHRAE Standard 90.1-1989 and addendums, except that 5 percent emergency lighting has been added for all off hours. Elevator schedules, except for restaurants, are from the U.S. Department of Energy Standard Evaluation Techniques except changed to 0 percent when occupancy is 0 percent. **These values may be used only if actual schedules are not known.**

**TABLE B103(4)  
LIGHT MANUFACTURING OCCUPANCY<sup>a</sup>**

HOUR OF DAY (Time)	SCHEDULE FOR OCCUPANCY Percent of Maximum Load			SCHEDULE FOR LIGHTING RECEPTACLE Percent of Maximum Load			SCHEDULE FOR HVAC SYSTEM			SCHEDULE FOR SERVICE HOT WATER Percent of Maximum Load			SCHEDULE FOR ELEVATOR Percent of Maximum Load		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun
1 (12-1 am)	0	0	0	5	5	5	Off	Off	Off	5	5	4	0	0	0
2 (1-2 am)	0	0	0	5	5	5	Off	Off	Off	5	5	4	0	0	0
3 (2-3 am)	0	0	0	5	5	5	Off	Off	Off	5	5	4	0	0	0
4 (3-4 am)	0	0	0	5	5	5	Off	Off	Off	5	5	4	0	0	0
5 (4-5 am)	0	0	0	5	5	5	Off	Off	Off	5	5	4	0	0	0
6 (5-6 am)	0	0	0	10	5	5	Off	Off	Off	8	8	7	0	0	0
7 (6-7 am)	10	10	5	10	10	5	On	On	Off	7	7	4	0	0	0
8 (7-8 am)	20	10	5	30	10	5	On	On	Off	19	11	4	35	16	0
9 (8-9 am)	95	30	5	90	30	5	On	On	Off	35	15	4	69	14	0
10 (9-10 am)	95	30	5	90	30	5	On	On	Off	38	21	4	43	21	0
11 (10-11 am)	95	30	5	90	30	5	On	On	Off	39	19	4	37	18	0
12 (11-12 pm)	95	30	5	90	30	5	On	On	Off	47	23	6	43	25	0
13 (12-1 pm)	50	10	5	80	15	5	On	On	Off	57	20	6	58	21	0
14 (1-2 pm)	95	10	5	90	15	5	On	On	Off	54	19	9	48	13	0
15 (2-3 pm)	95	10	5	90	15	5	On	On	Off	34	15	6	37	8	0
16 (3-4 pm)	95	10	5	90	15	5	On	On	Off	33	12	4	37	4	0
17 (4-5 pm)	95	10	5	90	15	5	On	On	Off	44	14	4	46	5	0
18 (5-6 pm)	30	5	5	50	5	5	On	On	Off	26	7	4	62	6	0
19 (6-7 pm)	10	5	0	30	5	5	On	Off	Off	21	7	4	20	0	0
20 (7-8 pm)	10	0	0	30	5	5	On	Off	Off	15	7	4	12	0	0
21 (8-9 pm)	10	0	0	20	5	5	On	Off	Off	17	7	4	4	0	0
22 (9-10 pm)	10	0	0	20	5	5	On	Off	Off	8	9	7	4	0	0
23 (10-11 pm)	5	0	0	10	5	5	Off	Off	Off	5	5	4	0	0	0
24 (11-12 am)	5	0	0	5	5	5	Off	Off	Off	5	5	4	0	0	0
Total/Day	920	200	60	1040	280	120	1600	1200	0	537	256	113	555	151	0
Total/Week			48.60 hours			56.00 hours			92.00 hours			30.54 hours			29.26 hours
Total/Year			2534 hours			2920 hours			4797 hours			1592 hours			1526 hours

Wk = Weekday

a. Schedules for occupancy, lighting, receptacle, HVAC system, and service hot water are from ASHRAE Standard 90.1-1989 and addendums, except that 5 percent emergency lighting has been added for all off hours. Elevator schedules, except for restaurants, are from the U.S. Department of Energy Standard Evaluation Techniques except changed to 0 percent when occupancy is 0 percent. **These values may be used only if actual schedules are not known.**

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TABLE B103(5)  
OFFICE OCCUPANCY<sup>a</sup>

HOUR OF DAY (Time)	SCHEDULE FOR OCCUPANCY Percent of Maximum Load			SCHEDULE FOR LIGHTING RECEPTACLE Percent of Maximum Load			SCHEDULE FOR HVAC SYSTEM			SCHEDULE FOR SERVICE HOT WATER Percent of Maximum Load			SCHEDULE FOR ELEVATOR Percent of Maximum Load		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun
1 (12-1 am)	0	0	0	5	5	5	Off	Off	Off	5	5	4	0	0	0
2 (1-2 am)	0	0	0	5	5	5	Off	Off	Off	5	5	4	0	0	0
3 (2-3 am)	0	0	0	5	5	5	Off	Off	Off	5	5	4	0	0	0
4 (3-4 am)	0	0	0	5	5	5	Off	Off	Off	5	5	4	0	0	0
5 (4-5 am)	0	0	0	5	5	5	Off	Off	Off	5	5	4	0	0	0
6 (5-6 am)	0	0	0	10	5	5	Off	Off	Off	8	8	7	0	0	0
7 (6-7 am)	10	10	5	10	10	5	On	On	Off	7	7	4	0	0	0
8 (7-8 am)	20	10	5	30	10	5	On	On	Off	19	11	4	35	16	0
9 (8-9 am)	95	30	5	90	30	5	On	On	Off	35	15	4	69	14	0
10 (9-10 am)	95	30	5	90	30	5	On	On	Off	38	21	4	43	21	0
11 (10-11 am)	95	30	5	90	30	5	On	On	Off	39	19	4	37	18	0
12 (11-12 pm)	95	30	5	90	30	5	On	On	Off	47	23	6	43	25	0
13 (12-1 pm)	50	10	5	80	15	5	On	On	Off	57	20	6	58	21	0
14 (1-2 pm)	95	10	5	90	15	5	On	On	Off	54	19	9	48	13	0
15 (2-3 pm)	95	10	5	90	15	5	On	On	Off	34	15	6	37	8	0
16 (3-4 pm)	95	10	5	90	15	5	On	On	Off	33	12	4	37	4	0
17 (4-5 pm)	95	10	5	90	15	5	On	On	Off	44	14	4	46	5	0
18 (5-6 pm)	30	5	5	50	5	5	On	On	Off	26	7	4	62	6	0
19 (6-7 pm)	10	5	0	30	5	5	On	Off	Off	21	7	4	20	0	0
20 (7-8 pm)	10	0	0	30	5	5	On	Off	Off	15	7	4	12	0	0
21 (8-9 pm)	10	0	0	20	5	5	On	Off	Off	17	7	4	4	0	0
22 (9-10 pm)	10	0	0	20	5	5	On	Off	Off	8	9	7	4	0	0
23 (10-11 pm)	5	0	0	10	5	5	Off	Off	Off	5	5	4	0	0	0
24 (11-12 am)	5	0	0	5	5	5	Off	Off	Off	5	5	4	0	0	0
Total/Day	920	200	60	1040	280	120	1600	1200	0	537	256	113	555	151	0
Total/Week		48.60 hours			56.00 hours			92.00 hours			30.54 hours			29.26 hours	
Total/Year		2534 hours			2920 hours			4797 hours			1592 hours			1526 hours	

Wk = Weekday

a. Schedules for occupancy, lighting, receptacle, HVAC system, and service hot water are from ASHRAE Standard 90.1-1989 and addendums, except that 5 percent emergency lighting has been added for all off hours. Elevator schedules, except for restaurants, are from the U.S. Department of Energy Standard Evaluation Techniques except changed to 0 percent when occupancy is 0 percent. **These values may be used only if actual schedules are not known.**

**TABLE B103(6)  
PARKING GARAGE OCCUPANCY<sup>a</sup>**

HOUR OF DAY (Time)	SCHEDULE FOR OCCUPANCY Percent of Maximum Load			SCHEDULE FOR LIGHTING RECEPTACLE Percent of Maximum Load			SCHEDULE FOR HVAC SYSTEM			SCHEDULE FOR SERVICE HOT WATER Percent of Maximum Load			SCHEDULE FOR ELEVATOR Percent of Maximum Load		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun
1 (12-1 am)				100	100	100									
2 (1-2 am)				100	100	100									
3 (2-3 am)				100	100	100									
4 (3-4 am)				100	100	100									
5 (4-5 am)				100	100	100									
6 (5-6 am)				100	100	100									
7 (6-7 am)				100	100	100									
8 (7-8 am)				100	100	100									
9 (8-9 am)				100	100	100									
10 (9-10 am)				100	100	100									
11 (10-11 am)				100	100	100									
12 (11-12 pm)		NA		100	100	100	Based on likely use			NA				Included with other occupancies	
13 (12-1 pm)				100	100	100									
14 (1-2 pm)				100	100	100									
15 (2-3 pm)				100	100	100									
16 (3-4 pm)				100	100	100									
17 (4-5 pm)				100	100	100									
18 (5-6 pm)				100	100	100									
19 (6-7 pm)				100	100	100									
20 (7-8 pm)				100	100	100									
21 (8-9 pm)				100	100	100									
22 (9-10 pm)				100	100	100									
23 (10-11 pm)				100	100	100									
24 (11-12 am)				100	100	100									
Total/Day				2400	2400	2400									
Total/Week															168 hours
Total/Year															8760 hours

Wk = Weekday

a. Schedules for occupancy, lighting, receptacle, HVAC system, and service hot water are from ASHRAE Standard 90.1-1989 and addendums, except that 5 percent emergency lighting has been added for all off hours. Elevator schedules, except for restaurants, are from the U.S. Department of Energy Standard Evaluation Techniques except changed to 0 percent when occupancy is 0 percent. **These values may be used only if actual schedules are not known.**

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TABLE B103(7)  
RESTAURANT OCCUPANCY<sup>a</sup>

HOUR OF DAY (Time)	SCHEDULE FOR OCCUPANCY Percent of Maximum Load			SCHEDULE FOR LIGHTING RECEPTACLE Percent of Maximum Load			SCHEDULE FOR HVAC SYSTEM			SCHEDULE FOR SERVICE HOT WATER Percent of Maximum Load			SCHEDULE FOR ELEVATOR Percent of Maximum Load		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun
1 (12-1 am)	15	30	20	15	20	20	On	On	On	20	20	25	0	0	0
2 (1-2 am)	15	25	20	15	15	15	On	On	On	15	15	20	0	0	0
3 (2-3 am)	5	5	5	15	15	15	On	On	On	15	15	20	0	0	0
4 (3-4 am)	0	0	0	15	15	15	Off	Off	Off	0	0	0	0	0	0
5 (4-5 am)	0	0	0	15	15	15	Off	Off	Off	0	0	0	0	0	0
6 (5-6 am)	0	0	0	20	15	15	Off	Off	Off	0	0	0	0	0	0
7 (6-7 am)	0	0	0	40	30	30	Off	Off	Off	0	0	0	0	0	0
8 (7-8 am)	5	0	0	40	30	30	On	Off	Off	60	0	0	0	0	0
9 (8-9 am)	5	0	0	60	60	50	On	Off	Off	55	0	0	0	0	0
10 (9-10 am)	5	5	0	60	60	50	On	On	Off	45	50	0	0	0	0
11 (10-11 am)	20	20	10	90	80	70	On	On	On	40	45	50	0	0	0
12 (11-12 pm)	50	45	20	90	80	70	On	On	On	45	50	50	0	0	0
13 (12-1 pm)	80	50	25	90	80	70	On	On	On	40	50	40	0	0	0
14 (1-2 pm)	70	50	25	90	80	70	On	On	On	35	45	40	0	0	0
15 (2-3 pm)	40	35	15	90	80	70	On	On	On	30	40	30	0	0	0
16 (3-4 pm)	20	30	20	90	80	70	On	On	On	30	40	30	0	0	0
17 (4-5 pm)	25	30	25	90	80	60	On	On	On	30	35	30	0	0	0
18 (5-6 pm)	50	30	35	90	90	60	On	On	On	40	40	40	0	0	0
19 (6-7 pm)	80	70	55	90	90	60	On	On	On	55	55	50	0	0	0
20 (7-8 pm)	80	90	65	90	90	60	On	On	On	60	55	50	0	0	0
21 (8-9 pm)	80	70	70	90	90	60	On	On	On	50	50	40	0	0	0
22 (9-10 pm)	50	65	35	90	90	60	On	On	On	55	55	50	0	0	0
23 (10-11 pm)	35	55	20	50	50	50	On	On	On	45	40	40	0	0	0
24 (11-12 am)	20	35	20	30	50	30	On	On	On	25	30	20	0	0	0
Total/Day	750	740	485	1455	1365	1115	2000	1800	1700	790	730	625	0	0	0
Total/Week		49.75 hours			97.55 hours			135 hours			53.05 hours			0 hours	
Total/Year		2594 hours			5086 hours			7039 hours			2766 hours			0 hours	

Wk = Weekday

a. Schedules for occupancy, lighting, receptacle, HVAC system, and service hot water are from ASHRAE Standard 90.1-1989 and addendums, except that 5 percent emergency lighting has been added for all off hours. Elevator schedules, except for restaurants, are from the U.S. Department of Energy Standard Evaluation Techniques except changed to 0 percent when occupancy is 0 percent. **These values may be used only if actual schedules are not known.**



TABLE B103(8)  
RETAIL OCCUPANCY<sup>a</sup>

HOUR OF DAY (Time)	SCHEDULE FOR OCCUPANCY Percent of Maximum Load			SCHEDULE FOR LIGHTING RECEPTACLE Percent of Maximum Load			SCHEDULE FOR HVAC SYSTEM			SCHEDULE FOR SERVICE HOT WATER Percent of Maximum Load			SCHEDULE FOR ELEVATOR Percent of Maximum Load		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun
1 (12-1 am)	0	0	0	5	5	5	Off	Off	Off	4	111	7	0	0	0
2 (1-2 am)	0	0	0	5	5	5	Off	Off	Off	5	10	7	0	0	0
3 (2-3 am)	0	0	0	5	5	5	Off	Off	Off	5	8	7	0	0	0
4 (3-4 am)	0	0	0	5	5	5	Off	Off	Off	4	6	6	0	0	0
5 (4-5 am)	0	0	0	5	5	5	Off	Off	Off	4	6	6	0	0	0
6 (5-6 am)	0	0	0	5	5	5	Off	Off	Off	4	6	6	0	0	0
7 (6-7 am)	0	0	0	5	5	5	On	On	Off	4	7	7	0	0	0
8 (7-8 am)	10	10	0	20	10	5	On	On	Off	15	20	10	12	9	0
9 (8-9 am)	20	20	0	50	30	10	On	On	On	23	24	12	22	21	0
10 (9-10 am)	50	50	10	90	60	10	On	On	On	32	27	14	64	56	11
11 (10-11 am)	50	60	20	90	90	40	On	On	On	41	42	29	74	66	13
12 (11-12 pm)	70	80	20	90	90	40	On	On	On	57	54	31	68	68	35
13 (12-1 pm)	70	80	40	90	90	60	On	On	On	62	59	36	68	68	37
14 (1-2 pm)	70	80	40	90	90	60	On	On	On	61	60	36	71	69	37
15 (2-3 pm)	70	80	40	90	90	60	On	On	On	50	49	34	72	70	39
16 (3-4 pm)	80	80	40	90	90	60	On	On	On	45	48	35	72	69	41
17 (4-5 pm)	70	80	40	90	90	60	On	On	On	46	47	37	73	66	38
18 (5-6 pm)	50	60	20	90	90	40	On	On	Off	47	46	34	68	58	34
19 (6-7 pm)	50	20	10	60	50	20	On	On	Off	42	44	25	68	47	3
20 (7-8 pm)	30	20	0	60	30	5	On	On	Off	34	36	27	58	43	0
21 (8-9 pm)	30	20	0	50	30	5	On	On	Off	33	29	21	54	43	0
22 (9-10 pm)	0	10	0	20	10	5	Off	On	Off	23	22	16	0	8	0
23 (10-11 pm)	0	0	0	5	5	5	Off	Off	Off	13	16	10	0	0	0
24 (11-12 am)	0	0	0	5	5	5	Off	Off	Off	8	13	6	0	0	0
Total/Day	720	750	280	1115	985	525	1500	1600	900	662	690	459	844	761	288
Total/Week		46.30 hours			70.85 hours			100 hours			44.59 hours			52.69 hours	
Total/Year		2414 hours			3694 hours			5214 hours			2325 hours			2747 hours	

Wk = Weekday

a. Schedules for occupancy, lighting, receptacle, HVAC system, and service hot water are from ASHRAE Standard 90.1-1989 and addendums, except that 5 percent emergency lighting has been added for all off hours. Elevator schedules, except for restaurants, are from the U.S. Department of Energy Standard Evaluation Techniques except changed to 0 percent when occupancy is 0 percent. **These values may be used only if actual schedules are not known.**

APPENDIX B

TABLE B103(9)  
SCHOOL OCCUPANCY<sup>a</sup>

HOUR OF DAY (Time)	SCHEDULE FOR OCCUPANCY Percent of Maximum Load			SCHEDULE FOR LIGHTING RECEPTACLE Percent of Maximum Load			SCHEDULE FOR HVAC SYSTEM			SCHEDULE FOR SERVICE HOT WATER Percent of Maximum Load			SCHEDULE FOR ELEVATOR Percent of Maximum Load							
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun					
1 (12-1 am)	0	0	0	5	5	5	Off	Off	Off	5	3	3	0	0	0					
2 (1-2 am)	0	0	0	5	5	5	Off	Off	Off	5	3	3	0	0	0					
3 (2-3 am)	0	0	0	5	5	5	Off	Off	Off	5	3	3	0	0	0					
4 (3-4 am)	0	0	0	5	5	5	Off	Off	Off	5	3	3	0	0	0					
5 (4-5 am)	0	0	0	5	5	5	Off	Off	Off	5	3	3	0	0	0					
6 (5-6 am)	0	0	0	5	5	5	Off	Off	Off	5	3	3	0	0	0					
7 (6-7 am)	0	0	0	5	5	5	Off	Off	Off	5	3	3	0	0	0					
8 (7-8 am)	5	0	0	30	5	5	On	Off	Off	10	3	3	0	0	0					
9 (8-9 am)	75	10	0	85	15	5	On	On	Off	34	3	5	30	0	0					
10 (9-10 am)	90	10	0	95	15	5	On	On	Off	60	5	5	30	0	0					
11 (10-11 am)	90	10	0	95	15	5	On	On	Off	63	5	5	30	0	0					
12 (11-12 pm)	80	10	0	95	15	5	On	On	Off	72	5	5	30	0	0					
13 (12-1 pm)	80	10	0	80	15	5	On	On	Off	79	5	5	30	0	0					
14 (1-2 pm)	80	0	0	80	5	5	On	Off	Off	83	3	5	30	0	0					
15 (2-3 pm)	80	0	0	80	5	5	On	Off	Off	61	3	3	30	0	0					
16 (3-4 pm)	45	0	0	70	5	5	On	Off	Off	65	3	3	15	0	0					
17 (4-5 pm)	15	0	0	50	5	5	On	Off	Off	10	3	3	0	0	0					
18 (5-6 pm)	5	0	0	50	5	5	On	Off	Off	10	3	3	0	0	0					
19 (6-7 pm)	15	0	0	35	5	5	On	Off	Off	19	3	3	0	0	0					
20 (7-8 pm)	20	0	0	35	5	5	On	Off	Off	25	3	3	0	0	0					
21 (8-9 pm)	20	0	0	35	5	5	On	Off	Off	22	3	3	0	0	0					
22 (9-10 pm)	10	0	0	30	5	5	On	Off	Off	22	3	3	0	0	0					
23 (10-11 pm)	0	0	0	5	5	5	Off	Off	Off	12	3	3	0	0	0					
24 (11-12 am)	0	0	0	5	5	5	Off	Off	Off	9	3	3	0	0	0					
Total/Day	710	50	0	990	170	120	1500	500	0	691	80	84	285	0	0					
Total/Week		36.00 hours				52.40 hours				80.00 hours				36.19 hours				14.25 hours		
Total/Year		1877 hours				2732 hours				4171 hours				1887 hours				743 hours		

Wk = Weekday

a. Schedules for occupancy, lighting, receptacle, HVAC system, and service hot water are from ASHRAE Standard 90.1-1989 and addendums, except that 5 percent emergency lighting has been added for all off hours. Elevator schedules, except for restaurants, are from the U.S. Department of Energy Standard Evaluation Techniques except changed to 0 percent when occupancy is 0 percent. **These values may be used only if actual schedules are not known.**

**TABLE B103(10)  
WAREHOUSE OCCUPANCY<sup>a</sup>**

HOUR OF DAY (Time)	SCHEDULE FOR OCCUPANCY Percent of Maximum Load			SCHEDULE FOR LIGHTING RECEPTACLE Percent of Maximum Load			SCHEDULE FOR HVAC SYSTEM			SCHEDULE FOR SERVICE HOT WATER Percent of Maximum Load			SCHEDULE FOR ELEVATOR Percent of Maximum Load		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun
1 (12-1 am)	0	0	0	5	5	5	Off	Off	Off	2	2	2	0	0	0
2 (1-2 am)	0	0	0	5	5	5	Off	Off	Off	2	2	2	0	0	0
3 (2-3 am)	0	0	0	5	5	5	Off	Off	Off	2	2	2	0	0	0
4 (3-4 am)	0	0	0	5	5	5	Off	Off	Off	2	2	2	0	0	0
5 (4-5 am)	0	0	0	5	5	5	Off	Off	Off	5	2	2	0	0	0
6 (5-6 am)	0	0	0	5	5	5	Off	Off	Off	7	2	2	0	0	0
7 (6-7 am)	0	0	0	5	5	5	Off	Off	Off	7	2	2	0	0	0
8 (7-8 am)	15	0	0	40	5	5	On	Off	Off	10	2	2	0	0	0
9 (8-9 am)	70	20	0	70	8	5	On	On	Off	30	6	2	0	0	0
10 (9-10 am)	90	20	0	90	24	5	On	On	Off	36	12	2	30	0	0
11 (10-11 am)	90	20	0	90	24	5	On	On	Off	36	12	2	0	0	0
12 (11-12 pm)	90	20	0	90	24	5	On	On	Off	46	17	2	0	0	0
13 (12-1 pm)	50	10	0	80	5	5	On	On	Off	57	4	4	0	0	0
14 (1-2 pm)	85	10	0	90	5	5	On	On	Off	43	4	4	0	0	0
15 (2-3 pm)	85	10	0	90	5	5	On	On	Off	38	2	2	0	0	0
16 (3-4 pm)	85	10	0	90	5	5	On	On	Off	40	2	2	40	0	0
17 (4-5 pm)	20	0	0	90	5	5	On	Off	Off	30	2	2	0	0	0
18 (5-6 pm)	0	0	0	30	5	5	Off	Off	Off	18	2	2	0	0	0
19 (6-7 pm)	0	0	0	5	5	5	Off	Off	Off	3	2	2	0	0	0
20 (7-8 pm)	0	0	0	5	5	5	Off	Off	Off	3	2	2	0	0	0
21 (8-9 pm)	0	0	0	5	5	5	Off	Off	Off	3	2	2	0	0	0
22 (9-10 pm)	0	0	0	5	5	5	Off	Off	Off	3	2	2	0	0	0
23 (10-11 pm)	0	0	0	5	5	5	Off	Off	Off	3	2	2	0	0	0
24 (11-12 am)	0	0	0	5	5	5	Off	Off	Off	3	2	2	0	0	0
Total/Day	680	120	0	915	180	120	1000	800	0	429	91	52	70	0	0
Total/Week		35.20 hours			48.75 hours			58.00 hours			22.88 hours			3.50 hours	
Total/Year		1835 hours			2542 hours			3024 hours			1193 hours			182 hours	

Wk = Weekday

a. Schedules for occupancy, lighting, receptacle, HVAC system, and service hot water are from ASHRAE Standard 90.1-1989 and addendums, except that 5 percent emergency lighting has been added for all off hours. Elevator schedules, except for restaurants, are from the U.S. Department of Energy Standard Evaluation Techniques except changed to 0 percent when occupancy is 0 percent. **These values may be used only if actual schedules are not known.**

