

PLUMBING FIXTURE COUNTS

A Workshop

Presented by CBSC & DSA



Issue Statements

- Appropriate regulation language in Section 422.1 of Part 5/CPC
- Relevance of Table A in Chapter 4 of Part 5/CPC



Why consider these issues?

- Any time we can make the codes simpler or less congested, we benefit the user
- Any time we get closer to or adopt only model, we benefit the user



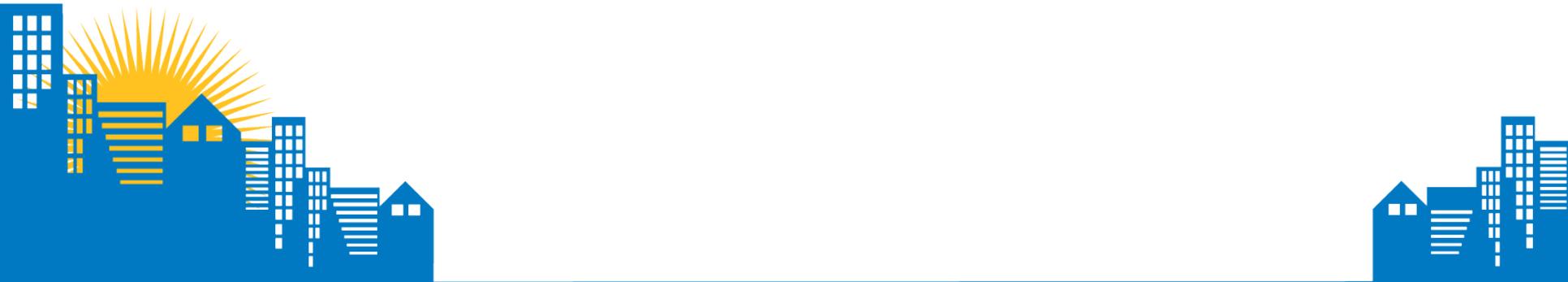
Is the text of 422.1 adequate?

- Text variations across cycles
 - 2013: The total occupant load and occupancy classification shall be determined in accordance with Occupant Load Factor Table A.
 - 2016: The total occupant load and occupancy classification shall be determined in accordance with Occupant Load Factor Table A and the California Building Code.
 - 2019: The total occupant load and occupancy classification shall be determined in accordance with the California Building Code [BSC, DSA-SS, DSA-S/CC] or Occupant Load Factor Table A.



Does Table A still provide its intended function?

- Compare the model referenced table to the amended reference table:
 - Model – Building Code, (Part 2, Table 1004.1.2)
 - Amended – Plumbing Code, (Part 5, Table A)



2016 Table A and Table 1004.1.2

**TABLE A.
OCCUPANT LOAD
FACTOR: [BSC, PSA-SS
& DSA-SS/CC]**

OCCUPANCY*	OCCUPANT LOAD FACTOR
Group A	
1. Auditoriums, convention halls, dance floors, lodge rooms, stadiums, and casinos (where no fixed seating is provided) (use ½ “one-half” the number of fixed seating)	15
2. Conference rooms, dining rooms, drinking establishments, exhibit rooms, gymnasiums, lounges, stages, and similar uses, including restaurants classified as Group B occupancies	30
3. Worship places; principal assembly area, educational and activity unit (where no fixed seating is provided) (use ½ “one-half” the number of fixed seating)	
Group B	
Office or public buildings (area accessible to the public)	200
Group E	
Schools for day care, elementary, secondary	50
Educational Facilities Other than Group E	
Colleges, universities, adult centers, etc.	50
Group F	
Workshops, foundries and similar establishments	2,000
Group H	
Hazardous materials fabrication and storage	2,000
Group I	
Hospital general use area, health care facilities	200
Group M	
Retail or wholesale stores	200
Group R	
Congregate residence, Group R-1	200
Group S	
Warehouse	5,000

* Any uses not specifically listed shall be based on similar uses listed in this table.

** For building or space with mixed occupancies, use appropriate occupancy group for each area (for example, a school may have an “A” occupancy for the gymnasium, a “B” occupancy for the office, an “E” occupancy for the classrooms, etc.) Accessory areas may be excluded (for example: hallway, restroom, stair enclosure)

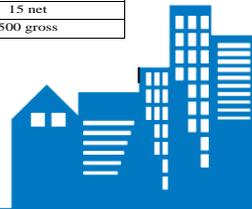
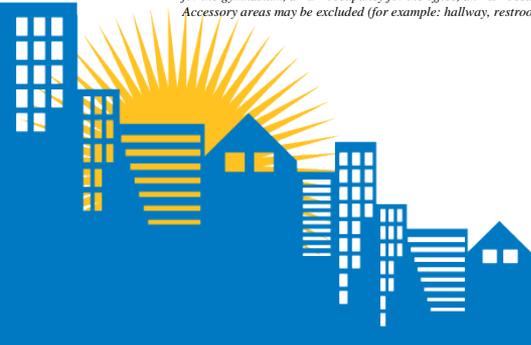
TABLE 1004.1.2

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR ^a
Accessory storage areas, mechanical equipment room	300 gross
Agricultural building	300 gross
Aircraft hangars	500 gross
Airport terminal	
Baggage claim	20 gross
Baggage handling	300 gross
Concourse	100 gross
Waiting areas	15 gross
Assembly	
Gaming floors (keno, slots, etc.)	11 gross
Exhibit Gallery and Museum	30 net
Assembly with fixed seats	See Section 1004.4
Assembly without fixed seats	
Concentrated (chairs only-not fixed)	7 net
Standing space	5 net
Unconcentrated (tables and chairs)	15 net
Bowling centers, allow 5 persons for each lane including 15 feet of runway, and for additional areas	7 net
Business areas	100 gross
Courtrooms—other than fixed seating areas	40 net
Day care	35 net
Dormitories	50 gross
Educational	
Classroom area	20 net
Shops and other vocational room areas	50 net
Exercise rooms	50 gross
Group H-5 Fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Institutional areas	
Inpatient treatment areas	240 gross
Outpatient areas	100 gross
Sleeping areas	120 gross
Kitchens, commercial	200 gross
Laboratory	
Educational	50 net
Laboratories, non-educational	100 net
Laboratory suite ^a	200 gross
Library	
Reading rooms	50 net
Stack area	100 gross
Locker rooms	50 gross
Mall buildings—covered and open	See Section 402.8.2
Mercantile	
Storage, stock, shipping areas	60 gross
Storage, stock, shipping areas	300 gross
Parking garages	200 gross
Residential	200 gross
Skating rinks, swimming pools	
Rink and pool	50 gross
Decks	15 gross
Stages and platforms	15 net
Warehouses	500 gross

For SI: 1 square foot = 0.0929 m².

a. Floor area in square feet per occupant.

See Section 453.2.



History of tables

- Table A has remained static, since agency adoption into the CPC
- Table 1004.1.2 has changed values across the past 4 cycles
- CPC Table 422.1 has also changed values across the past 4 cycles



History of multiple models

- California uses ICC's model for its Building Code (excepting Chapter 29)
- California uses IAPMO's model for its Plumbing Code
- IAPMO's model Table 422.1 is designed to correlate with a generic building code
- ICC's Table 2902.1 is designed to correlate with Table 1004.1.2, within its Building Code



We did some checking

Large Merchant (Top) - Small Merchant (Bottom)

Table 1004...

Table 422...

- 2007 – 21 fixt
- 2019 – 14 fixt

- 2007 – 5 fixt
- 2019 – 4 fixt

Table A

Table 422

- 2007 – 5 fixt
- 2019 – 4 fixt

- 2007 – 3 fixt
- 2019 – 3 fixt

Table 1004...

Table 2902...

- 2007 – 6 fixt
- 2019 – 4 fixt

- 2007 – 4 fixt
- 2019 – 4 fixt



We did some checking

Large Restaurant (top) - Midsize Restaurant (bottom)

Table 1004...

Table 422...

- 2007 – 13 fixt
- 2019 – 16 fixt

- 2007 – 6 fixt
- 2019 – 7 fixt

Table A

Table 422

- 2007 – 6 fixt
- 2019 – 8 fixt

- 2007 – 4 fixt
- 2019 – 5 fixt

Table 1004...

Table 2902...

- 2007 – 12 fixt
- 2019 – 12 fixt

- 2007 – 4 fixt
- 2019 – 4 fixt



We did some checking

Large Office (top) - Midsize Office (bottom)

Table 1004...

Table 422...

- 2007 – 12 fixt
- 2019 – 16 fixt

- 2007 – 6 fixt
- 2019 – 5 fixt

Table A

Table 422...

- 2007 – 7 fixt
- 2019 – 10 fixt

- 2007 – 6 fixt
- 2019 – 3 fixt

Table 1004...

Table 2902...

- 2007 – 18 fixt
- 2019 – 14 fixt

- 2007 – 4 fixt
- 2019 – 4 fixt



We did some checking

Large Auditorium (top) - Small Auditorium (bottom)

Table 1004...

Table 422...

- 2007 – 36 fixt
- 2019 – 40 fixt

- 2007 – 18 fixt
- 2019 – 15 fixt

Table A

Table 422...

- 2007 – 24 fixt
- 2019 – 25 fixt

- 2007 – 12 fixt
- 2019 – 9 fixt

Table 1004...

Table 2902...

- 2007 – 50 fixt
- 2019 – 50 fixt

- 2007 – 12 fixt
- 2019 – 12 fixt



We did some checking

Large Warehouse (top) - Midsize Warehouse (bottom)

Table 1004...
Table 422...

- 2007 – 24 fixt
- 2019 – 4 fixt

- 2007 – 6 fixt
- 2019 – 4 fixt

Table A
Table 422...

- 2007 – 3 fixt
- 2019 – 3 fixt

- 2007 – 3 fixt
- 2019 – 3 fixt

Table 1004...
Table 2902...

- 2007 – 4 fixt
- 2019 – 4 fixt

- 2007 – 4 fixt
- 2019 – 4 fixt



Have things improved?

- The fate of Table A will dictate how Section 422.1 is handled

