

CHAPTER 15
PLUMBING EQUIPMENT CRITERIA

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CHAPTER 15
PLUMBING EQUIPMENT CRITERIA

1. **CODES AND STANDARDS.** Water supply, backflow prevention, and drainage at Army installations will comply with the **2015 ICC International Plumbing Code** (reference 15-1) and other national codes as approved by HQUSACE CEMP-E. Plumbing fixtures will conform generally to American Society of Mechanical Engineers (ASME) standards (reference 15-2).

2. **FIXTURE DESIGN CRITERIA.** Plumbing fixtures will be grouped for economy in all toilet, shower, and laundry rooms. The number of Plumbing fixtures to be provided will be based on the planned peacetime (rated) capacity of the facility. The water consumption of the fixtures shall not exceed the following:

Faucets (Lavatory and Kitchen): 0.16 liters per second (2.5 gallons) per minute

Toilets: 6.0 L (1.6 gallons) per flush

a. **Lavatories.** Lavatories will be of enameled cast iron in central toilets. Built-in type lavatories are preferred. Wall-hung lavatories may be used if concealed chair carriers or wall hangers with through-bolts and back-up plates are provided. Service sinks will be provided with minimum 7.5 cm (3-inch) traps.

b. **Piping, Cleanouts, and Valves.** Adequate space will be provided for piping, and particular care will be taken to avoid freezing and structural interferences and conflicts between the several types of mechanical and electrical work. Plugged tees will be used at 90-degree bends to provide cleanout capability. Cleanouts located in floors will be a minimum of 300 mm (1 foot) from walls and installed equipment to allow for proper access. Flush valves for water closets in Unaccompanied Enlisted Personnel Housing (UEPH) will be placed at least 990 mm (39 inches) above the finish floor. Flush valves will be securely anchored to prevent movement. Shut-off valves will be provided for fixtures or, if a group of fixtures are provided in an individual room, a room shut-off valve may be provided in lieu of fixture shut-off valves.

c. **Employee Toilet Facilities.** Toilet facilities will be provided for employees as follows:

(1) **Water Closets.** Water closets in toilet rooms separate for each sex will be provided in all places of employment according to table 15-1. The number of water closets to be provided for each sex will be based on the number of employees of that sex for whom the toilet facilities are furnished. Separate toilet rooms for each sex need not be provided when toilet rooms will be occupied by no more than one person at a time, can be locked from the inside, and contain at least one water closet. When such single occupancy rooms have more than one water closet, only one such fixture in each toilet room will be counted against the requirements established by table 15-1.

(2) **Lavatories.** Lavatories will be made available in all places of employment according to the requirements for lavatories as specified in table 15-2. In a multiple-use lavatory, 610 lineal mm (21 lineal inches) of wash sink or 510 mm diameter (20 inches diameter) of a circular basin, when provided with water outlets for each space, will be considered equivalent to one lavatory. Lavatories in toilet rooms for food service employees will be provided with other than hand-operated valves.

(3) **Other Users.** When persons other than employees are permitted the use of toilet facilities on the premises, the number of fixtures will be appropriately increased according to table 15-4 when determining the minimum number required.

(4) **Drinking Fountains.** One drinking fountain for each 75 employees or fraction and at least one fountain per floor will be provided.

TABLE 15-1 WATER CLOSET ALLOWANCES	
NUMBER OF EMPLOYEES	MINIMUM NUMBER OF WATER CLOSETS ¹
1 to 15	1
16 to 35	2
36 to 55	3
56 to 80	4
81 to 110	5
111 to 150	6
151 and over	6 for the first 150, plus 1 additional fixture for each additional 40 employees

¹ Where toilet rooms will not be used by women, urinals may be substituted for some water closets, except that the number of water closets in such cases will not be reduced to less than two-thirds of the minimum specified.

TABLE 15-2 LAVATORY ALLOWANCES		
TYPE OF EMPLOYMENT ¹	NUMBER OF EMPLOYEES	MINIMUM NUMBER OF LAVATORIES
Non industrial office buildings, public buildings, and similar establishments	1 to 15	1
	16 to 35	2
	36 to 60	3
	61 to 90	4
	91 to 125	5
	126 and over	1 additional fixture for each additional 45 employees

¹ For other types of employment, at least one lavatory for three required water closets will be provided.

d. Allowances.

(1) Unaccompanied Officer Personnel Housing (UOPH). Plumbing fixtures for all UOPH, grades W1 to O6, will include a bathroom for each suite with one lavatory, one water closet, and one bathtub with shower. Each floor will include one drinking fountain.

(2) Unaccompanied Enlisted Personnel Housing (UEPH). Plumbing fixture allowances for UEPH will be according to \10\ Appendix B /10/.

(3) Plumbing fixture allowances for religious, welfare and recreational facilities for persons other than employees, where separate toilet facilities are provided, will be according to table 15-3.

3. POOLS. Pool water heaters are required to have a readily accessible on/off switch. The switch will allow system shut-down without adjusting the temperature setting. Outdoor pools heated from other than recovered waste energy or renewable sources must be equipped with floating membrane covers. Timers will be installed on pumps and heaters to allow utilization of off-peak charges for energy, except when necessary to meet applicable public health standards.

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\10\ TABLE 15-3 /10/ PLUMBING FIXTURE ALLOWANCES FOR RELIGIOUS, WELFARE AND RECREATIONAL FACILITIES FOR PERSONS OTHER THAN EMPLOYEES WHERE SEPARATE TOILET FACILITIES ARE PROVIDED					
OCCUPANCY	MINIMUM NUMBER OF PERSONS PER FIXTURE WHEN MORE THAN ONE FIXTURE IS REQUIRED				
	Water Closets	Lavatories	Urinals	Showers	Drinking Fountains
Bowling Alley	Joint facilities for employees and patrons will be provided according to tables 15-1 and 15-2.				
Chapel (Congregation only)					
Male	300	150	300	None	400
Female	150	150	None	None	400
Enlisted Personnel Service Club (Patrons Only)					
Male	150	150	200	None	500
Female	100	100	None	None	500
General Education Development Building (Students Only)					
Male	40	25	40	None	100
Female	25	25	None	None	100
Gymnasium, Field House (does not include fixtures for component swimming pools) (athletic participants only - spectators according to theaters below)					
Male	30	30	40	15	100
Female	20	25	None	15	100
Installation Restaurant or Cafeteria,					

TABLE 15-3 /10/ PLUMBING FIXTURE ALLOWANCES FOR RELIGIOUS, WELFARE AND RECREATIONAL FACILITIES FOR PERSONS OTHER THAN EMPLOYEES WHERE SEPARATE TOILET FACILITIES ARE PROVIDED					
OCCUPANCY	MINIMUM NUMBER OF PERSONS PER FIXTURE WHEN MORE THAN ONE FIXTURE IS REQUIRED				
	Water Closets	Lavatories	Urinals	Showers	Drinking Fountains
NCOs' Open Mess, Officers' Open Mess (Patrons Only)					
Male	200	200	300	None	500
Female	150	150	None	None	500
Library Recreational Workshop	Joint facilities for employees and patrons will be provided according to tables 15-1 and 15-2.				
Swimming Pool ^{1&2} (Swimmers Only)					
Male	40	40	40	30	100
Female	20	40	None	30	100
Temporary Lodging Facilities	The following fixtures will be provided for every two (2) guest rooms: One water closet, two lavatories, and one shower compartment or bathtub/shower combination. In addition, a common toilet room will be provided for the office and lounge.				
Theater, Enlisted Personnel Dining Facilities ³ (Patrons Only)					
Male	250	200	250	None	400
Female	150	150	None	None	400

- ¹ Fixtures will be provided for swimmers only on this basis: The maximum capacity of the pool (swimmers) will equal the area of the pool square meters divided by 2.5 (square feet divided by 27). Where applicable, fixtures for waders will be computed on the basis of not less than 1.3 m² (13-1/2 ft²) per wader instead of 2.5 m² (27 ft²) in depth of less than 1.5 m (5 ft). Separate fixtures will be provided for spectators at indoor swimming pools as indicated opposite "theater" above.
- ² In addition to the above fixtures, "wet toilets" required by wet swimmers and located adjacent to shower rooms will be provided as follows: One "wet toilet" for women, consisting of one water closet for 100 swimmers or less, and two water closets for over 100 swimmers. The "wet toilets" will be so placed that persons using them must pass through the shower before entering the pool.
- ³ Patron toilet facilities are not required in enlisted personnel dining facilities that are adjacent to other toilet facilities in existing UEPH buildings. Separate toilet facilities will be provided for kitchen employees according to tables 15-1 and 15-2.

4. REFERENCES.

15-1 \20\ ICC International Plumbing Code, International Code Council, 5203 Leesburg Pike, Suite 708,

CEMP-E

TI 800-01
20 July 1998

Falls Church, VA 22041-3401 /20/

15-2 American Society of Mechanical Engineers (ASME), 22 Law Drive, P.O. Box 2900, Fairfield, N.J.
07007-2900