



NATIONAL PETROCHEMICAL COMPANY
STANDARDS

ENGINEERING STANDARD
FOR
PLUMBING OF BUILDINGS

NPCS—ES—GC—14

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1 SCOPE

This standard describes the engineering requirements for plumbing of buildings (The water supply and drainage of soil and waste water within the buildings) in an industrial complex.

2 STANDARDS AND CODES

- ASTM American Society of Testing and Materials.
A 120 Specification for Pipe Steel, Black and Hot Dipped Zinc Coated (Galvanized Welded and Seamless Pipes for Ordinary Use).
- ANSI American National Standard Institute.
A 408 National Plumbing Code.
- ASSE American Society of Sanitary Engineering.
- IAPMO International Association of Plumbing and Mechanical Officials.
- NSF National Sanitation Foundation.
- National Standard Plumbing Code (National Association of Plumbing-Heating Cooling Contractors).

Local Conditions Prevails.

3 WATER SUPPLY SYSTEM

3.1 Hot water and cold water shall be supplied for all buildings.

3.2 All fixtures inside the building shall be supplied to hot and cold water.

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2.1 Minimum Number of Fixtures

The minimum number of plumbing fixtures depends upon the type of building/complex shall be as given in the following Table:

TABLE A

TYPE OF BUILDING	WATER CLOSETS		LAVATORIES	DRINKING FOUNTAINS	BATH TUBS OR SHOWERS	OTHER
	NO. OF PERSONS	NO. OF FIXTURES				
ASSEMBLY PLACES MOSQUE, AUDITORIUMS, VISITING ROOMS, ETC.	1-50	1	1/2 NO. OF WATER CLOSETS	1/1000 PEOPLE	-	-
ASSEMBLY PLACES WHERE FOOD AND DRINKS ARE SERVED. (STADIUM, PASSENGER TERMINALS, CONVENTION HALLS, AND OTHER SIMILAR USES.	1-100 101-200 201-400 EACH 300	2 3 4 ADD 1	1/2 NO. OF WATER CLOSETS	1/1000 PEOPLE	-	-
ASSEMBLY PLACES RESTAURANTS AND NIGHT CLUBS WHERE SEATING IS PROVIDED.	1-50 51-100 101-200 EACH 200	2 3 4 ADD 1	1/2 NO. OF WATER CLOSETS	1/200 PEOPLE	-	-
WORKPLACES INDUSTRIAL/ SERVICE WHEN A LOCKER ROOM IS PROVIDED AND USED MAINLY AT SHIFT CHANGE.	1-10 11-25 26-50 51-75 76-100 EACH 50	1 2 3 4 5 ADD 1	1/2 NO. OF WATER CLOSETS	1/75 PEOPLE	1 SHOWER/10 PEOPLE 1 SHOWER AND WASH SINK/FLOOR WHEN EXPOSED TO EXTREME HEAT OR SKIN CONTAMINA- TION	1 SERVICE

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TABLE A
(Contd.)

TYPE OF BUILDING	WATER CLOSETS		LAVATORIES	DRINKING FOUNTAINS	BATH TUBES OR SHOWERS	OTHER
	NO. OF PERSONS	NO. OF FIXTURES				
WORKPLACES WHERE EMPLOYEES ALL OCCUPANCIES EXCEPT INDUSTRIAL/ SERVICE, SUCH AS IN STORES, SHOPPING CENTER, BANKS, OFFICE BUILDINGS & LIGHT INDUSTRIAL /SERVICE USES WITHOUT LOCKER ROOMS.	1-15	1	1/2 NO. OF WATER CLOSETS	1/100 PEOPLE	-	1 SERVICE SINK/FLOOR
	16-40	2				
	41-75	3				
	EACH 60	ADD 1				
SINGLE DWELLING UNITS	-	1	1	-	1	1 KITCHEN SINK
MULTIPLE DWELLING UNITS	-	1/UNIT	1/UNIT	-	1/UNIT	1 KITCHEN SINK/UNIT
						1 LAUNDRY TRAY/10 UNITS
DORMITORIES BOARDING HOUSES	1-20	2	1/2 NO. OF WATER CLOSETS	1/100 PEOPLE OR 1 FBOR	1-20 PEOPLE 2 FIXTURES,	1 SERVICE SINK/FLOOR
	EACH 20	ADD 1			EACH 20 ADD 1	1 LAUNDRY TRAY/10 PEOPLE
HOSPITAL	1-8 PATENTS EACH 8	1 ADD 1	1/2 NO. OF WATER CLOSETS	-	1/20 PATIENT	1 SERVICE SINK/FLOOR

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- NOTE 1: Above mentioned number of fixtures are minimum, however local code shall prevail.
- 2: Number of urinal should be taken as 50% of water closets.
- 3: If urinal are not provided same number of water closets may be provided.

3.3 WATER SUPPLY DEMAND

3.3.1 Water supply demand in a building can be calculated based on load value of the fixtures in Table A and water demand corresponding to load value in Table B.

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