

### SEISMIC AND WIND REQUIREMENTS FOR PLUMBING SYSTEMS PER IBC-2015 /ASCE 7-10

- A. EQUIPMENT, APPLIANCES AND SUPPORTS (INCLUDING ROOF CURBS & ROOF RAILS) EXPOSED TO WIND SHALL BE DESIGNED AND INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE. WHERE SEISMIC RESTRAINT IS REQUIRED, THE MORE DEMANDING FORCE OF WIND AND SEISMIC MUST BE USED. SEE SEISMIC INFORMATION CONTAINED IN THE STRUCTURAL DRAWINGS FOR SITE SPECIFIC INFORMATION ON SEISMIC DESIGN CATEGORY SEE EQUIPMENT SCHEDULES AND DETAILS FOR SPECIFIC COMPONENT IMPORTANCE FACTOR DESIGNATIONS.
- B. USE APPLICABLE TABLE BELOW TO DETERMINE SEISMIC RESTRAINT REQUIREMENTS FOR EACH MECHANICAL COMPONENT. FOR ALL COMPONENTS REQUIRING SEISMIC RESTRAINT, THE COMPONENT SUPPORTS AND ATTACHMENTS SHALL BE DESIGNED BY A REGISTERED DESIGN PROFESSIONAL. SUBMITTAL MUST INCLUDE STAMPED AND SIGNED DRAWINGS AND CALCULATIONS.
- C. WHERE SEISMIC RESTRAINT IS REQUIRED, HOUSEKEEPING PADS NEEDED FOR THE INSTALLATION OF EQUIPMENT UNDER THIS CONTRACT MUST BE DESIGNED BY THE SEISMIC ENGINEER. DO NOT POUR ANY HOUSEKEEPING PADS PRIOR TO THE RECEIPT OF THE SEISMIC SUBMITTAL.
- D. SEISMIC RESTRAINTS FOR PIPING MUST BE SHOWN ON LAYOUT DRAWINGS SHOWING SPECIFIC RESTRAINT LOCATIONS ALONG WITH ACCOMPANYING DETAILS AND CALCULATIONS.

#### PLUMBING COMPONENT IMPORTANCE FACTOR (Ip) DESIGNATION

Ip = 1.0 Ip = 1.5

- ALL PLUMBING COMPONENTS EXCEPT AS LISTED UNDER Ip = 1.5

#### SEISMIC DESIGN CATEGORIES D,E,F

##### COMPONENT IMPORTANCE FACTOR (Ip)

COMPONENT IDENTIFICATION	SEISMIC RESTRAINT REQUIREMENT	NOTES	1.5	
			1.0	1.5
ROOF MOUNTED	RESTRAIN ALL	1	RESTRAIN ALL	-
FLOOR MOUNTED	RESTRAIN ALL	1, 2	RESTRAIN ALL	-
WALL MOUNTED	RESTRAIN ALL	1, 2	RESTRAIN ALL	-
COMPONENT SUPPORTS	RESTRAIN ALL	1	RESTRAIN ALL	-
SUSPENDED EQUIPMENT	RESTRAIN ALL	3	RESTRAIN ALL	3
SUSPENDED DUCTILE PIPING (STEEL, ALUMINUM, COPPER, ETC.)	>3"	4	>1"	4
SUSPENDED NON DUCTILE PIPING (CAST IRON, PLASTIC, CERAMIC)	RESTRAIN ALL	4	RESTRAIN ALL	4
SUSPENDED PIPE ON TRAPEZE	RESTRAIN IF ANY PIPE ON TRAPEZE > 3" RESTRAIN IF TOTAL WEIGHT OF PIPES ON TRAPEZE > 10 LBS/FT	4	RESTRAIN IF ANY PIPE ON TRAPEZE > 1" RESTRAIN IF TOTAL WEIGHT OF PIPES ON TRAPEZE > 10 LBS/FT	4
COMPONENT CERTIFICATION (SEE NOTE 6)	NOT REQUIRED	5	REQUIRED	5

#### NOTES:

- EQUIPMENT 20 LBS. OR LESS IS EXEMPT IF FLEXIBLE CONNECTIONS ARE PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED PIPING AND CONDUIT.
- RESTRAINTS ARE NOT REQUIRED IF THE COMPONENT WEIGHS 400 LBS. OR LESS, IS MOUNTED AT 4 FT. OR LESS ABOVE A FLOOR, AND HAS FLEXIBLE CONNECTIONS BETWEEN THE COMPONENT AND ASSOCIATED PIPING AND CONDUIT.
- FLEXIBLE CONNECTIONS REQUIRED FOR PIPE CONNECTIONS ONLY.
- RESTRAINT IS NOT REQUIRED IF THE PIPING IS SUPPORTED BY HANGERS AND EACH HANGER IN THE PIPING RUNS 12 IN. OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE. WHERE PIPES ARE SUPPORTED ON TRAPEZE, THE TRAPEZE SHALL BE SUPPORTED BY HANGERS HAVING A LENGTH OF 12 IN. OR LESS. WHERE ROD HANGERS ARE USED, THEY SHALL BE EQUIPPED WITH SWIVELS, EYE NUTS OR OTHER DEVICES TO PREVENT BENDING IN THE ROD.
- COMPONENT CERTIFICATION MUST BE SUPPLIED BY THE EQUIPMENT MANUFACTURER AT TIME OF SUBMITTAL FOR REVIEW BY ENGINEER OF RECORD.

#### PLUMBING ABBREVIATIONS

ABBR	DESCRIPTION
140FH	DOMESTIC HOT WATER SUPPLY
140HR	DOMESTIC HOT WATER RETURN
A/C	ABOVE CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BFP	BACKFLOW PREVENTER
BTU	BRITISH THERMAL UNIT
BV	ISOLATION VALVE
BWV	BACKWATER VALVE
C	DOMESTIC COLD WATER SUPPLY
CFM	CUBIC FEET PER MINUTE
CO2	CARBON DIOXIDE GAS
CV	CONCENTRIC VENT
DS	DRY TYPE FIRE SPRINKLER PIPING
FCO	FLOOR CLEANOUT
FFM	FFET PER MINUTE
FS	WET TYPE FIRE SPRINKLER PIPING
FT	FEET
GCO	GRADE CLEANOUT
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HA	HAMMER ARRESTOR
HB	HOSE BIBB
IN	INCHES
IN WG	INCHES WATER GAUGE
PC	PLUMBING CONTRACTOR
S	SANITARY/WASTE PIPING
TP	TRAP PRIMER
UG	UNDER GROUND
V	VENT PIPING
VTR	VENT THRU ROOF
WCO	WALL CLEANOUT
WH	WATER HEATER

#### PLUMBING SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
[BFP]	BACKFLOW PREVENTER	○ BWV	BACKWATER VALVE
— —	FLOW CONTROL	— —	CONTROL VALVE
— — —	PRESSURE REDUCING VALVE	— — —	BALANCING VALVE
— —	SWING CHECK VALVE	○ ○	ISOLATION VALVE
— —	PLUG VALVE	— —	SOLENOID VALVE
○	PIPE UP	○	PIPE DN
— —	PIPE REDUCER	— —	PIPE STRAIGHT TEE
— —	PIPE TEE DN	○ FCO	FLOOR CLEANOUT
— —	WALL CLEANOUT	● FD	FLOOR DRAIN WITH FLOOR SLOPED TO DRAIN
— —	HOSE BIBB - INTERIOR, EXTERIOR	□	TRAP PRIMER
○ VTR	VENT THRU ROOF	— —	SANITARY AND WASTE PIPING
— —	VENT PIPING	— —	DOMESTIC COLD WATER PIPING
— —	DOMESTIC HOT/TEMPERATE WATER PIPING		

#### PLUMBING CODES & STANDARDS

CODE	DESCRIPTION
I.B.C. (2015)	INTERNATIONAL BUILDING CODE
I.E.C.C. (2009)	INTERNATIONAL ENERGY CONSERVATION CODE
I.P.C. (2015)	INTERNATIONAL PLUMBING CODE

#### HAMMER ARRESTOR SCHEDULE

UNIT I.D.	PDI UNIT	FIXTURE UNIT	MANUFACTURER
HA	A	1-11	JOSAM 75000 OR EQUIVALENT ZURN, SMITH
HA	B	12-32	JOSAM 75000 OR EQUIVALENT ZURN, SMITH
HA	C	33-60	JOSAM 75000 OR EQUIVALENT ZURN, SMITH
HA	D	61-113	JOSAM 75000 OR EQUIVALENT ZURN, SMITH
HA	E	114-154	JOSAM 75000 OR EQUIVALENT ZURN, SMITH

#### GENERAL PLUMBING NOTES

- PROVIDE ALL MATERIALS AND LABOR NECESSARY FOR A COMPLETE PLUMBING SYSTEM.
- DO NOT SCALE DRAWINGS. OBTAIN ROUGH-IN DIMENSIONS FROM ARCHITECTURAL DRAWINGS OR FROM MANUFACTURERS PRINTED INSTRUCTIONS AND RECOMMENDATIONS ONLY.
- FIELD VERIFY LOCATIONS AND INVERT ELEVATIONS BEFORE BEGINNING WORK.
- COORDINATE PLUMBING SYSTEMS WITH ALL TRADES TO AVOID CONFLICTS PRIOR TO INSTALLATION OF PLUMBING COMPONENTS.
- OBTAIN ALL PERMITS AND INSPECTIONS FROM AUTHORITY HAVING JURISDICTION. THIS INCLUDES ALL FEES THAT MAY BE REQUIRED.
- PROVIDE OWNER WITH CERTIFICATES OF FINAL INSPECTION FROM AUTHORITY HAVING JURISDICTION.
- WHENEVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN FURNISH AND INSTALL COMPLETE AND READY FOR USE.
- UNLESS OTHERWISE SHOWN OR NOTED, ALL PIPING SHALL BE RUN CONCEALED IN WALLS, CHASES AND/OR ABOVE CEILINGS.
- ALL SUSPENDED PIPING SHALL BE SUPPORTED FROM BUILDING STRUCTURAL MEMBERS. IN NO CASE SHALL PIPING BE SUSPENDED FROM FLOOR OR ROOF DECK.
- PROVIDE DRAIN VALVES AT ALL LOW POINTS WHERE POSSIBLE IN HOT & COLD PIPING SYSTEMS.
- PROVIDE ALL VENT PENETRATIONS WHERE INDICATED ON FLOOR PLANS. COLLECT ALL VENTS ABOVE CEILING WHERE SHOWN.
- PROVIDE INSULATION FOR WASTE PIPING COLLECTING CONDENSATE DRAIN.
- INSTALL ALL SANITARY WASTE AND VENT PIPING IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS. PROVIDE HANGERS AND SUPPORTS WITHIN 12" OF EACH HORIZONTAL ELBOW.

#### PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE TYPE	FIXTURE DESCRIPTION	HOT WATER	COLD WATER	WASTE	VENT	MANUFACTURER	MODEL
FD-1	FLOOR DRAIN	CAST IRON, BOTTOM OUTLET FLOOR DRAIN WITH 6 INCH, ADJUSTABLE, NICKEL BRONZE, HEEL PROOF STRAINER HEAD. PROVIDE SQUARE STRAINER. PROVIDE WITH TRAP PRIMER CONNECTION.	—	1/2"	3"	1-1/2"	JR SMITH	2005
HB	HOSE BIBB	BRONZE QUARTER TURN, NON-FREEZE, AUTOMATIC DRAINING HYDRANT WITH STAINLESS STEEL FACE, HOSE CONNECTION, INTEGRAL VACUUM BREAKER AND DUAL CHECK VALVE. WHEEL HANDLE AND STAINLESS STEEL BOX WITH COVER OPENING.	—	3/4"	—	—	JR SMITH	5509QT
IMB	ICE MAKER BOX	POWDER COATED 20 GAUGE METAL ICE MAKER BOX WITH SWEAT VALVE TOP MOUNT INSTALLED WATER HAMMER ARRESTER.	—	1/2"	—	—	IPS CORP.	MB1HAAB
P-1	FLOOR MOUNTED WATER CLOSET - FLUSH TANK	FLOOR MOUNTED, FLOOR OUTLET, VITREOUS CHINA, SIPHON JET WATER CLOSET WITH ELONGATED BOWL (DESIGNED FOR A 1.28 GPM FLUSH CYCLE) AND MANUAL FLUSH VALVE. WATER CLOSET SHALL BE FITTED WITH OPEN FRONT SEAT WITHOUT COVER, FLUSH MECHANISM, AND WHEEL HANDLE ANGLE SUPPLY.	—	1"	4"	2"	ZURN FIXTURE ZURN SEAT	Z5535-HET Z5955SS-EL ZEMS6000AV-HET
P-1A	FLOOR MOUNTED WATER CLOSET - ADA FLUSH TANK	ADA COMPLIANT FLOOR MOUNTED, FLOOR OUTLET, VITREOUS CHINA, SIPHON JET WATER CLOSET WITH ELONGATED BOWL (DESIGNED FOR A 1.28 GALLON FLUSH CYCLE). WATER CLOSET SHALL BE FITTED WITH OPEN FRONT SEAT WITHOUT COVER, FLUSH MECHANISM, AND WHEEL HANDLE ANGLE SUPPLY. HANDLE SHALL BE ON APPROACH SIDE.	—	1"	4"	2"	ZURN FIXTURE ZURN SEAT	Z5555-K Z5955SS-EL
P-2	WALL-HUNG URINAL	CARRIER MOUNTED, WHITE VITREOUS CHINA URINAL (DESIGNED FOR A 0.5 GPM FLUSH CYCLE), 3/4" TOP SPUD, MANUAL FLUSH VALVE.	—	3/4"	2"	1-1/4"	ZURN FIXTURE ZURN VALVE	Z5755-U Z6003AV-EWS
P-3	UNDERMOUNT LAVATORY	UNDERMOUNT 17" x 13" VITREOUS CHINA BATHROOM SINK. THE LAVATORY SHALL BE PROVIDED WITH A COUNTER MOUNTED CENTER SET FAUCET WITH HARD WIRED SENSOR OPERATION. TRIM TO INCLUDE PERFORATED GRID STRAINER AND ADA OFFSET DRAIN FOR HANDICAPPED MODEL. 1-1/4" CAST BRASS (17 GAUGE) P-TRAP AND LOOSE KEY ANGLE SUPPLIES. DRAIN, TRAP, AND SUPPLIES SHALL BE INSULATED BY MEANS OF A LAY-SHIELD. SEE DETAIL.	1/2"	1/2"	1-1/2"	1-1/4"	KOHLER FIXTURE KOHLER FAUCET	LKD2433C K-13463-CP
P-4	BREAK ROOM SINK	4.5" DEEP, 18 GAUGE STAINLESS STEEL 30.5" x 18.5" SINGLE BOWL SINK. PROVIDE GOOSENECK FLEXIBLE SPOUT FAUCET WITH 4" BLADE HANDLES AND SIDE SPRAY. PROVIDE WITH CAST BRASS P-TRAP (17 GAUGE), WHEEL HANDLE ANGLE SUPPLIES, AND DRAIN. PROVIDE WITH FOOD WASTE DISPOSAL WITH CONTINUOUS FEED, 1/2 HP MOTOR AND GALVANIZED STEEL GRINDING ELEMENTS.	1/2"	1/2"	1-1/2"	1-1/4"	ELKAY FIXTURE ELKAY FAUCET	ELUHAD281645PD LKD2433C BADGER 5
P-5	Water Cooler	VANDAL RESISTANT, STAINLESS STEEL, BI-LEVEL, SELF-CONTAINED, WALL HUNG, NO LEAD, FILTERED, WATER FOUNTAIN. ORFICE HEIGHTS SHALL BE ADA COMPLIANT.	—	1/2"	(2) 1-1/4"	1-1/4"	Elkay	LRPBM28K
P-6	MOP SINK	24" x 24" PRECAST TERRAZZO MOP BASIN WITH 10" HIGH SIDES AND INTEGRAL 3" DRAIN. MOP SINK SHALL BE FITTED WITH ALUMINUM BUMPER GUARDS WITH VINYL INSERT, A CHROME PLATED FAUCET WITH VACUUM BREAKER, INTEGRAL STOPS, AND INTEGRAL CHECK VALVES. PROVIDE WITH FAUCET MOUNTED ON WALL 36" AFF. PROVIDE WITH WALL BACKSPASH, HOSE, AND MOP HOLDER BRACKETS.	3/4"	3/4"	3"	2"	FIAT FIXTURE T&S BRASS FAUCET	TSB-100 B-0665-BSTP

#### ELECTRIC WATER HEATER SCHEDULE

MARK	STORAGE (GALLONS)	KW	RECOVERY @ 90°F (GPH)	MANUFACTURER	MODEL	COMMENTS
WH-1	40.0	4.5	20.0	A.O. SMITH	DEL-40	SUSPENDED



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Revision Date Description

Town of James Island  
**James Island  
Town Hall**  
11221/126 Dills Bluff Road  
Charleston, SC.

Project Number: 15169-00  
Checked By: MAU  
Drawn By: EAG  
Date: 4/3/2017  
Scale: 1/2" = 1'-0"

**P001**  
**PLUMBING NOTES &  
LEGENDS**