

## **PLUMBING SYSTEM DESIGN**

### **Submission Requirements**

Tenant shall submit complete plans and specifications for all plumbing work as per the requirements of Exhibit B of the Lease, which shall consist of, but not be limited to the following:

- Plumbing floor plans including all plumbing fixtures, proper piping sizes, equipment locations and plumbing to Landlord's existing systems.
- Isometric diagram of water system (hot and cold) within the demised Premises.
- Isometric diagram of sanitary system and venting system within the demised Premises.
- All applicable details for floor drains, clean-outs, slab and roof penetrations, etc. sufficient for construction.
- Specifications including all materials and equipment.
- Plumbing fixture unit calculations. (Landlord Design Submittal Form DS8)

### **Landlord Provisions**

The Landlord provides the following in conjunction with the Tenant's plumbing system:

- Minimum ½" inch domestic water tap suspended from the structure above (minimum 2" for restaurant uses).
- A 4 inch sanitary waste tap located in a slab on grade blockout area.
- A 4 inch grease waste tap connected to a common grease waste interceptor (for restaurant use only).
- A gas service connection point at a central manifold in a service court.

### **Vent Requirements**

- Tenants shall extend a maximum of one vent through the roof.
- All roofing work shall comply with the Landlord's Standard Project Details and shall be done by the Landlord's roofing contractor at the Tenant's expense.

### **Tenants Sanitary Waste Connection**

The Tenant's waste connection must be located at the designated tap location. If an alternate location is approved by the Landlord, the tenant shall install a full sized plugged "Wye" with an accessible floor clean-out cover at the connection to serve future connections.

### **Water Meter**

A water meter shall be required only for "high user" occupancy types (i.e. restaurant, fast food, eyeglass lab, hair salon, theater, pet shop) as determined solely by the Landlord. If required, Tenant shall install a Landlord approved water meter with remote readout device at Tenant's expense.

## **SECTION XIV PLUMBING SYSTEM DESIGN**

## **Toilet Room facilities**

The Landlord shall provide toilet room facilities for general public use. All Tenants shall provide toilet facilities within the individual premises as required by all applicable codes.

The applicable City of Peoria requirements are governed by the Illinois Plumbing Code. The URL for the IPC website is:

[www.idph.state.il.us/rulesregs/77-0890.htm](http://www.idph.state.il.us/rulesregs/77-0890.htm)

or contact:

Illinois Department of Public Health  
535 West Jefferson Street  
Springfield, Illinois 62761  
Phone 217-782-4977  
Fax 217-782-3987  
TTY 800-547-0466

Toilet room requirements are based on area, occupancy and use.

**It is the responsibility of the Tenant's architect to satisfy all applicable code requirements.**

## **Clean-outs and Floor Drains**

Clean-outs must be installed at each restroom facility and other locations as required by Code or Landlord. Clean-outs shall terminate flush with the finished floor or wall within the Premises and shall not be permitted above the ceiling. All clean-outs shall be full size of pipe, but need not be larger than four inches. Any base building clean-outs that occurs within the Tenant premises shall be maintained and be accessible for use.

Floor drains are required to be installed in all toilet rooms and other locations where the floor may be exposed to liquids. The floor drain shall be a minimum 3-inch drain and shall be installed in accordance with the Landlord's Standard Project Details. A deep seal trap is required to be utilized. A trap primer shall be provided only if required by the local Plumbing Code requirements.

## **Grease, Sediment and Hair Interceptors**

An interceptor is required if Tenant's store operation will introduce grease, sediment, particles, hair or other materials, which can create blockages in the sanitary sewer lines. Tenant shall allow for servicing and cleaning at Tenant's expense.

Tenant shall install individual hair interceptors on all sinks, basins, and special sanitary units, which may in any way receive human or animal hair.

For food service tenants, a common grease waste piping system shall be stubbed into the premises, which is connected to a central grease waste interceptor. If the Tenant's occupancy requires the use of a sanitary sewer grease interceptor, the Tenant shall tap into the grease waste line provided at its own expense. Connection is subject to prior notification and Landlord review and approval. See the LOD for possible tap locations.

Tenant relocation of an existing grease/waste tap shall be at the Tenant's expense.

## **Waterproofing**

Toilet room floor slabs and other areas designated by the Landlord shall be waterproofed with a Landlord approved waterproofing membrane system.

The Tenant shall provide and install a perimeter waterproofing membrane beneath the finished floor and finish wall base. The membrane shall extend horizontally 1'-0" into the room from the face of the wall and vertically 6" above the finished floor. See SPD-14 for more information.

## Pipe Material Requirements

- Above ground waste: service weight cast iron.
- Above ground vent: cast iron, Schedule 40 galvanized steel, type "M" or "DMV" hard drawn copper pipe.
- Above ground water: type "K" hard and soft temper (ASTM B88) copper pipe.
- Below ground waste and vent: PVC Schedule 40 to comply with ASTM D2665, or service weight cast iron with compression type joints.
- Below ground water - type "L" hard and soft drawn copper pipe.
- Condensate Drain: Seamless copper drainage pipe, hard drawn, complies with ASTM B42.
- Gas piping shall comply with the specific requirements defined in this section of the Design Criteria Manual.

## Plumbing Materials and Fixtures Standards

- Backflow preventer valves, thermal expansion tanks and vacuum breakers shall be provided in accordance with good engineering practices and as required by Code.
- Water heater shall be installed in an accessible location by Tenant and shall be storage type electric water heater in compliance with Code requirements. Heater shall be UL Listed and a relief valve and drain pan shall be piped to open floor drain or other air gap drain. Instant type water heaters will be allowed subject to Landlord approval and provided the electrical service required by the device does not substantially impact the Tenant's general electrical service size.
- Water Closets shall be commercial grade fixtures, which comply with all applicable code requirements for gallons per flush, and installation heights and locations, and all other requirements.

- Tenant shall provide insulation on all above ground hot and cold water piping, and any miscellaneous piping such as condensate line piping. Insulation shall be a minimum of 1" thick with a vapor barrier and plenum rated insulation. All joints shall be insulated and sealed with vapor barrier cement. All insulation, vapor barriers, pre-molded fitting covers, shall have fire ratings, which comply with Code requirements.

## Plumbing Installation Requirements

Plumbing systems shall comply with the following installation requirements:

- Air chambers or shock absorbers shall be installed in piping system to prevent noise and damage due to water hammer. All branch piping shall have accessible service valves.
- Dielectric isolation is required at all dissimilar piping connections.
- Pipe supports shall be spaced no more than ten (10) feet apart. Horizontal piping shall be supported from structure above and as required by Code. Where piping is suspended from steel joists, the connection shall be made at the top chord of the joist.
- Any suspended piping outside Tenant's Premises shall be installed as close to the underside of the roof deck as possible, or installed on the roof where approved by Landlord.
- The domestic water piping system shall be flushed with clean potable water until contaminated water does not appear at the outlet and shall be filled with a solution containing fifty (50) parts per million of chlorine and allowed to stand as required by code before flushing. The system shall be flushed completely with clear water until all residual chlorine content is removed. Chlorination shall be performed after all piping and final connections and pressure testing has been completed.

## **Restaurant Plumbing and Gas Piping Systems**

*This criteria section is a supplement to the aforementioned typical requirements*

### **Kitchen Waste Requirements:**

- Restaurant Tenants shall be required to connect all three compartment sinks, mop sinks, and other fixtures and equipment which may introduce grease into the waste lines to the grease waste piping.
- Where a central grease trap is not existing, restaurant tenants shall install grease trap(s) outside the Premises as required by the Landlord and at a location designated by the Landlord.

**Water Meters** are required to be installed within the Premises in accordance with the Landlord's requirements. A remote water meter readout device must be installed in a location designated by the Landlord. Tenant shall locate the meter in an area acceptable to the Landlord and shall provide wiring from the meter to the remote read-out. Meter reading calibration shall be in cubic feet.

**Exposed Piping in the Kitchen** shall be chrome plated or painted with epoxy base paint, silver or chrome or approved color suitable for use in kitchen environments.

**Gas Storage Type Water Heaters** may be installed within the premises. Electric water heaters may be used if the electrical service allowed by the Landlord has sufficient capacity. Electric water heaters shall be 480 volt, 3-phase whenever possible. Either gas or electric heaters shall be of the storage type and shall be UL-Listed. Tenant shall provide hot water recirculation piping and pumps if necessary in accordance with good engineering practices and applicable Codes. Roof top or exterior water heaters are not allowed.

### **Gas Piping System Requirements:**

All natural gas distribution systems shall be fabricated and installed in accordance with NFPA 54 requirements and applicable Codes. A gas service connection point has been designated by the Landlord for connection by the Tenant. The Tenant shall contact the local utility company, CILCO, and pay for all expenses associated with the installation of the gas meter. Tenant shall extend piping from the point of connection provided by the utility company to all equipment and appliances within the Tenant's Premises. Tenant shall provide a gas valve downstream of their meter that will automatically shut off in a seismic event.

### **Gas Piping and Casing:**

- Gas piping shall be Schedule 40, black steel, ASTM A120 or A53. Fittings 2 inch and larger shall be welded; fittings 1 1/2 and smaller shall be screwed malleable iron. Piping underground and in return air plenum ceilings shall be encased if required by code.
- Gas casing shall be Schedule 40, black steel, welded, ASTM A120 or A53, with welded fittings, or as required by applicable Codes. Casing shall be completely gas tight and vented to the atmosphere as required.
- All piping installed on the roof shall be provided with special supporting means to allow for anticipated movement and to protect the roof. Pipe support blocks shall be of the non-binding type and shall be as approved by the Landlord's roofing contractor. All piping exposed to the weather shall be primed and painted with two coats of rust-inhibiting paint.

**Gas Cocks** shall comply with the following: 125-pound WOG, screwed, bronze, flat-head cock, shall be used for sizes two (2) inches and smaller. 175-pound WOG, semi-steel, lubricated shall be used for sizes 2-1/2 inches and larger.