SECTION 22 11 19 - DOMESTIC WATER PIPING SPECIALITIES

1.1 SECTION INCLUDES

A. Qualitative requirements for vacuum breakers, backflow preventers, plumbing thermostatic mixing valves, strainers, outlet boxes, hose bibbs, wall hydrants, water hammer arresters, trap-seal primer systems, domestic hot water return balancing device (manual), and clothes washer connection.

1.2 SUBMITTALS

A. Submittals are required and shall include product data noting materials, sizes, and dimensions.

1.3 QUALITY ASSURANCE

A. Vacuum breaker wall hydrants and freeze resistant wall hydrants shall meet ASSE Standard 1019.

B. Provide backflow prevention devices wherever possible sources of undesirable materials are connected to the potable water system.

C. The backflow prevention devices shall meet the standards set by the American Society of Sanitary Engineers and the latest edition of the Plumbing Code and air gap standards under American National Standards Institute A112.1.2-1943(1979).

D. The backflow prevention devices shall be approved for use by the Foundation for Cross- Connection Control and Hydraulic Research at the University of Southern California.

E. Atmospheric vacuum breaker per ANSI/ASTM 1020.

F. Hose connection vacuum breaker per ASSE 1011 and CSA B64.2.

G. Reduced pressure vacuum breaker per ASSE 1013, AWWA C511, CSA B64.5.

H. Pressure type backflow preventer per ANSI/ASSE 1035.

I. Dual check valve per ANSI/ASSE 1024, CSA B64.6.

J. Thermostatic mixing valves at the hot water source shall meet the Ohio Plumbing Code and the requirements of ASSE 1017.

K. ***Thermostatic mixing valves at the fixture shall meet the Ohio Plumbing Code and the requirements of ASSE 1070 and should be rated for a minimum flow of 0.5 GPM or less.***

L. Strainers shall meet NSF 61 and ASTM B 62.

M. Hose bibbs and wall hydrants shall meet ASSE 1019.

N. Water hammer arresters shall meet ANSI/ASME A112.26.1M and ASSE 1010.

O. Trap seal primers shall meet ASSE 1018.

P. ***Barrier-type floor drain trap seal protection devices shall conform to ASSE 1072***

Q. Clothes washer connection shall meet ANSI/ASSE 1035.

R. Emergency mixing valves shall meet ANSI2.***3588.1***-1998.

1.4 COMPONENTS

A. Atmospheric vacuum breaker shall have brass body, stainless steel working parts, integral strainer, rubber discs, maximum pressure, maximum 175 psi operation, unions.

B. Hose connection vacuum breaker shall have ¾ inch female hose inlet connection, ¾ inch male outlet connection, non-removal feature, plain brass finish.

C. Reduced pressure backflow preventer shall have fused epoxy coated cast iron check valve body and relief valve, replaceable bronze seats, bronze ball check valve test cocks, maximum 175 psi

operation, stainless steel internal parts, air gap connection for relief piping to drain.

D. Pressure type backflow preventer shall have atmospheric vent, all brass construction, in- line continuous operation, maximum 125 psi operation.

E. Dual check valve shall have straight line poppet type check modules, replaceable seats, brass construction.

F. Water Hammer Arresters: Shall be the stainless steel bellow type.

G. Balancing devices shall be bronze with adjustable control.

H. Domestic hot water anti-scald thermostatic mixing control valve unit shall include swivel action check stops, removable cartridge with strainer, stainless steel piston and liquid fill thermal motor with bellows element mounted out of water. The mixing valve shall control the domestic hot water temperature distributed throughout the building. The mixing valve shall have a thermostatic sensing unit. The mixing valve shall fail to the cold water side. Flow rate shall determine whether a single valve shall be required or a high/low valve with pressure reducing valves is required to provide the correct temperature at the minimum and maximum hot water flow in the building.

I. Strainers: Shall be bronze threaded, flanged, or soldered.

J. Outboxes: Shall be recessed with pressure backflow preventer.

K. Hose bibbs and Wall Hydrants: Shall be recessed or surface with vacuum breakers.

L. Exterior Wall Hydrants: Shall be non-freeze, self-draining with copper/bronze construction with recessed wall box with loose key.

M. Clothes Washer Connection Box and Refrigerator Supply: Metal recessed box complete with hot and/or cold water shut-off valves and drain connection.

N. Emergency thermostatic mixing valve: shall be liquid or bi-metal thermostats, cold water bypass, high limit stop, locked temperature regulator.

1.5 INSTALLATION

A. Provide vacuum breakers on all threaded hose bibb connections.

B. Install reduced pressure principle backflow preventer in irrigation and incoming domestic water service.

C. Install pressure type vacuum breakers in lines under continuous pressure and at least 12 inches above the highest outlet downstream of the unit.

D. Provide drain line from reduced pressure backflow preventer discharge outlet; extend to nearest drain.

E. Units shall be installed in strict accordance with manufacturer’s written instructions.

F. Test each backflow device and submit test data.

G. Provide thermostatic mixing valves to regulate the hot water temperature to a fixture. ***Provide ASSE 1070 thermostatic mixing valves at all public hot water fixtures.***

H. Provide a recessed washer box at each domestic clothes washer.

I. Provide a recessed box to supply water to each refrigerator.

J. Wall hydrants with hose connections shall be provided in the mechanical room and boiler room.

K. Provide a water hammer arrestor at each solenoid valves or piece of equipment that has a quick closing type valve. Water hammer arrester for down-feed risers to be at top of riser. Size shock absorber according to fixture unit count. Provide shock absorbers at each group of water closets and urinals. Shock absorber shall be easily accessible for repair or replacement.

L. Provide trap ***primer or trap*** seal on all floor drains to prevent trap seals from drying up.

M. Provide emergency thermostatic mixing valve with inlet and outlet thermometers to regulate tempered water to the emergency eye wash and/or showers.

END OF SECTION