GENERAL

Summary

Copper tubing and fitting system for hot and cold water distribution systems, sprinkler and standpipe systems and Hydronic Piping Systems.

Definitions

EPDM : Ethylene-Propylene-Diene-Monomer
NSF : National Sanitation Foundation
ASME : American Society of Mechanical Engineers
ASTM : American Society for Testing and Materials
IAPMO : International Association of Plumbing & Mechanical Officials
CSA : Canadian Standards Association
CRN : Canadian Registration Number
AWWA : American Water Works Association
FM : Factory Mutual
ICC : International Code Council
MSS : Manufactures Standardization Society
NFPA : National Fire Protection Association
UL : Underwriters Laboratory

References

ASME A13.1 : Scheme for the Identification of Piping Systems
ASME B1.20.1 : Pipe Threads, General Purpose (inch)
ASME B16.18 : Cast Copper Alloy Solder Joint Pressure Fittings
ASME B16.22 : Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings
ASME B16.26 : Cast Copper Alloy Fittings for Flared Copper Tube
ASME B31.9 : Building Services Piping
ASTM B75 : Standard Specification for Seamless Copper Tube
ASTM B88 : Standard Specification for Seamless Copper Water Tube
ASTM B813 : Standard Specification for Liquid and Paste Fluxes for Soldering Applications of Copper and Copper Alloy Tube
ASTM B828 : Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings
AWWA C651 : Standard for Disinfecting Water Mains
IAPMO : Uniform Mechanical Code
IAPMO : Uniform Plumbing Code
ICC : International Plumbing Code
ICC : International Mechanical Code

MSS-SP-58 : Pipe Hangers and Supports Materials, Design and Manufacturer
MSS-SP-69 : Pipe Hangers and Supports Selection and Application
NFPA 14 : Standard for the Installation of Standpipe and Hose Systems
NSF 61 : Drinking Water System Components - Health Effects

Guidelines to Ensure Quality Installation

Installer shall be a qualified installer, licensed within the jurisdiction, and familiar with the installation of JWPress copper press joint systems.

JWPress copper press fittings shall be installed using the proper tool, actuator, jaws and rings as instructed by the press fitting manufacturer.

The installation of copper tubing for hot and cold water distribution systems shall conform to the requirements of the ICC International Plumbing Code or IAPMO Uniform Plumbing Code.

The installation of copper tubing in sprinkler or standpipe systems shall conform to NFPA 13, 13D, 13R and 14.

The installation of copper tubing in Hydronic Systems shall conform to the requirements of the ICC International Mechanical Code or the IAPMO Uniform Mechanical Code.

Delivery, Storage and Handling of JWPress Fittings

Copper tubing shall be shipped to the job site on truck or in such a manner to protect the tubing. The tubing and fittings shall be carefully handled during shipment. Tubing and fittings shall be unloaded with reasonable care.

Protect the stored product from moisture and dirt. Elevation above grade and away from concrete flooring is desireable.

In the event press fittings are dropped, exercise the utmost care in visually inspecting them to assure that fittings have not been damaged or deformed.

Lockable vandal resistant storage is recommended because of the high scrap value of copper tubing and fittings.

Warranty

Both copper tubing manufacturers and JWPress warrant that their products are free from defects and conform to the designated standard. The warranty shall only be applicable to tubing and fittings installed in accordance with the manufacturer's installation instructions.

The manufacturer of the fittings shall not be responsible for the improper use, handling or installation of the product.

PRODUCTS

Manufactures

JWPress, Manufactured by Jungwoo Metal Ind. Co., Ltd.
71-30, Gamaksan-Ro 199Beon-Gil, Nam-Myeon, Yangju-Si, Gyeonggi-Do,
South Korea Zip Code : 11407
www.jwmetal.co.kr

Material

Tubing for use with JWPress fittings shall conform to ASTM B75 or ASTM B88.
Copper and lead free copper alloy JWPress fittings shall conform to ASME B16.18,
ASME B16.22 or ASME B16.26.

Press Fitting : Copper and copper alloy press fittings shall conform to material requirements
of ASME B16.18 or ASME B16.22,
and performance criteria of IAPMO PS 117.

Sealing elements for press fittings shall be EPDM.
Sealing elements shall be factory installed or
an alternative supplied by fitting manufacturer.

Integral Leak path design, assures leakage of liquids and/or gases from inside
the system past the sealing element of an unpressed connection.
This allows for quick and easy identification of connections
which have not been pressed prior to putting the system into operation.

All Threaded JWPress fittings, shall be manufactured with threads conforming to ASME B1.20.1
All Hangers and supports used in Piping systems
which include JWPress fittings shall conform to MSS-SP-58.
and shall be installed per local code.

Source Quality Control

All JWPress fittings are listed by a third party agency to conform to NSF 61 Annex G.
All JWPress fittings have been tested and are compliant with CSA standards.
All JWPress fittings have been registered and assigned CRN numbers for use throughout Canada.

EXECUTION

Examination

The installing contractor shall examine the copper tube and press fittings for apparent defects.
Visible defects should cause rejection of use in installation.
Do not attempt to make filed repairs to fittings when a visible defect has been noted.
The installing contractor shall ensure that sealing elements are properly
in place and free from damage.
For Sizes 2-1/2” to 4”, installer should ensure that the stainless steel grip ring is in place.

Preparation

A. Copper tubing shall be cut with a wheeled tubing cutter or
an approved copper tubing cutting tool.
The tubing shall be cut square to permit proper joining with the fittings.

B. Remove scale, slag, dirt and debris from inside and outside of tubing and fittings before assembly.
The tubing end shall be wiped clean and dry.
The burrs on the tubing shall be reamed with a deburring or reaming tool.

Installation General Locations

Plans indicate general location and arrangement of piping systems.
Identified locations and arrangements are used to size tubing and calculate friction loss,
expansion, pump sizing and other design considerations.
Install piping as indicated, except where deviations to layout are approved.

Installation

Pressure Rating: Install components having a pressure rating equal to or greater than the system operating pressure.

Install piping free of sags, bends and kinks.

Change in Direction: Install fittings for changes in direction and branch connections. Where approved, changes in direction may also be made by bending of Types K and L tube.

Solder Joints: Solder joints shall be made in accordance with ASTM B 828. The temperature of the joint during soldering shall not be raised above the maximum temperature limitation of the flux.

Threaded Joints: Threaded joints shall have pipe joint compound or teflon tape applied to the male threads only. Tighten joint with a wrench and backup wrench as required.

Press Connections: Copper and copper alloy press connections shall be made in accordance with the manufacturer's installation instructions. The tubing shall be fully inserted into the fitting and the tubing marked at the shoulder of the fitting. The fitting alignment shall be checked against the mark on the tubing to assure the tubing is fully engaged (inserted) in the fitting. The joints shall be pressed using the tool(s) approved by the manufacturer.

Pipe Protection: Provide protection against abrasion where copper tubing is in contact with other building members by wrapping with an approved tape, pipe insulation or otherwise suitable method of isolation.

Penetration Protection: Provide allowance for thermal expansion and contraction of copper tubing passing through a wall, floor, ceiling or partition by wrapping with an approved tape or pipe insulation or by installing through an appropriately sized sleeve.

Backfill Material: When using JWPress fittings protect against contact with cinders, refuse, stone, ash or other materials which can damage or break the tubing or promote corrosive action in any trench or excavation in which tubing is installed.

Install hangers for horizontal piping in accordance with MSS-SP-69 or the following maximum spacing and minimum rod sizes.

Vertical copper tubing shall be supported at each floor, unless otherwise specified by local building code.

To protect against galvanic corrosion, hangers and supports shall be either copper or vinyl coated, or insulated to prevent galvanic corrosion between the tubing and the supporting member.

In seismic areas, copper tubing shall be installed to local code.

Copper tubing systems shall be identified in accordance with the requirements of ASME A13.1.

Field Quality Control

Air testing of system with JWPress :
The copper tubing system shall be air tested for joint tightness.
The piping system shall be pressurized with air to the maximum pressure of the system or to the code or standard required minimum for the required length of time. The system shall have no leaks at the rated pressure.

Water testing of piping system with JWPress :
The copper tubing system shall be water tested for joint tightness. The piping system shall be filled with water. The system shall be pressurized to the maximum pressure and length of time required by the code or standard. The system shall have no leaks at the rated pressure.

Cleaning (Potable Water Systems)

Disinfection of piping system :
The copper hot and cold water distribution system shall be disinfected prior to being placed in service. The system shall be disinfected in accordance with AWWA C651 or the following requirements:

The piping system shall be flushed with potable water until discolored water does not appear at any of the outlets.

The system shall then be filled with a water chlorine solution containing at least 50 parts per million of chlorine, and allowed to stand for 24 hours.
Consult local code to ascertain if more stringent cleaning is required.

Following the standing time, the system shall be flushed with potable water.