
232300 REFRIGERANT PIPING

Part 1 – GENERAL

1.1 Description

A. This section details the guidelines and expectations for the design and installation of refrigerant piping and fittings on Johns Hopkins University Homewood Campus. Project conditions and requirements vary, thus precluding the absolute adherence to the items identified herein in all cases. However, unless there is adequate written justification and approval from the JHFRE Engineering and Energy Department, it is expected that these guidelines will govern the design and specifications.

1.2 Submittals

A. Piping layouts shall be designed to provide organized distribution systems which permit isolation of distinct sections without disruption of the entire building. Provide isolation valves at every major branch and at all unit connections. Provide manual air vents at all high points in the system and drain valves at all low points of the piping system.

B. Locate expansion loops and anchors on drawings. Expansion loops shall be used unless compensation devices are reviewed and accepted by the JHFRE Engineering and Energy Department.

1.3 Quality Assurance

N/A

Part 2 – PRODUCTS

2.1 Refrigerant and refrigerant vent piping shall be Type “K” copper, type OXY, hard tempered cleaned with ends capped.

2.2 Joints shall be non-flux silver-brazing alloy.

Part 3 – EXECUTION

3.1 All new piping must be treated and cleaned prior to connection to commons systems on the university utility distribution.

3.2 All piping take offs shall be from the top of the main piping. Avoid taking off on the bottom of pipes to avoid debris from being supplied via the take-off.

3.3 Filler sections of welded piping shall not be less than 18” in length.

3.4 Mechanical joints of any kind will not be acceptable.

- 3.5 Provide electrolysis control between dissimilar materials through the use of dielectric nipples and a non-dielectric union. Dielectric unions are not acceptable.
- 3.6 Double suction risers shall be employed on systems with capacity reduction and where required by lift.
- 3.7 Chillers shall be furnished with the necessary features to facilitate refrigerant recovery including recovery and transfer of entire refrigerant charge between self-contained isolation vessels, including with isolation valves in compressor discharge and condenser liquid lines.
- 3.8 Any long run of refrigerant piping over 20' requires an isolation valve. Any additional isolation valve requirements will be determined on case-by-case basis.