

**5230.5915 PIPING JOINTS.**

Subpart 1. **Design standards.** Piping joints must be designed for ammonia service. Joints must be designed for the pressure temperature and mechanical strength requirements of ammonia service and items A to E.

A. One and one-quarter inch and smaller joints may be threaded or welded. Threaded pipe must be American Society for Testing and Materials schedule 80 seamless. Threaded fittings must be 2,000 pounds per square inch rating. Threaded fittings must be forged steel.

B. Joints one and one-half inch and larger must be welded. Fittings must match pipe schedule and material. Welded pipe one and one-half inch and smaller must be jointed with the use of socket weld fittings of at least 2,000 pounds per square inch ratings or butt weld fittings of the same wall thickness and material as the pipe. Socket weld fittings must be forged steel.

C. Flanges must be a tongue and groove type, or raised face type, rated and designed for ammonia service and system pressure.

D. Gaskets must be designed for ammonia service and system pressure.

E. Unions must be at least 2,000 pounds per square inch forged steel ground joint unions, and must be used only for three quarters inch and smaller pipe.

Subp. 2. **Branch, run-outs, laterals, and saddles.** When joining carbon steel to carbon steel material, if the main piping is two inches and smaller, or the branch or run-out is two inches and smaller, branch or lateral connections must be forged steel TEE fitting, forged steel WELD-O-LET™ or THREAD-O-LET™, or engineering equivalent of at least 3,000 pounds per square inch rating. Engineering equivalency must be based on proper documentation signed by a registered professional engineer. When joining materials other than carbon steel to carbon steel, ASME standard B31.5 must be followed.

Where the main piping exceeds two inches, branch or lateral connections must be made by forged steel TEE fitting, be forged steel WELD-O-LET™, or THREAD-O-LET™ of at least 2,000 pounds per square inch rating; or in cases where the branch exceeds two inches (further providing that a branch lateral or saddle is two pipe sizes smaller than the main piping it is connected to) the connection may be made by the use of a saddle or lateral connection that complies with the requirements of this part.

Branches or run-outs the same size as the main must be connected using forged steel TEE fittings.

Welding of saddles and laterals must comply with the provisions of ASME standard B31.5.

Subp. 3. [Repealed, 34 SR 145]

Subp. 4. [Repealed, 34 SR 145]

Subp. 5. **Components.** The assembly of the various components, whether done in a shop or as a field erection, must be done so that the completely erected piping and equipment conform with the requirements of this chapter.

Subp. 6. **Examination of welded pipe joints.** All welds on ammonia piping systems must comply with the visual examination acceptance standards in section 527.3.2 of ASME B31.5. When nondestructive examination other than visual examination is required by job specification or by the administrative authority, the welds must comply with the acceptance standards in section 536.6.3 of ASME B31.5 for each type of nondestructive examination required. All costs of nondestructive testing shall be paid by the installing contractor. The contractor shall provide a copy of all examination results to the administrative authority upon request.

**Statutory Authority:** *MS s 326.46; 326B.90; 326B.925*

**History:** *17 SR 438; L 2007 c 140 art 10 s 11; art 13 s 4; 34 SR 145*

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