

Information Bulletin No. IB21-005

July 20, 2021

## Leak Testing Components ASME B31.3

This Information Bulletin provides guidance with respect to leak testing of individual components that are to be used in a pressure piping system constructed to the ASME B31.3 Process Piping code. This Information Bulletin supersedes Information Bulletin IB13-005 which is hereby withdrawn.

### Introduction

In context of ASME B31.3, “components” of a piping system include bolting, fittings, valves, flanges, pipe, tubes, gaskets, hangers and supports. This Information Bulletin applies to fittings, valves, flanges and sections of pipe or tubing that are not installed at the time of the initial leak test of the entire system. For example, any field installed component (fitting, valve, etc.) that connects to piping system that has been previously leak tested.

ASME B31.3 paragraph 345.1 requires piping systems to be subjected to a leak test to ensure tightness before the piping system is placed in service. The leak test is to be performed after all examinations of the system and components have been completed per paragraph 341.3.1 (e.g. radiography, visual inspection). *Joints and connections* are to be examined for leaks during the test per paragraph 345.2.2. B31.3 does not specify acceptance criteria (e.g. permissible leakage rate), presumably because it is a fundamental intention the piping system is designed and constructed to *contain* the service fluid. The Code does not specifically require examination of components for leaks during the test, however, it is reasonable to expect that all elements of the piping system do not leak

Paragraph 300(b)(1) mandates the Owner’s responsibility for establishing the requirements for testing and examination.

It should be noted that the individual components (e.g. valves) may have been tested to different standards that don't necessarily meet B31.3 requirements (326.3) and that it's the owners responsibility to ensure they are meeting the requirements of the code.

## **Guidance**

All components shall be leak tested with the entire system unless otherwise specified by the Owner.

Alternatives to and Special provisions for leak testing can be found in B31.3 paragraphs 345.1.a/b, 345.2.3 and 345.9

The owner's specifications for piping construction (and repair) should clearly establish requirements for leak testing and examination of components that are not installed in the piping system at the time of the system leak test. A risk informed decision process should be used to determine the testing and examination requirements for components that are not tested as part of the complete system.

*<original signed by>*

Mike Poehlmann, P.L. (Eng.)  
Administrator, Province of Alberta Pressure Equipment Safety  
Chief Inspector, ABSA the pressure equipment safety authority