Weeks, T., McColskey, D., Richards, M., **Wang, Y.-Y.**, and Quintana, M., Curved-Wide Plate Testing of X100 Girth Welds, Proceedings of the 10th International Pipeline Conference, 2014, Calgary, Alberta, Canada, Paper no. IPC2014-33690

Abstract

The curved-wide plate (CWP) tests are frequently used for assessing the quality of pipeline girth welds. Despite a large number of CWP tests having been conducted at great expense over many decades, an industry consensus standard remains unavailable. Considerable effort at several research institutions is being focused on the standardization of test protocols. It is widely recognized that comparing results from CWP tests from different institutions is difficult if not impossible without accounting for all the possible parametric differences.

This paper presents the procedural details recently used in testing X100 girth welds. The protocols cover (1) specimen design and dimensions, (2) instrumentation plan and data acquisition, (3) specimen fabrication and preparation, (4) preparing and executing the tests, (5) processing of raw test data and (6) post-test metallurgical examination. The evaluation of specimen deformation, flaw growth, and comparison of test data with model predictions will be presented in a future paper. Certain CWP test data from this program were evaluated and compared to tensile strain models of the girth welded pipe in a recent paper [1].

Keywords

Curved wide plate tests, Test protocols, X100, Girth welds