

**Liu, M., Wang, Y.-Y., Weld Integrity of High Strength Pipelines: From Construction to in-Service Large Displacement Loading, Proceedings of X80 & HGLPS 2008: International Seminar on X80 and Higher Grade Pipe Line Steel, June 23-24, 2008, Xi'an, China**

### **Abstract**

API 5L Grade X80 linepipes have seen large scale applications in recent onshore pipeline constructions around the world. While the overall experience has been positive, some challenges have emerged from the project construction experiences. These challenges are likely to be magnified when higher grade linepipes are used in future pipeline projects. This paper starts with an overview of high strength pipeline construction projects in North America. Some of the challenges in those projects are described. The focus of this paper is on linepipe properties, welding, and weld integrity assessment for different service conditions. Recent research in these areas is examined. The paper concludes with highlights of future technology development needs, particularly with the understanding that grades higher than X80 may be used in the coming years.

### **Keywords**

Pipeline, Integrity, Construction, In-service loading, Ground movement