IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 6.252
Volume 2, Issue 1, October 2022

A Comparative Study of Piping Stress Analysis Methods with Different Tools, Techniques, and Best Practices

Vikas Thakaran
Independent Researcher
vikas.thakran198620@gmail.com

Abstract: *Piping stress analysis could be an important step in the engineering design sequence. It is also often referred to as the stress analysis for piping systems which finds extensive application in the chemical, electricity, and oil and gas sectors, among others. This review paper aims to provide an extensive overview of numerous methodologies worked out for pipe stress analysis, together with the applicable tools and best practices. The article tries to develop the primary ideas in the stress analysis including the stress types and the applicable standard controls on its evaluation. Piping stress analysis is commonly found on the CAESAR II and other applications such as AutoPIPE and ROHR2, discussing the software features, the accuracy of results and the shortcomings of the programs. A thorough review of the relevant literature highlights gaps in existing knowledge and makes it clear – again – why sensitivity analysis is so important, in particular about static and dynamic analysis. The conclusions are meant to assist engineers and researchers in choosing appropriate tools and ways of performing seamless and dependable piping stress analysis.*

Keywords: Piping Stress Analysis, Stress Analysis Tools, CAESAR II, AutoPIPE, Dynamic Stress Analysis, Static Stress Analysis, FEA