ABSTRACT

A pipe support or pipe hanger is a designed element that transfer the load from pipe to the supporting structures. The load includes the weight of the pipe proper, the content that pipe carries, all the pipe fittings attached to the pipe covering such as insulation. The four main functions of a pipe support are to anchor, guide, absorb shock, and support a specified load. Pipe supports use high and low temperature applications may contain insulation materials. The overall design configuration of a pipe support assembly is dependent on the loading and operation conditions.

The finite element technique is applied for conducting the strength design of 3D wall mount used to support piping. The FE model of the fixed support is created and the stress distribution and deflection were analysed with the 3D model, shape of the mount bracket is as inverted c-section. Wall mount bracket is fixed on the top side at the hole locations that is in practical scenario the hole on the top side the mount is fixed to wall by nails. Loads are applied on the open locations as it is a c- section model as a uniformly distributed load as it supports pipe. The objective of the project is to deal with the analysis of c- shaped wall mount bracket having uniform distributed load at its bottom surface and find out the value total deformation, principle stress, von mises stress using ANSYS.