

Heat transfer analysis in I section beam

Aakash Rana

Department of Mechanical engineering, IIT Bombay

Abstract

The I-shaped cross-section of the beam is commonly used for any structural development. They are well designed according to calculations of the shear forces and bending moment acting on them. However, in the case of applying these beams where they are exposed to a temperature higher than the atmospheric temperature, additional thermal stresses will be induced, and the hotspot may be developed at critical areas like flange and wedge intersection. So, there is a need to check the integrity of the beam cross-section as there will be some metallurgical limit of the cross-section. In this project, different results have been generated for different cases like with/without insulation for different materials. To carry out desired study and get the result chtMultiRegionFoam solver has been used.