

Abstract

The main aim of This Project is to study the behavior of cellular steel beams. A numerical model has been developed to predict the ultimate load and the associated failure mode. The developed model takes into account material and geometric nonlinearity as well as initial geometric imperfections. The validity and the accuracy of the proposed numerical model have been checked by analyzing cellular beams from two experimental investigations reported in the literature. A comparison between experimental and numerical results has show that the numerical model can predict with good accuracy the ultimate load and the modes of failure.

Key words: cellular beams- numerical model – nonlinearities - failure modes- loads of failure