



Structural Behaviour of Building under Various Loading Conditions: An ANSYS-Based Study

Lokesh Marathe

D.Y. Patil College of Engineering, Pune, India

Dipak Thakur

D.Y. Patil College of Engineering, Pune, India

Anjali Dhotre

D.Y. Patil College of Engineering, Pune, India

Pooja Ritewad

D.Y. Patil College of Engineering, Pune, India

Abstract:

This study investigates the structural behaviour of buildings under various loading conditions using ANSYS. Different load cases, including dead load, live load, wind load, and seismic forces, are applied to evaluate stress distribution, deformation, and overall stability. The analysis helps identify critical structural responses and potential failure zones. Results demonstrate the effectiveness of numerical simulation in predicting building performance. The findings contribute to safer and more efficient structural design practices.

Keywords:

Structural behaviour, ANSYS simulation, load cases, stress distribution, deformation, structural stability, seismic and wind loads, numerical analysis, failure zones, building performance.