

*Challenge Journal of*

# STRUCTURAL MECHANICS

Vol.9 No.1 (2023)

auxetic building codes compressive strength dynamic analysis earthquake finite element analysis finite element method girder bridge mechanical properties metaheuristic algorithms modal analysis optimization prestressing pushover analysis reinforced concrete seismic design shallow foundations smart concrete steel structures structural dynamics temperature effects thick plate wind



**TULPAR**  
ACADEMIC PUBLISHING

ISSN 2149-8024



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