Abstract

Khaled M. Shawki

OPTIMUM DESIGN OF TRADITIONAL HORIZONTAL FORMWORK USING GENETIC ALGORITHMS

An optimization design using genetic algorithms (GA) for traditional horizontal formwork (slab form) is presented .The traditional slab formwork consists of sheathing , joists, stringers and shores. The objective function considered is the total weight (or cost) of the formwork .The objective function is minimized and it is subjected to allowable lumber strength requirements. The genetic algorithm operators (crossover , mutation, type of crossover , convergence criteria , etc) are tuned using the standard ten bar truss sizing problem. Finally three examples show the effectiveness of this procedure are presented to find the optimum formwork system.