

# **Abstract**

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## **Design and Construction of Multitier Shoring Towers**

The construction of heavy and high concrete slabs is considered as a great problem in projects because they need very efficient formwork systems. The multi-tier shoring towers (as vertical supporting members) appear as the common solution for this problem in addition to plywood sheathing, steel, wood, aluminum as joists, stringers as secondary and main beams. The multi-tier shoring towers are made of painted steel, galvanized steel, aluminum, they are modular, can be used a large number of times, much faster to erect and have high loading capacity. According to the increase in demand for this type, the reason to study them is extremely needed. This paper determines the minimum weight of slab formwork using this system. The genetic algorithm is used as an optimization technique. An example is provided to illustrate the design procedure. The design procedure is shown through a computer model called OSAF.