

POST TENSIONED FLOORS AS AN ECONOMIC ALTERNATIVE IN EGYPTIAN MARKET (CASE STUDY)

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Abstract

Post tensioned "PT "floors are one of the most widely used systems for building construction all over the world. Such systems have too many behavior, construction and economic benefits over other systems used for relatively long span floor system . In Egypt, the use of PT systems still has market and economic constraints related to practice and leading to very limited use of such superior system. This paper aims at investigating in-depth the different merits of PT systems considering behavior, design, construction and economic issues. In addition a numerical study for comparison of the costs with the RC flat slab construction which is the most commonly used system in the Egyptian market. Economic span of PT systems and the saving in concrete, rebar costs as balanced to the additional PT strands, ducts and accessories are investigated. Results indicated the advantages of using PT floor systems especially for relatively large spans and multistory construction where time plays an important role. Spans more than 8.3 meters, PT system proved to be more economic according to the Egyptian market practice. This economic span becomes slightly less in case of more live loads.