Technical note: Risk detection in light steel frame buildings in design, construction and implementation phases

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ABSTRACT
Light Steel Frame System that is briefly called "LSF" is a building system which is used for implying of short-rise and mid-rise buildings (up to five floors). It is a desirable building system for civil engineers (in terms of gravity and lateral load) in developing countries. This system gets significant benefits, although in Iran it is not much used due to the reasons such as: opposite with people’s culture, higher price in, lack of specialists, executive problems and etc. So in this article, we are tried to study LSF structures from the design and implementation stage to the operation and identify its risks exactly and finally offer a solution for each risk. Risk detections process is executed with interview technique in the Mashhad city and countryside. Totally, 56 projects are examined in this research. The study projects have been classified here. This classification includes residential buildings, villas, added-storey, schools, administrative, commercial, fastfood, industrial structures and LSF non-load-bearing walls. All the mentioned projects have been implemented in holy city of Mashhad or will be implemented in the future. Designers, administrators and employers are interviewed in person in all the above projects. Because of novelty of this system and its unknown risks, this research can be useful for managers decision making and for executing engineers in the field of choosing the best system for project and adoption of appropriate method for preventing these risks.

Keywords:
LSF structures
Risk identification
Risk classification
Design phases risks
Construction phases risks
Operation phases risks
Risk response

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DOI: 10.22065/jsce.2017.80905.1125