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## Abstract

The dissertation thesis "Fire resistant structures for tunnel structures using Liapor light aggregate" gives an overview of the current state of knowledge in the field of behavior of lightweight concrete when subjected to high temperature stresses. The theoretical part describes the experience and results of lightweight concrete experiments in the Czech Republic and abroad. The experimental part is focused on experimental research. In the framework of experimental research, the behavior of structures made of lightweight concrete in its fire load and various temperature regimes was monitored and verified. Part of the work was also the assessment of changes in properties of concrete after exposure to fire load. Conclusions of the thesis, based on experimental measurements, evaluate and describe suitable combinations of states in which light concrete uses their properties in favor of fire resistance of structures created from them.