Advance Researches in Civil Engineering
ISSN: 2645-7229, Vol.3, No.3, pages: 32-41

Studying Mechanical Properties of Lightweight Concrete by the Effects of Masonry Mel Powder as Additive Percentage to Cement

Arash Sohrabi [1], Samad Dehghan [2], Gholamreza Andalib [3*]

[1] R&D director, Deputy of Civil Engineering, Tabriz municipality, Tabriz, Iran

[2] Education department, Director, East Azerbaijan Engineering Organization, Tabriz, Iran

[3] Department of Water Resources Engineering, Faculty of Civil Engineering, University of Tabriz*

(Gholamreza.andalib@gmail.com)

(Date of received: 08/05/2021, Date of accepted: 29/08/2021)

ABSTRACT

In recent years, with the increase of pollution problems of cement factories and its impact on the environment, there is always a great need to achieve high-strength structural lightweight concretes using local and inexpensive materials. To be sustainable development is also done. At present, an attempt has been made to use masonry powder to improve the mechanical properties of lightweight structural concrete. For this purpose, 180 cylindrical concrete specimens in dimensions of 15 x 30 with 25 types of mixing designs, including powdered concrete concretes with different selected times were considered. The results of this study, which was performed by performing the above tests on samples made in 7-day, 28-day and 90-day time, showed that the use of masonry powder at the rate of 18% of cement weight, while reducing the weight of concrete, increased strength has been. Concrete compression was 50% if microsilica was used and its compressive strength was increased by 30% if microsilica was not used.

Keywords:

Concrete, Mel powder, Light weight, Structure, Masonry.