

Experimental and Analytical Study of Stress-Strain Relationship in Concrete¹

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Abstract

Stress -Strain relationship of Concrete changes according to the raw materials used in Concrete mixture. As long as these raw materials are local, it should be locally tested, and by this test the real concrete behavior can be recognized, this test can be considered to be more realistic than the one concluded from testing raw materials that would differ in characteristics from local raw materials.

In this research local experiments are carried out at civil engineering faculty, laboratory by breaking locally made Concrete specimens with defined characteristics under one directional pressure loadings, and recording the relationship between applied stress and resulted strain for each step, from the beginning loading of till the breakage of the specimen, The strain-stress asymptotic curve was consequently drawn.

The specimens made according to different factors such as distinguished resistance, the proportion of water to cement, the proportion of aggregates to cement. A formula WAS concluded using the stress-strain relationship, and this formula has been compared with other Existing formulas.

¹ For the paper in Arabic see pages (51-65).

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