

# UNIVERSITAS INTERNASIONAL BATAM

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## INFLUENCE ANALYSIS OF NANOSILIKA MIXED USE ON CONCRETE'S PRESSURE STRENGTH

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### ABSTRACT

*The development of urban areas is so rapid, especially in the field of construction projects such as building construction. The development of urban areas is followed by the development of increasingly sophisticated technologies, especially in this concrete technology. This results in an increase in the concrete mixture. However, the numerous demands for the strength of high quality concrete motivate the writer to investigate by using nano silica mixtures as added ingredients. In this thesis, the writers use a mixture of K-300 concrete with nano silica which is adjusted to the levels that have been calculated with the aim to determine changes in the slump value, compressive strength and bonding time of the concrete. In this study, a mixture of fresh concrete with K-300 quality was mixed with nano silica with levels of 3%, 5% and 7% to cement and normal concrete with 0% nano silica as a control. The writers carry out the process of compressive strength testing of concrete in accordance with the age of concrete that has been determined that is 7, 14, 21, and 28 days with slump values about  $\pm 12$ . At the age of 28 days the results obtained were compressive strength of 208,940 kg/cm<sup>2</sup>, 216,560 kg/cm<sup>2</sup> and 240,770 kg/cm<sup>2</sup> with nano silica content of 3%, 5% and 7%, which experienced a decrease in compressive strength of concrete compared to the results obtained in compressive strength of normal concrete was 265,68 kg/cm<sup>2</sup>.*

**Keywords:** *Concrete compressive strength, nanosilika, slump values.*