

ABSTRACT

Title: Studi Ekperimental Beton Mutu Tinggi Dengan Penambahan Superplasticizer Ditinjau Dari Kuat Tekan Beton Dan Modulus Elastisitas Beton : Marmo Soen Hawer NIM : 41116320083, pembimbing Agung Sumarno ST. MT,

Concrete is one of the main ingredients that are often used in building construction. Concrete is a material produced by a mixture of cement, fine aggregate, coarse aggregate, water and sometimes with the addition of additives (admixture). The research was conducted to determine the effect of added material in this type of superplasticizer on the concrete compressive strength and actual elastic modulus and theoretical on high quality concrete. This test uses a cylindrical specimen with a cylinder size $\text{Ø}15 \text{ cm} \times 30 \text{ cm}$ with the addition of varying levels of superplasticizer namely BV0 (0% of the weight of cement), BV1 (0.5% of the weight of cement), BV2 (1.0% of the weight of cement), BV3 (1.5% by weight of cement), BV4 (2.0% by weight of cement) and BV5 (2.5% by weight of cement) with each variant divided into 6 (six) test pieces. The study tested the compressive strength of concrete at the age of 7 days and 28 days while testing the modulus of elasticity was carried out only at 28 days. The results of the compressive testing showed that the compressive strength of concrete by using variations in superplasticizer levels of BV5 of 2.5% by weight of cement produced the highest compressive strength of all variations of superplasticizer usage, namely 71.47 MPa, while with the smallest superplasticizer variation BV0 0, 0% of the weight of cement produces a compressive strength of 34.93 Mpa and for testing the elastic modulus of concrete shows that the actual modulus of elasticity is smaller than the modulus of elasticity of the theory. In testing the elastic modulus shows that the greater the level of superplasticizer, the higher the elastic modulus and the higher the compressive strength value, the higher the elastic modulus value.

Keywords: Compression Streght, High Streght Concrete, Modulus of Elastisity, Superplastizicer

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