PENGARUH PENAMBAHAN ZAT ADITIF FOSROC AURAMIX 215 TERHADAP KUAT TEKAN BETON MUTU FC' 35 MPa

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ABSTRAK

Beton merupakan material konstruksi yang paling banyak digunakan karena unggul dalam kuat tekan, ketersediaan bahan, dan kemudahan pengerjaan. Untuk mencapai mutu beton yang optimal, sering diperlukan bahan tambah (admixture) guna meningkatkan kinerja beton, baik dari segi *workability* maupun kuat tekan. Penelitian ini menggunakan Fosroc Auramix 215, yaitu *superplasticizer* yang berfungsi mengurangi kebutuhan air tanpa mengurangi *workability* beton. Penelitian bertujuan mengetahui pengaruh penambahan Fosroc Auramix 215 terhadap nilai slump dan kuat tekan beton mutu rencana fc' 35 MPa. Metode yang digunakan adalah eksperimental laboratorium dengan variasi beton normal (BN) serta penambahan Fosroc Auramix 215 sebesar 0,5%, 1%, dan 1,5% dari berat semen. Pengujian meliputi nilai slump dan kuat tekan pada umur 1, 3, 7, dan 28 hari menggunakan benda uji silinder. Hasil penelitian menunjukkan nilai slump meningkat seiring bertambahnya persentase Fosroc Auramix 215, yaitu 10 cm (BN), 11 cm (FA 0,5%), 13 cm (FA 1%), dan 16 cm (FA 1,5%), di mana variasi FA 1,5% telah melampaui batas rencana slump 10±2 cm. Pada umur 28 hari, kuat tekan tertinggi dicapai variasi FA 1% sebesar 33,68 MPa (96,21% mutu rencana), diikuti FA 1,5% sebesar 32,12 MPa (91,78%), beton normal 29,35 MPa (83,87%), dan FA 0,5% sebesar 27,61 MPa (78,90%). Hasil ini menunjukkan penambahan Fosroc Auramix 215 sebesar 1% merupakan dosis optimum yang memberikan kuat tekan tertinggi dengan nilai *slump* masih relatif terkendali, sedangkan penambahan melebihi 1% cenderung menurunkan efektivitas peningkatan kuat tekan akibat over-dosis.

Kata kunci: Beton, Fc' 35 MPa, Fosroc Auramix 215, Kuat Tekan, *Slump*, *Superplasticizer*

THE EFFECT OF ADDING FOSROC AURAMIX 215 ADDITIVE ON THE COMPRESSIVE STRENGTH OF FC' 35 MPa CONCRETE

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ABSTRACT

Concrete is the most widely used construction material due to its superior compressive strength, material availability, and ease of workability. To achieve optimal concrete quality, admixtures are often required to enhance concrete performance, both in terms of workability and compressive strength. This study uses Fosroc Auramix 215, a superplasticizer that functions to reduce water demand without decreasing the workability of concrete. This research aims to determine the effect of adding Fosroc Auramix 215 admixture on the slump value and compressive strength of concrete with a design strength of fc' 35 MPa. The method used is a laboratory experimental method, with variations of normal concrete (NC) and the addition of Fosroc Auramix 215 at 0.5%, 1%, and 1.5% of cement weight. The tests conducted include slump value testing and compressive strength testing at the ages of 1, 3, 7, and 28 days using cylindrical specimens. The results show that the slump value increased along with the increasing percentage of Fosroc Auramix 215, namely 10 cm (NC), 11 cm (FA 0.5%), 13 cm (FA 1%), and 16 cm (FA 1.5%), where the FA 1.5% variation exceeded the planned slump limit of 10±2 cm. At 28 days of age, the highest compressive strength was achieved by the FA 1% variation at 33.68 MPa (96.21% of the design strength), followed by FA 1.5% at 32.12 MPa (91.78%), normal concrete at 29.35 MPa (83.87%), and FA 0.5% at 27.61 MPa (78.90%). These results indicate that the addition of 1% Fosroc Auramix 215 is the optimum dosage, providing the highest increase in compressive strength while maintaining a relatively controlled slump value, whereas additions exceeding 1% tend to reduce the effectiveness of compressive strength enhancement due to overdosing.

***Keywords**: Concrete, Fc' 35, Fosroc Auramix 215, Compressive Strength, Slump, Superplasticizer*