

INTISARI

Perkembangan dunia konstruksi di Indonesia ikut mendorong bertambahnya penggunaan beton sebagai material perkuatan struktur. Bata ringan saat ini dikenal ada 2 (dua) jenis yaitu *Autoclaved Aerated Concrete (AAC)* dan *Celluler Lightweight Concrete (CLC)*. CLC sering disebut juga beton Non-AAC (*Autoclaved Aerated Concrete*). Dimana beton yang mengalami proses curing secara alami ini belum banyak dikomersialkan dibanding beton ringan AAC. Penelitian ini di bertujuan untuk mendapatkan komposisi dan mengetahui hasil kuat tekan, porositas, dan berat jenis *Non Autoclaved Aerated Concrete (NAAC)*.

Bahan penyusun yang meliputi air, pasir, semen *mill*, cairan pengeras *Sika Cim*, *Fly Ash* dan *Hidrogen peroksida*. Dengan focus pada metode pengadukan yang sangat berpengaruh pada hasil 4 uji *trial*, kemudian ditetapkan pada *trial* ke 4 sebagai benda uji dan koefisien *Water/cement (w/c)*: 0,26, *Sand/Cement (s/c)*: 0,33, H_2O_2 : 0,5, *fly ash/ Cement (f/c)*: 0,16, *mill/ Cement (%)*: 0,16. Kemudian pengujian yang dilakukan yaitu uji kuat tekan, porositas dan uji berat jenis.

Pada hasil uji kuat tekan campuran beton ringan yang berjumlah 9 *eksperimen* rata-rata nilai kuat tekan tertinggi diperoleh pada BRD-04 dengan nilai 4,22 MPa. Dan rata-rata nilai kuat tekan terendah di peroleh pada *eksperimen* BRD-08 yaitu 2,34 MPa. Porositas tertinggi didapat pada *eksperimen* BRD-04 dengan nilai 28,72% dan porositas terendah di dapat pada *eksperimen* BRD-02 dengan nilai 19,31%. Hasil rata-rata nilai berat jenis dengan nilai tertinggi di dapat dari *eksperimen* BRD-05 yaitu dengan nilai 1041,3 kg/m³ dan nilai terendah diperoleh oleh *eksperimen* BRD-03 dengan nilai 824,2 kg/m³.

ABSTRACT

The development of construction in Indonesia contributed to the increase in the use of concrete as a structural reinforcement material. Light brick is now known there are two (2) types Autoclaved Aerated Concrete (AAC) and Cellular Lightweight Concrete (CLC). CLC is often referred to as Non-AAC Concrete (Autoclaved Aerated Concrete). Where concrete is cured without autoclave is not yet widely commercialized than lightweight concrete AAC. This study aimed to get to know the composition and results of compressive strength, porosity, and density Non Aerated Autoclaved Concrete (NAAC).

Building blocks which include water, sand, cement mill, liquid hardener Sika Cim, Fly Ash and Hydrogen Peroxide. With a focus on the method of stirring a highly influential on the results of four test trial, then the trial is set to 4 as the test specimen and the coefficient Water/cement (w/c): 0,26, Sand/Cement (s/c): 0,33, H₂O₂ : 0,5, fly ash/ Cement (f/c): 0,16, mill/ Cement (%): 0,16. Later tests performed that test compressive strength, porosity and density test.

In the compressive strength test results of lightweight concrete mixture totaling 9 experiments average the highest compressive strength values obtained at BRD-04 with a value of 4.22 MPa. And the average value of the lowest compressive strength was obtained in experiments BRD-08 is 2.34 MPa. The highest porosity obtained in experiments BRD-04 with a value of 28,72% and the lowest porosity in the experiments can BRD-02 with a value of 19,31%. The average yield value of density with the highest values obtained from experiments BRD-05 with a value 1041.3 kg / m³ and the lowest value obtained by experiments BRD-03 with a value of 824.2 kg / m³.