

AMOBILISASI ION Pb^{2+} OLEH GEOPOLIMER YANG DISINTESIS DARI ABU LAYANG PT. IPMOMI PROBOLINGGO

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ABSTRAK

Sintesis geopolimer abu layang PT. IPMOMI Probolinggo dengan variasi S/L, rasio SiO_2/Al_2O_3 dan amobilisasi kation logam Pb telah dilakukan. Sintesis geopolimer variasi S/L = 3,59 memiliki kuat tekan tertinggi sebesar 33,70 MPa dengan viskositas 720 cps. Rasio $SiO_2/Al_2O_3 = 6,45$ variasi Si tetap memiliki kuat tekan yang lebih tinggi dibandingkan rasio SiO_2/Al_2O_3 variasi Al tetap sebesar 33,46. Sintesis dilakukan dengan variasi komposisi solid dan liquid sebesar 3,59. Amobilisasi kation logam berat Pb^{2+} dengan variasi konsentrasi sebesar 1.000 ppm, 2.000 ppm, 4.000 ppm, 8.000 ppm, dan 16.000 ppm dilakukan. Kuat tekan tertinggi sebesar 53,46 MPa didapat pada penambahan kation Pb 16.000 ppm. Pengujian efektifitas amobilisasi ion Pb^{2+} oleh geopolimer dilakukan menggunakan ICP-OES. Geopolimer S/L = 3,59, $SiO_2/Al_2O_3 = 6,45$ dan dengan kontaminan Pb = 16.000ppm memiliki kemampuan amobilisasi paling baik ditandai 0 ppm yang *leaching* pada asam asetat.

Kata Kunci : Geopolimer, Logam berat, Amobilisasi, *Leaching*

IMMOBILIZATION OF ION Pb^{2+} BY SYNTHESIZED GEOPOLYMER OF FLY ASH PT. IPMOMI PROBOLINGGO

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ABSTRACT

Synthesis geopolymer of fly ash from PT. IPMOMI Probolinggo by varying solid/liquid, SiO_2/Al_2O_3 mol ratio and immobilization of ion Pb^{2+} have been carried out. Synthesis carried out using varying total component of solid and liquid. The ratio of solid and liquid is 3.59 The highest of compressive strenght is 33.70 Mpa. Synthesis of geopolymer by varying SiO_2/Al_2O_3 by addition $Al(OH)_3$ and using 3.59 as ratio solid and liquid. Immobilization the ion of heavy metal Pb by varying concentrate which are 1.000 ppm, 2.000 ppm, 4.000 pp, 8.000 ppm, and 16.000 ppm have been carried out. The highest compressive strenght can be reached by geopolymer which using addition 16000 ppm. The efectivity of immobilization ion heavy metal will determined by ICP OES. Geopolymer using the ratio solid and liquid = 3.59; $SiO_2/Al_2O_3=6.45$ and by addition of ion heavy metal Pb being the high performance which leached by asetat acid = 0

Key words : Geopolymer, Heavy Metal, Immobilization, Leaching