PEMANFAATAN LIMBAH *FLY ASH* SEBAGAI BAHAN CAMPURAN PAVING BLOCK UNTUK MENGURANGI TINGKAT PENCEMARAN LINGKUNGAN DARI LOGAM BERAT Pb
(Studi Kasus PT. Pabrik Kertas Tjiwi Kimia,Tbk)

Niken Sri Hartiwi[1)], Mochtar Hadiwidodo[2)], Badrus Zaman[2)]

ABSTRACT

This research has been held to know the ability of Fly Ash waste from PT. Pabrik Kertas Tjiwi Kimia, Tbk, as a block pavement material using solidification/stabilization (S/S) methode because of chemical characteristic shows that Fly Ash contains lead which is hazardous waste. Beside containing lead, Fly Ash also contain oxide silica that can make chemical reaction with calsium hidroxide that come from hydration cement process and yielded a cementation, so in this case Fly Ash is used to replace a few part of cement in the mixture. Independent variable for this study is variation of Fly Ash persentation as a substitution material for a few cement which are 0%, 5%, 10%, 15%, 20%, and 25% from the total cement of the mixture. Block pavement was tested using pressurized test, water absorption test, and leaching test with submerged simulation which use lead as the parameter ion. Research showed that block pavement with 5% Fly Ash with composition of cement : Fly Ash : sand = 0,7125 : 0,0375 : 2,25 have the optimal compression value 86,8750 kg/cm^2, the optimal water absorption 3,036%, and a cheaper cost with lead leaching test after solidification process still fulfilling limit issued by the IAEA = 10^{-3} gram/cm^2.day. Research also showed that block pavement with 15-25% Fly Ash have a lead leaching test over the limit issued and that's not recommended to use. This research concluded that Fly Ash from PT. Pabrik Kertas Tjiwi Kimia, Tbk, can be used as a block pavement material with variation of Fly Ash 5-10% meanwhile the composition of cement : sand = 1 : 3.

Keywords : block pavement, Fly Ash, leaching test, pressurized test, solidification