Eco-Brick

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Although coal is one of the detrimental factors to the environment, it makes up about 40% of electricity generation around the world according to the IEA (the International Energy Agency). Consequently, It is indispensable. Coal leaves harmful residues after burning such as fly ash which leads to hazardous effects on the environment. For instance, fly ash can drain to underground water and make it highly toxic. The concern of this study is to utilize fly ash in brick production by two components; lime and gypsum. A mould was made with standard dimensions. Next, brick components were mixed and an alkaline solution (NAOH) was added. Then, brick was left for about 2 days to dry. After that, brick was dried under a temperature of 150°c. Each sample was tested for water absorption, strength, density, and cost. Data were analyzed by using compressive strength machine and a weighing balance. Compared to clay brick (strength= 3.5 MPa, water absorption of 23%, density=20 N/CU.M), Eco brick (strength= 7 MPa, water absorption of 18%, density13.6 N/CU.M). To dry 600,000 clay brick, about 40 ton of boiling oil needed whereas Eco-brick needs only 4 ton to produce the same number of bricks. This leads to a difference of about 6933.6 $ for boiling oil. On the other hand, 100 clay brick cost 27.20 $ yet 100 Eco brick cost 22.66 $. To sum up, Eco brick is light, durable, and less water absorbent. Eco brick is useful for the environment and economy.

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