

Thesis Title	The Influence of Oil Palm Fiber Ash and Rice Husk Ash to the Strength and Behaviour in Receiving Shear and Bending Moment of Thin Sheet Made of Glass Fiber Reinforced Concrete
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Candidate	Mr. Suwit Laoyoung
Thesis Advisor	Asst. Prof. Dr. Chuchai Sujivorakul
Program	Master of Science in Industrial Education
Field of Study	Civil Engineering
Department	Civil Technology Education
Faculty	Industrial Science of Education and Technology
B.E.	2550

### Abstract

This thesis was to study the influence of oil palm fiber ash and rice husk ash to the strength and behaviour in receiving shear and bending moment of thin sheet made of glass fiber reinforced concrete. The oil palm fiber and the rice husk ashes were baked by baker at the temperature of 105-110 °C. After that they had been ground by Los Angeles Machine for 12 hours, until particles was left on the standard sieve No. 325 at percentages of 2.52 and 3.72 respectively. Oil palm fiber and rice husk ashes were used to replace the Portland cement type I in the ratio of 0%, 10%, 20%, 30% and 40% by weight. The study consisted of physical and mechanical properties as follows: Equivalent bending strength, compressive strength and water absorption. They were tested at the age of 7, 28, 56 and 180 days. The Mortar compressive strength of cement was tested following ASTM C 190-95 standard, while the equivalent bending strength and water absorption were tested following BS EN 1170-5:1998. From results, it was found that the replacement of Portland cement by the oil palm fiber and rice husk ashes had an effect on strength and behaviour in receiving shear and bending moment of thin sheet made of glass fiber reinforced concrete. The rice husk ash had a better strength and behaviour than the oil palm fiber ash. This rice husk ash cement was even better than the control sampling which had no oil palm fiber and the rice husk ashes. Furthermore, it was found that the curing age in water had an effect to strength and behaviour in receiving shear and bending moment of all 3 types of thin sheet made of glass fiber reinforced concrete, the oil palm

fiber ash, the rice husk ash and the control sampling which had no oil palm fiber and rice husk ashes. It was observed that the values of LOP and MOR was greater as the curing age was longer. However, the value of MOR of the control sampling seemed to be constant after curing age of 28 days. For the suitable ratio for replacement of the Portland cement by oil palm fiber ash was found at 10% while it was 10%-30% for the rice husk ash. This research recommended that the ratio for the replacement of the Portland cement by the oil palm fiber and the rice husk ashes was 10% and 20% respectively.

Keywords: Equivalent Bending Strength / Glass Fiber Reinforced Concrete / Thin Sheet Material /  
Glass Fiber