

CHAPTER VI

CONCLUSION AND RECOMMENDATIONS FOR IMPROVEMENT

From the study, the following conclusions may be drawn :

- (1) Bamboo was suitable to be used as reinforcement for rice bins due to its cheaper cost when compared with steel. Besides, it was available in most parts of Thailand.
- (2) The construction method was not complicated. It did not need highly skilled labour or expensive equipments. The skeletal grid without any steel pipes or steel reinforcement was strong enough to support wet mortar during construction. Simple formwork was required in casting the bin.
- (3) The Pai Ruak variety of bamboo which was cheap and abundant in Thailand, was used in all tests. The average ultimate tensile stress, modulus of elasticity and bond stress of bamboo were 1937 kg/cm^2 , $2.64 \times 10^5 \text{ kg/cm}^2$ and 8.35 kg/cm^2 respectively.
- (4) The mortar used for all the test samples had a cement-sand ratio of 1 : 2 by weight with a water cement ratio of 0.45 the results of compression test on mortar cylinder specimens and cube specimens had average compressive stress and average modulus of elasticity 403 kg/cm^2 ,

$2.95 \times 10^5 \text{ kg/cm}^2$ and 325 kg/cm^2 , $3.25 \times 10^5 \text{ kg/cm}^2$ respectively.

In the first constructed rice bin being built, some mistakes were found in both the construction and its design. Some suggestions for improvement are as follows:

- (1) During casting the mortar the inner formwork should be eliminated in order to save cost. One should experiment the grid size of bamboo mesh in order to obtain the size which the mortar can stick to the mesh without the formwork.
- (2) Foundation should not be rigid pavement, otherwise the contact pressure was not uniform.
- (3) Flintkote seal should also be applied between the sealing mortar and the base of the rice bin otherwise the water leakage from the ground into the bin and vice versa were inevitable.
- (4) The biggest problem encountered to rice bin construction is the control of moisture in the bamboo itself and prevention of moisture to cause damage to rice stored. Further investigation should be carried out in this direction.