Nawarut Mungcharoen 2011: Homogenisation of Masonry for Historical Thai Monuments. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering. Thesis Advisor: Associate Professor Benjapon Wethyavivorn, Ph.D. 63 pages.

This research presented the analytical model of Masonry for Historical Thai Monuments. This masonry type is placed across. A process for analytical model is choose unit cell for simulate a behavior of moving units within that occurred. The analysis of the moving to created equilibrium equation used to calculate the elastic modulus of the masonry. The mortar is quick lime and modulus of elastic from the experiment testing result. Then analyzed with the elastic modulus of brick known values to determine the modulus of the masonry cause from the equation which was newly established. The result are compared with values obtained from the Thayaparan's equation (1982) and finite element model result to compare the ratio between the modulus of the brick and mortar to cause a different ratio.

The analysis concluded that the elastic modulus along the axis X, Y and Z from the equation that was created has value 37470.33 kilograms per square centimeter and the elastic modulus values derived from analytical model of the X, Y and Z are 39,062.5, 48,359.24 and 58,962.26 kilograms per square centimeter, respectively. Which are accordingly. And can show graphs of the relationship of modulus of elasticity with masonry cause the different ratio elastic modulus between the modulus of the brick and mortar from analytical model and finite element model result.

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