ABSTRACT

Energy-efficient buildings are the ability of a building to maximize energy efficiency in buildings through the design of the building and the materials used. The skin of the building or the outside of the building wall is a barrier between the outside environment of the building and the environment inside the building. Currently there are many researchers who make various kinds of materials to support energy efficiency itself. According to the Minister of Public Works and Public Housing Number 02/PRT/M/2015 and SNI 03 - 6389 - 2000 regarding green buildings, it is stated that the requirements for the technical planning stage of energy efficiency (energy consumption) for green buildings include the building envelope and the OTTV (Overall Thermal Transfer Value) value which permitted is a maximum of 35. OTTV is a measure of heat gain into the building through the building envelope. It also acts as an index to compare the thermal performance of buildings. In this study, the authors analyze the OTTV calculation using Energyplus and manual calculations. The brick material used was 6 samples of W/m2 biocomposite bricks from palm fiber in 4 types of buildings. Calculation of 6 samples of biocomposite bricks showed that the OTTV value was less than 35 W/m2. After a comparison between manual calculations and energyplus results in a very small error value, the OTTV value obtained is valid.

Keywords: *Biocomposite brick, OTTV, Energyplus, Eficiency Energy, Simulation*