ABSTRACT

Tropical climate in Indonesia caused by the location on the equator, which means close to the sun. Influenced from the location, Indonesia exposed to sunlight for 12 hours a day, so conditioning thermal in the building become major concern in order to achieve thermal comfort for building. The concept of a mass thermal is mechanism to absorb, storing, and release heat in the material of a building which meant to lower the maximum temperature and lower maximum cooling load.

One of the factors that will influences the room temperature is a wall, including all part elements of the wall it self. Objective from this research is doing simulation house building with permutation material, variety of thickness, and evaluate impact from material variety to mass thermal building.

The result of this research is a house building with brick material minimum temperature $25.52^{\circ}C$ and minimum cooling load 3892.80W. House building with concrete material heavyweight have maximum temperature $34.72^{\circ}C$ and maximum cooling load 4014.47W.

Keywords : Thermal Mass, Temperature, and cooling load