

ABSTRACT

The calculation of the air conditioner capacity in a room can be done with many methods, one of them is Rule of Thumb method because it is very simple. However, the calculation of the air conditioner capacity using the Rule of Thumb method not necessarily produce the right capacity for room and can cause oversizing and undersizing capacity. Oversizing or undersizing capacity affects the energy consumption in a building. This study was conducted to determine the use of six Rule of Thumb methods in determining the capacity of the air conditioner and identify the effect of using Rule of Thumb methods in energy consumption. The results of this study showed that forty rooms at Telkom University and residential that had oversizing capacity is 78%, while the rooms that had undersizing capacity and had the appropriate capacity is 12% and 10%. 34 of forty rooms at Telkom University and residential using the Rule of Thumb as sizing methods with the most appropriate Rule of Thumb is Rule of Thumb 4 is 31%. And only 23 rooms who have the appropriate capacity when using the Rule of Thumb with the most appropriate method is Rule of Thumb 1 that is equal to 44%. For the analysis of energy consumption when using two condition (autosized and actual), when oversizing factor getting bigger, IKE is also getting bigger too. Difference value of IKE when using outside air with without outside air for autosized condition majority is over then 10%, while for actual condition the whole rooms is above 10%. This is showed that the energy consumption when actual condition is bigger than autosized condition.

Keyword: Rule of Thumb, Sizing, Simulation, Energy Consumption.