

ABSTRACT

In a construction project, material is needed as a support to build a project which ordered by the customer. The availability of appropriate materials will be able to improve the performance of the company and doesn't give a high inventory costs. For PT Citramas Heavy Industries, storage of materials in the warehouse is only temporary. When there's excess of material in the production process, the material will be stored in warehouses, waiting for reuse. If the material has been stored in a warehouse excess of 6 months, the material can be categorized as a material expired. Material expired is a stock which no longer usable or saleable in the market. Storing the material expired may cause the total cost of inventory becomes higher.

The method used to minimize material expired is Material Requirement Planning that consist of four basic phases, there are explosion, netting, lot sizing, and offsetting. There are three techniques of lot size that consist of Economic Order Quantity, Part Period Balancing, and Wagner-Within Algorithm. With this method, this research will get data processing from the amount of material needs, ordering costs and carrying costs, and lead time for obtaining the optimal number of orders with minimal inventory costs.

Keywords: Material, Expired, Material Requirement Planning, Lot Sizing Technique