

ABSTRACT

PT.XYZ is an electorics and infrastructure industry company. PT.XYZ has a finished good warehouse that used as solar module product's storage. The warehouse is using floor stake/block stacking storage system that allow the storage to stack the pallet with only one level stack. The pallet allows to stack until 10 stacks of cartonized product which in one carton consist of 2 products.

The utility of warehouse is only 18%, it is caused by the storage space in warehouse is not used wisely yet, the warehouse has 6 m available height but initial height in used is only 1.19 m.

The problem was solved using dynamic programming algorithm to combine the selective rack and drive-in rack. Objective of the research is to determine the optimal number of lane with certain depth for each selective rack or drive-in rack using emptying interval of each product.

The result of research is capacity of warehouse increased with initial capacity 156 pallets position increased to 492 pallets position.

Keywords : *Optimization, Warehouse capacity, dynamic programming algorithm, Racking system, Rack combination, lane depth*