

A Study of Material Handling Equipment Selection Process in industry

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I. INTRODUCTION

This document provides an overview of different material handling equipment. It is intended to familiarize readers with the various material handling technologies and provide some general guidelines for selecting a particular technology for a particular application. Thus, its role is primarily informational or educational and not as a mechanism for detailed design of a specific system for a particular application.

II. GENERAL CONSIDERATIONS

When deciding what material handling equipment to use, it is important to take into account the general characteristics of the equipment types available in the market. Then, the decision maker should determine which equipment matches better to the required application. In this sense, Dunning [84] provided the following general guide for some big equipment categories that can be helpful in this decision. Static Storage Systems

Static storage systems include storage racks, block stacking systems, mezzanines and shelf and drawer storage. The common feature of static storage systems is that loads remain stationary or "static" in their storage locations until removed from the system. Static storage systems are more likely to be associated with low turnover inventories where manual storage and retrieval is a cost effective mode of operation. In this section, only selection guidelines for storage racks, mezzanines, shelf and drawer storage are discussed since block stacking does not require mechanical structures. Block stacking generally deals with lane storage of pallets or other unit loads stacked directly on top of each other in high volume, low turnover applications. Generally, block stacking provides a low cost, high density storage alternative when loads are stackable and not susceptible to crushing. In some cases, pallet stacking frames can be used for block stacking of unstable or fragile loads. Pallet stacking frames are discussed in more detail in a later section.