

Supply systems management:

11. Material handling in the supply chain

Metodický koncept k efektivní podpoře klíčových odborných kompetencí s využitím cizího jazyka ATCZ62 - CLIL jako výuková strategie na vysoké škole

Interreg 
EVROPSKÁ UNIE
Rakousko-Česká republika
Evropský fond pro regionální rozvoj



Europäische Union
Evropská unie
Europäischer Fonds für
regionale Entwicklung
Evropský fond pro
regionální rozvoj



UNIVERSITY
OF APPLIED SCIENCES
UPPER AUSTRIA

Overview and breakdown of handling equipment

Material handling is a necessary part of all processes across the whole value-creating chain, from:

- raw material extraction to processing,
- distribution,
- consolidation,
- circulation,
- consumption
- and reverse logistics.

Material handling is understood in modern terms as the complex issue of **transportation, loading** and **storage** processes consisting of a number of operations performing in handling systems and which need to be mutually aligned and controlled in order to achieve the desired effects in an optimal way.

Handling equipment - characteristics, parameters

Handling equipment is an essential part of handling systems and includes:

- **handling tools** (devices) consisting of supporting structures, drive units, gears and control units,
- as well as **building structures** allowing their operation (concrete or steel crane tracks, tracks, handling surfaces and aisles, etc.).

Grabbing device is used to grab and hold the primary handled logistics material. **Handling equipment** together with **organizational** means and means of **information** and **communication** create a **handling system**.

Criteria for handling equipment selection

The number of input factors influencing decision-making when selecting the transport, handling, storage and other systems is very extensive.

Prerequisites for selection of the optimal handling equipment or system are:

- the knowledge of the matrix of **connections**,
- **flow**,
- **frequency of operations**,
- paths **topology**,
- **restrictions**,
- **properties** of logistics objects,
- their **kinds, quantity** in total as well as individual kinds,
- **frequency of warehouse** operations,
- storage **period**, etc.

Dimensioning the handling equipment

The **material flow** may be **continuous** or **pulsating** for this equipment. The flow in mass units is determined by the product of the material weight per 1 meter of length for continuously working equipment with a continuous material flow q [kg.m⁻¹] and speed of movement v [m.s⁻¹].