

Contents

1	Introduction	1
1.1	Introduction	1
2	Thesis	7
3	Literature Overview	9
3.1	Achievements in the Assessment of Logistics Warehouse and Transport Systems	11
3.1.1	Overall LSM Structure	12
3.1.2	Capacity and Dimensions of Storage	13
3.1.3	Storage Capacity in LSM	13
3.1.4	Storage Dimensions	14
3.1.5	Layout of the Area/Storage Areas	15
4	Methods to Assess the Energy Consumption of LSM	31
4.1	Description of Model Evaluation of Energy Consumption LSM	40
4.2	Unloading, Admitting Freight Unit to the Warehouse	54
4.3	Vertical Displacement Energy	58
4.4	Horizontal Displacement Energy	65
4.5	Energy Intensity of IT Subsystem	70
4.5.1	Automatic Identification	72
4.5.2	Electronic Document Interchange in LSM	72
4.6	Energy Consumption Assessment of LSM	73
5	Experimental Research Results	93
6	Verification of the Model Evaluation of LSM	95
6.1	Evaluation of Dynamic Energy Intensity LSM	95
6.2	Evaluation of Energy Consumption of the IT System	99

6.3	The Use of Model Evaluation of Energy Consumption in LSM Management	103
6.4	Method to Assess the Energy Consumption of LSM with the Use of RESOLVER	117
Summary and Conclusions.		125
Utilitarian Results		127
Appendix 1: Database of the Expert System.		129
Appendix 2: Forklift Results		135
References.		145

Evaluation Method of Energy Consumption in Logistic
Warehouse Systems

Zajac, P.

2015, XVIII, 158 p. 45 illus., 26 illus. in color., Hardcover

ISBN: 978-3-319-22043-7