ISO 11228-1:2021-10 (E)

Ergonomics - Manual handling - Part 1: Lifting, lowering and carrying

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Termsanddefinitions 1

4 Risk reduction for manual lifting or carrying tasks 3
4.1 General 3
4.2 Risk assessment (step model) 3
4.2.1 Using the step model 3
4.2.2 Recommended limit for manual lifting, lowering and carrying 6
4.2.3 Cumulative mass of carrying 9
4.3 Risk reduction 10
4.4 Additional considerations 10

Annex A (informative) Ergonomics approach to the design of lifting and carrying tasks 11

Annex B (informative) Reference mass determination 17

Annex C (informative) Assessment method for recommended limits for mass, frequency and object position 19

Annex D (informative) Lifting index 27

Annex E (informative)SimplifiedmodelforRMLandLIcalculation 29

Annex F (informative) Multi-task manual lifting 31

Annex G (informative) Examples of manual handling of objects 42

Annex H (informative) Carrying 52

Annex I (informative) Exposure and risk: the basis for Table D.1 55

Bibliography 61