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Nagibne premostitvene ploġļadi - Varnostne zahteve

Dock levellers - Safety requirements

Ladebrücken - Sicherheitsanforderungen

Rampes ajustables - Prescriptions de sécurité

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Dock levellers - Safety requirements

Rampes ajustables - Prescriptions de sécurité

Ladebrücken - Sicherheitsanforderungen

This European Standard was approved by CEN on 14 February 2009.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Contents

Page

Foreword 4

Introduction 5

1 Scope 6

2 Normative references 7

3 Terms and definitions 8

4 List of significant hazards 10

5 Safety requirements and/or protective measures 12
5.1 Calculations and dimensions 12
5.2 General safety requirements and protective measures 16
5.3 Additional requirements for manually operated dock levellers 19
5.4 Additional requirements for power-operated dock levellers 20

6 Verification of the safety requirements and/or the protective measures 24

7 Information for use 25
7.1 General 25
7.2 Marking 25
7.3 Instructions for use 25
7.4 Instructions for maintenance and inspection 26

Annex A (informative) **Examples of suitable tests** 28
A.1 General 28
A.2 Stability test 28
A.3 Function test of the automatic safety device 30

Annex ZA (informative) **Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC** 31

Annex ZB (informative) **Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC** 32

Bibliography 33

Figures

Figure 1 — Types of dock levellers 6

Figure 2 — Main parts of a dock leveller 9

Figure 3 — Position of contact areas 14

Figure 4 — Max. permanent deformation of bridge deck sheets 15

Figure 5 — Safeguarding of crushing and shearing hazards 18

Figure A.1 — Stability test for load case 1 29

Figure A.2 — Stability test for load case 2 29

Figure A.3 — Max. deformation of bridge deck sheets 29

Tables

Table 1 — Significant hazards and safety requirements.....11

Table 2 — Applicable factors and loads at different load combinations.....13

Table 3 — Means of verification of the safety requirements and measures 24

Foreword

This document (EN 1398:2009) has been prepared by Technical Committee CEN/TC 98 “Lifting platforms”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2009, and conflicting national standards shall be withdrawn at the latest by September 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1398:1997.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

For relationship with EC Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This European Standard is a type C-standard as defined in EN ISO 12100.

The machinery concerned and the extent to which hazards, hazardous situations and hazardous events are covered are indicated in the scope of this European Standard. In addition, machinery shall comply as appropriate with EN ISO 12100 for hazards which are not covered by this European Standard.

Where provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standards, for machines that have been designed and built according to the provisions of this type C standard.

1 Scope

1.1 This European Standard specifies the safety requirements for design, construction, installation, maintenance and testing of dock levellers and for safety components on dock levellers.

With the exception of:

a) dock levellers for marine and aircraft applications;

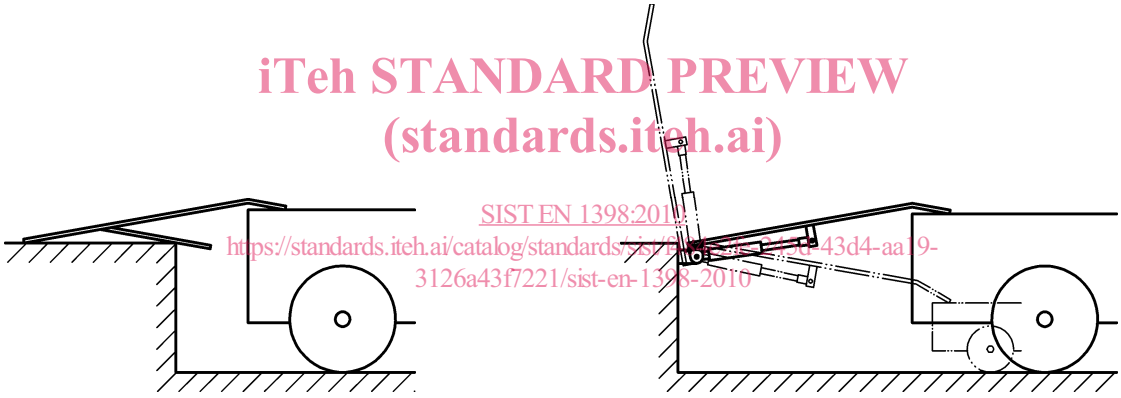
b) lifting tables;

c) vehicle mounted tail lifts.

NOTE 1 Requirements for lifting tables are laid down in EN 1570.

NOTE 2 Requirements for vehicle mounted tail lifts are laid down in EN 1756-1.

1.2 This European Standard is applicable to dock levellers which are used by persons and/or manual or power driven transport equipment (e. g. forklift trucks) as traffic paths between goods vehicles, both road vehicles and rail wagons, and parts of buildings such as loading docks. This standard does not deal with other bridging devices not shown in Figure 1.



a) Bridge plate (dock plate) manually operated, mobile

b) Manually or power operated dock leveller, fixed at the dock edge

c) Manually operated dock leveller, installed in a pit, hinged lip

d) Power operated dock leveller, installed in a pit, telescopic or hinged lip

Figure 1 — Types of dock levellers

NOTE Only dock levellers fitted with a drive system other than directly applied human effort are machines in the sense of the Machinery Directive.

1.3 This European Standard specifies requirements in order to protect persons and objects against accidents and health problems and damage during use and operation of dock levellers.

Persons to protect are:

a) operators and users;

b) maintaining and inspecting personnel;

c) persons near the dock leveller.

Objects to be protected are:

d) goods on dock levellers;

e) transport equipment on dock levellers.

1.4 The significant hazards of dock levellers are listed in Clause 4. These hazards have been identified by risk assessment according to EN ISO 12100-2 and require actions to avoid the hazard, or to reduce the risk, which are covered in Clause 5.

1.5 The safety requirements are based on the assumption that the dock levellers are regularly maintained by competent persons to the instructions of the manufacturer and that the operating person has been instructed in the use of the dock leveller.

1.6 This European Standard is not applicable to dock levellers which are manufactured before the date of its publication as EN.

1.7 This European Standard deals with all significant hazards, hazardous situations and events relevant to dock Levellers, when they are used as intended and under the conditions foreseen by the manufacturer (see Clause 4).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 349, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

EN 982, *Safety of machinery — Safety requirements for fluid power systems and their components — Hydraulics*

EN 983, *Safety of machinery — Safety requirements for fluid power systems and their components — Pneumatics*

EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)*

EN 60529:1991, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

EN 60947-4-1, *Low-voltage switchgear and controlgear — Part 4-1: Contactors and motor-starters; Electromechanical contactors and motor-starters (IEC 60947-4-1:2000)*

EN 60947-4-2, *Low-voltage switchgear and controlgear — Part 4-2: Contactors and motor-starters — AC semiconductor motor controllers and starters (IEC 60947-4-2:1999)*

EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)*

EN ISO 13849-1:2008, *Safety of machinery — Safety related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)*

EN ISO 13850, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)*

ISO 11228-1, *Ergonomics — Manual handling — Part 1: Lifting and carrying*

ISO 11228-2, *Ergonomics — Manual handling — Part 2: Pushing and pulling*

CENELEC

HD 60364-4-41, *Low-voltage electrical installations — Part 4-41: Protection for safety — Protection against electric shock (IEC 60364-4-41:2005, modified)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100-1:2003 and the following apply.

3.1
dock leveller
static or mobile device to bridge the space between a loading dock or similar loading areas and the loading surface of a vehicle which may be at different levels

NOTE 1 Dock levellers may be built as:

a) manually operated, mobile dock leveller, called bridge plate or dock board, see Figure 1a);

b) power operated dock leveller built into a loading dock or fixed at the edge of a dock, see Figure 1b) and d);

c) manually operated dock leveller built in to a loading dock or fixed to the edge of a dock, see Figure 1b) and c).

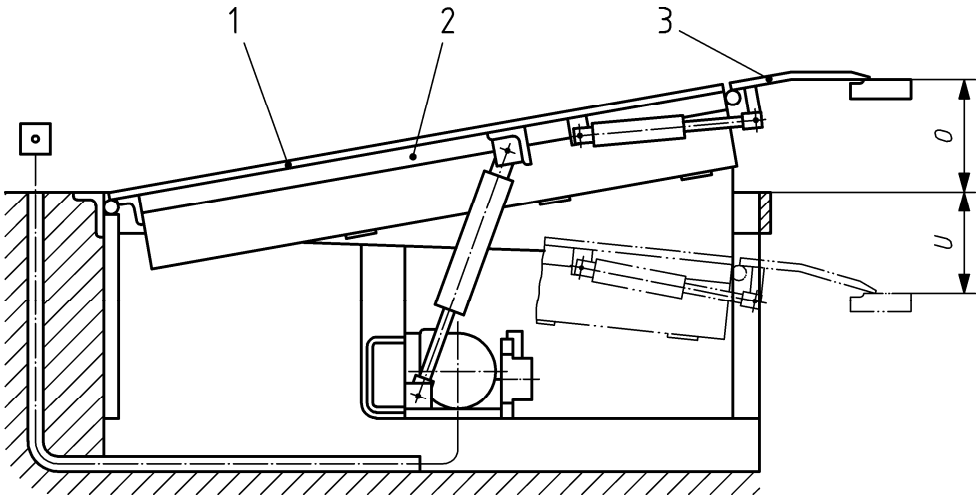
NOTE 2 Dock levellers are provided for loading and unloading operations and are not designed to lift or lower loads.

NOTE 3 The lifting or lowering mechanism is only provided to make alterations in the position of the unloaded dock leveller.

3.2
dock board/bridge plate
dock leveller, consisting of a manually operated plate, suspended or loose

3.3
latched dock leveller
dock leveller which is held in a certain position by a positively engaged locking device

3.4
bridge deck
part of the dock leveller in the form of a plate which is used as traffic path for persons and/or transport equipment, but excluding the lip (see Figure 2)



Key

1 Bridge deck
2 Bearer
3 Hinged lip

Figure 2 — Main parts of a dock leveller

3.5
bearer
supporting part of a dock leveller in the form of a beam, fixed at the under side of the bridge deck (see Figure 2)

3.6
support device
part of a dock leveller, e. g. in the form of a block, bar or bolt which supports the dock leveller in the horizontal stored position

3.7
hinged lip
part of a dock leveller hinged to the bridge deck and resting on the vehicle in the operational position (see Figure 2)

3.8
telescopic lip
part of a dock leveller which can be telescopically extended towards the vehicle and which rests on the vehicle in the operational position

3.9
loading
loading or unloading a vehicle using a dock leveller

3.10
free floating condition
mode in which the dock leveller supported on the vehicle may follow automatically the vertical movements of the vehicle during the loading process

3.11
stored position
position to which the dock leveller is put, or to which it returns, when loading has finished

3.12
automatic return
return cycle of the dock leveller to its stored position with or without operator initiation

3.13
installed
fixed to a dock edge or built in to the loading dock or a similar area

3.14
automatic safety device
device which automatically prevents an uncontrolled and dangerous lowering of the loaded dock leveller

3.15
emergency stop device
manually operated device intended to stop all movements of a dock leveller in the event of danger

3.16
rated load
weight of the greatest moving load (including goods, persons and transport equipment for goods) for which the dock leveller is designed

3.17
competent person
person who, in accordance with his training and experience, has sufficient knowledge in the field of dock levellers and is sufficiently familiar with relevant regulations to be able to assess the safe condition of dock levellers

3.18
operational position
position of the dock leveller in which it is provided for loading and unloading

4 List of significant hazards

The hazards that can influence the safety of persons during operation, maintenance or inspection have been identified by the risk assessment procedure and the corresponding requirements formulated. Table 1 shows the hazards which have been identified and where the corresponding requirements have been formulated in this European Standard.