



SLOVENSKI STANDARD

SIST EN 474-11:2000

01-april-2000

Earth-moving machinery - Safety - Part 11: Requirements for earth and landfill compactors

Earth-moving machinery - Safety - Part 11: Requirements for earth and landfill compactors

Erdbaumaschinen - Sicherheit - Teil 11: Anforderungen für Erd- und Müllverdichter

Engins de terrassement - Sécurité - Partie 11: Exigences applicables aux compacteurs de remblais et de déchets

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ICS:

53.100 Stroji za zemeljska dela Earth-moving machinery

SIST EN 474-11:2000

en

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EUROPEAN STANDARD

EN 474-11

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 1998

ICS 53.100

Descriptors: earth moving equipment, compacting, backfilling, wastes, safety of machines, accident prevention, safety requirements, specifications, operating stations, human factors engineering, safety devices, control devices, stability, engine noise, sound power, hazards

English version

Earth-moving machinery - Safety - Part 11: Requirements for earth and landfill compactors

Engins de terrassement - Sécurité - Partie 11: Exigences applicables aux compacteurs de remblais et de déchets

Erdbaumaschinen - Sicherheit - Teil 11: Anforderungen für Erd- und Müllverdichter

This European Standard was approved by CEN on 2 March 1998.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 151 "Construction equipment and building material machines - Safety", 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 1998, and conflicting national standards shall be withdrawn at the latest by September 1998.

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

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this standard.

The annex A is normative and contains "List of additional hazards", the annex B is informative and contains "Illustrations" and the annex C is informative and contains "Bibliography"

EN 474 "Earth-moving machinery - Safety" comprises the following parts:

- Part 1 General requirements
- Part 2 Requirements for tractor-dozers
- Part 3 Requirements for loaders
- Part 4 Requirements for backhoe-loaders
- Part 5 Requirements for hydraulic excavators
- Part 6 Requirements for dumpers
- Part 7 Requirements for scrapers
- Part 8 Requirements for graders
- Part 9 Requirements for pipelayers
- Part 10 Requirements for trenchers
- Part 11 Requirements for earth and landfill compactors
- Part 12 Requirements for rope excavators

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

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0 Introduction

This European Standard is a Type C-standard as stated in EN 292.

The machinery concerned and the extent to which hazards are covered are indicated in the scope of this standard.

1 Scope

This European Standard specifies additional requirements to and/or exceptions from EN 474-1:1994 "Earth-moving machinery - Safety - Part 1: General requirements".

This European Standard applies to earth and landfill compactors defined in ISO 6165:1997, and gives additional requirements for attachments and for derivated machinery.

This European Standard deals with all significant hazards pertinent to earth and landfill compactors when they are used as intended and under the conditions foreseen by the manufacturer (see annex A of this European Standard and annex C of EN 474-1:1994). This European Standard specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards.

Other compactors such as roller compactors, rammer compactors and vibratory plates which are dealt with in EN 500-1:1995 and EN 500-4:1995 are not covered in EN 474.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 292-1:1991	Safety of machinery - Basic concepts - General principles for design - Part 1: Basic terminology, methodology
EN 292-2:1991	Safety of machinery - Basic concepts - General principles for design - Part 2: Technical principles and specification
EN 474-1:1994	Earth-moving machinery - General Safety Requirements
EN 500-1:1995	Mobile road construction machinery - Safety - Part 1: Common requirements
EN 500-4:1995	Mobile road construction machinery - Safety - Part 4: Specific requirements for compaction machines
ENV 1070:1993	Safety of machinery - Terminology
EN 60068-2-27:1993	Basic environmental testing procedures - Part 2: Tests - Test Ea and guidance: Shock

EN 60204-1:1992	Safety of machinery - Electrical equipment - Part 1: General requirements
EN 60529:1991	Degrees of protection provided by enclosures (IP Code)
ISO 2867:1994	Earth-moving machinery - Access systems
ISO 5006-1:1991	Earth-moving machinery - Operator's field of view - Part 1: Test method
ISO 5353:1995	Earth-moving machinery, and tractors and machinery for agriculture and forestry - Seat index point
ISO 5998:1986	Earth-moving machinery - Rated operating load for crawler and wheel loaders
ISO 6165:1997	Earth-moving machinery - Basic types - Vocabulary
ISO/DIS 6393:1995	Acoustics - Measurement of exterior noise emitted by earth-moving machinery - Stationary test conditions
ISO 6405-1:1991	Earth-moving machinery - Symbols for operator controls and other displays - Part 1: Common symbols
ISO 6405-2:1993	Earth-moving machinery - Symbols for operator controls and other displays - Part 2: Specific symbols for machines, equipment and accessories
ISO 6682:1986	Earth-moving machinery - Zones of comfort and reach for controls
ISO 7096:1994	Earth-moving machinery - Operator seat - Transmitted vibration
ISO 7546:1983	Earth-moving machinery - Loader and front loading excavator buckets - Volumetric ratings
ISO 8313:1989	Earth-moving machinery - Loaders - Methods of measuring tool forces and tipping loads
ISO 9244:1995	Earth-moving machinery - General principles for safety signs and hazard pictorials
ISO/DIS 9249:1995	Earth-moving machinery - Engine test code - Net power
ISO 10263-2:1994	Earth-moving machinery - Operator enclosure environment - Part 2: Air filter test
ISO 10263-4:1994	Earth-moving machinery - Operator enclosure environment - Part 4: Operator enclosure ventilation, heating and/or air-conditioning test method
ISO 10533:1993	Earth-moving machinery - Lift-arm support devices - Performance requirements
ISO 10968:1995	Earth-moving machinery - Operator's controls

ISO 12509:1995	Earth-moving machinery - Lighting, signalling and marking lights, and reflex-reflector devices
ISO/DIS 13766:1996	Earth-moving machinery - Electro-magnetic compatibility

3 Definitions

For the purposes of this European Standard the definitions stated in ENV 1070:1993 apply. Additional definitions specifically needed for this European Standard are added below.

3.1 Common definitions

Terminology for earth and landfill compactors are specified below and illustrated in annex B.

Definitions used in EN and ISO standards referred to in this European Standard are also valid for this European Standard.

3.2 Additional definitions

3.2.1 Earth and landfill compactor: self-propelled wheeled compaction machine, having front-mounted equipment with a dozing or loading attachment, and having wheels provided with means to crush and compact waste material. It also moves, grades and loads soil, landfill or sanitary (refuse) materials through motion of the machine.

3.2.2 Dozing equipment: equipment for moving or grading material through a motion of the machine.

3.2.3 Loading equipment: loading equipment for loading, transporting, distributing, filling and grading material.

3.2.4 Drums: steel wheels affixed to the axles with choppers, padfoot, sheepfoot and grid drums etc. which are used to cut, demolish or compact the material.

4 Safety requirements

4.1 Access

EN 474-1:1994, 4.1 applies with the following exceptions:

For landfill compactor the height of the first step shall be < 800 mm.

4.2 Operator's station

4.2.1 Heating and ventilation system

If a heating and ventilation system is fitted it shall:

- either comply with ISO 10263-4:1994
- or have the capacity of increasing the temperature of the air inside the cab and maintain a temperature of + 18° C at the expected ambient temperature. The minimum capacity of the heating system shall have a Δ of 25° C measured at - 10° C ambient temperature.

Measurement of the system capacity shall be made at three points. The three points shall be located in a vertical plane through the SIP and parallel to the longitudinal axis of the machine as follows (see figure 1):

- at filament position centre-point as defined in ISO 5006-1:1991;
- at SIP as defined in ISO 5353:1995;
- 100 mm above floor plate and 600 mm in front of SIP.

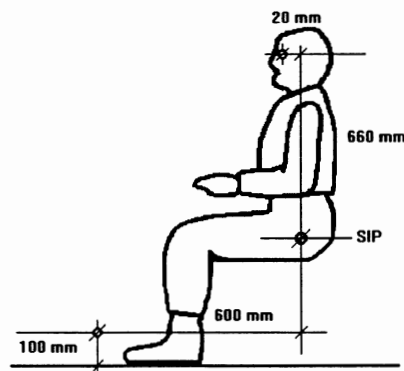


Figure 1: Location of measuring points

Alternatively the heating capacity can be determined by calculation.

The ventilation system shall be capable of providing the cab with filtered fresh air at the minimum of 43 m³/h. The filter shall be tested according to ISO 10263-2:1994.

NOTE: The filter element selection depends on the intended operating environment conditions.

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4.2.2 Filter

A provision shall be made for the installation of a deodorizing filter.

4.2.3 Air conditioning

Earth and landfill compactors shall be so designed and built that an air conditioning unit can be fitted.