

INTERNATIONAL STANDARD

ISO 15645

First edition
2002-05-01

Road construction and maintenance equipment — Road milling machinery — Terminology and commercial specifications

*Équipement pour la construction et l'entretien des routes — Fraiseuses —
Terminologie et spécifications commerciales*

STANDARDSISO.COM : Click to view the full PDF of ISO 15645:2002



Reference number
ISO 15645:2002(E)

© ISO 2002

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

STANDARDSISO.COM : Click to view the full PDF of ISO 15645:2002

© ISO 2002

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

Contents

	Page
1 Scope	1
2 Terms and definitions	1
3 Description of milling machine components	2
3.1 General	2
3.2 Design of milling machine types	2
4 Commercial specifications	3
4.1 Characteristics of the traction and transport vehicle	3
4.2 Cutting and milling system characteristics	4
4.3 Drum sprinkler device	5
4.4 System to remove or cordon aggregate materials	5

STANDARDSISO.COM : Click to view the full PDF of ISO 15645:2002

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 15645 was prepared by Technical Committee ISO/TC 195, *Building construction machinery and equipment*.

STANDARDSISO.COM : Click to view the full PDF of ISO 15645:2002

Introduction

This International Standard deals with road milling machinery used in the retread process, which is carried out in road maintenance.

It provides definitions of the milling machine itself and its components, and technical characteristics.

It includes figures showing milling machines with a loading device and the positioning of work tools in a rotor.

STANDARDSISO.COM : Click to view the full PDF of ISO 15645:2002

Road construction and maintenance equipment — Road milling machinery — Terminology and commercial specifications

1 Scope

This International Standard establishes the terminology, functions, types and characteristics of road milling machinery.

It is applicable to the planing of pavements made of concrete, asphalt and similar materials with a view to removing them.

2 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply.

2.1

road milling machinery

mobile road construction machine used to mill materials from paved surfaces

2.2

road milling carrier

machine carrying all the systems constituting the road milling machine, distributing the necessary power to operate the different devices and to ensure movement during work and transfer

2.3

cutting and milling system

power-driven cylindrical bodies on which the milling tools are fitted

NOTE The cylindrical bodies rotate during the milling operation. The tools are mostly cooled by a water sprinkler device.

2.4

levelling system

automatic or manual system used to obtain and maintain the geometry of the bottom of the cut

NOTE The geometry of the bottom refers to both the longitudinal and cross-sections. The geometrical reference is taken from the existing section or from a specific layout.

2.5

system to remove or make a cordon of aggregate material

transport system for removal and storage of loose material

NOTE The material is removed by either a front-, rear- or side-loading system, or is deposited as a cordon at the side or the back of the road milling machine.

2.6

operating mass

mass of the base machine with all standard equipment, with or without cab, with or without ROPS, etc., with operator (75 kg) and full fuel tank, and all fluid systems at their rated capacities and, when applicable, with sprinkler water tank half full

3 Description of milling machine components

3.1 General

The machine is usually equipped with all the following devices:

- traction and transport system;
- cutting and milling system;
- levelling system;
- system to remove or cordon aggregate material.

3.2 Design of milling machine types

3.2.1 Traction and transport system

The description shall include the type of ground drive system (wheels, tracks, etc.), the total number and position of wheels or tracks, the number and position of drive wheels or tracks, and the number and position of guiding wheels or tracks. The position of the rotor in relation to the wheels or tracks and the loading device is shown in Figures 1 and 2.

3.2.2 Cutting and milling system

The cutting and milling system comprises a rotor chamber and a drum sprinkler device (see Figure 3).

3.2.3 Rotor drive methods

These may be

- hydraulic,
- hydromechanical, or
- mechanical (right and/or left),

or may depend on the direction of rotation of the rotor in relation to the direction of movement.

3.2.4 Layout of tools

The layout of tools on the rotor is determined by the distance between two successive steps in the cross-section (Figure 2).

3.2.5 System for levelling and control of working depth

The following characteristics shall be given:

- level reference (ground, machine element, cord or others);
- type of sensors (laser, ultrasound, electronic or hydraulic);
- adjustment;
- manual;
- automatic.

3.2.6 System to remove or cordon aggregate materials

The description shall include the types of conveyors, their drives and the methods of positioning.

4 Commercial specifications

4.1 Characteristics of the traction and transport vehicle

4.1.1 Dimensional characteristics

The dimensions shown in Figure 1 shall be specified:

- overall length with removal system, l_1 (mm);
- overall length without removal system, l_2 (mm);
- overall width in working order (without removal system), b_1 (mm);
- overall height (without removal system), h_1 (mm);
- maximum front overhang (with removal system), l_6 (mm);
- rear overhang, l_3 (mm);
- inside turning radius, r_1 (mm);
- outside turning radius, r_2 (mm);
- distance between the rotor axis and the front wheels/tracks axis, l_5 (mm);
- distance between the rotor axis and the rear wheels/tracks axis, l_4 (mm);
- inside slewing radius of the rotor, r_3 (mm);
- outside slewing radius of the rotor, r_4 (mm);
- maximum loading height, h_2 (mm);
- slewing angle of the removal system, α (degrees);
- side-shift of the rotor to the chassis (for machines with side-shifted rotor) (mm).

4.1.2 Shipping dimensions (overall)

The following dimensions shall be specified:

- length (mm);
- width (mm);
- height (mm).

4.1.3 Mass characteristics

The following characteristics shall be given:

- load shipping mass (kg);
- operating mass (kg);
- other masses (all in kg)
 - on front axle,
 - on rear axle,
 - cab,
 - protective structure,
 - pumping and liquid adding device.

4.1.4 Engine characteristics

The following characteristics shall be given:

- engine brand and type;
- power (kW);
- revolutions (r/min);
- cooling type.

4.1.5 Transmission characteristics

The following characteristics shall be given:

- number of axles;
- number of driving axles;
- mechanical transmission;
- maximum working speed (km/h);
- maximum transfer speed (km/h).

4.1.6 Position of steering

This shall be specified as

- front, or
- rear.

4.1.7 Characteristics and type of tyres or tracks

This shall be specified as

- front, or
- rear.

4.1.8 Tank characteristics

The following characteristics shall be given:

- fuel tank capacity (dm³);
- hydraulic oil tank capacity (dm³);
- water tank capacity (dm³).

4.2 Cutting and milling system characteristics

The following characteristics shall be given (see Figures 2 and 3):

- overall length (mm);
- working width of rotor, l_7 (mm);
- diameter of rotor with tools, d_1 (mm);
- number of tools;
- type of tools (with bits of sintered carbide):

- tool in form of wand (for surfaces of cement and concrete),
- tool in form of mushroom (for surfaces of asphalt and concrete);
- tool attachment method;
- direction of rotor rotation;
- revolutions of rotor (min^{-1});
- peripheral speeds at the end of tools (m/min);
- depth of cut in one pass, h_3 (mm);
- permissible transverse tilt angle of the chassis (in relation to the horizontal) (degrees);
- maximum rotor tilt in vertical plane (degrees);
- rotor drive method
 - hydraulic,
 - hydromechanical,
 - mechanical;
- layout of tools
 - step (mm);
- system of control of working depth
 - level reference (ground, machine element, cord or others),
 - type of sensors (laser, ultrasound, infrared or others),
 - adjustment of working depth (manual, automatic).

4.3 Drum sprinkler device

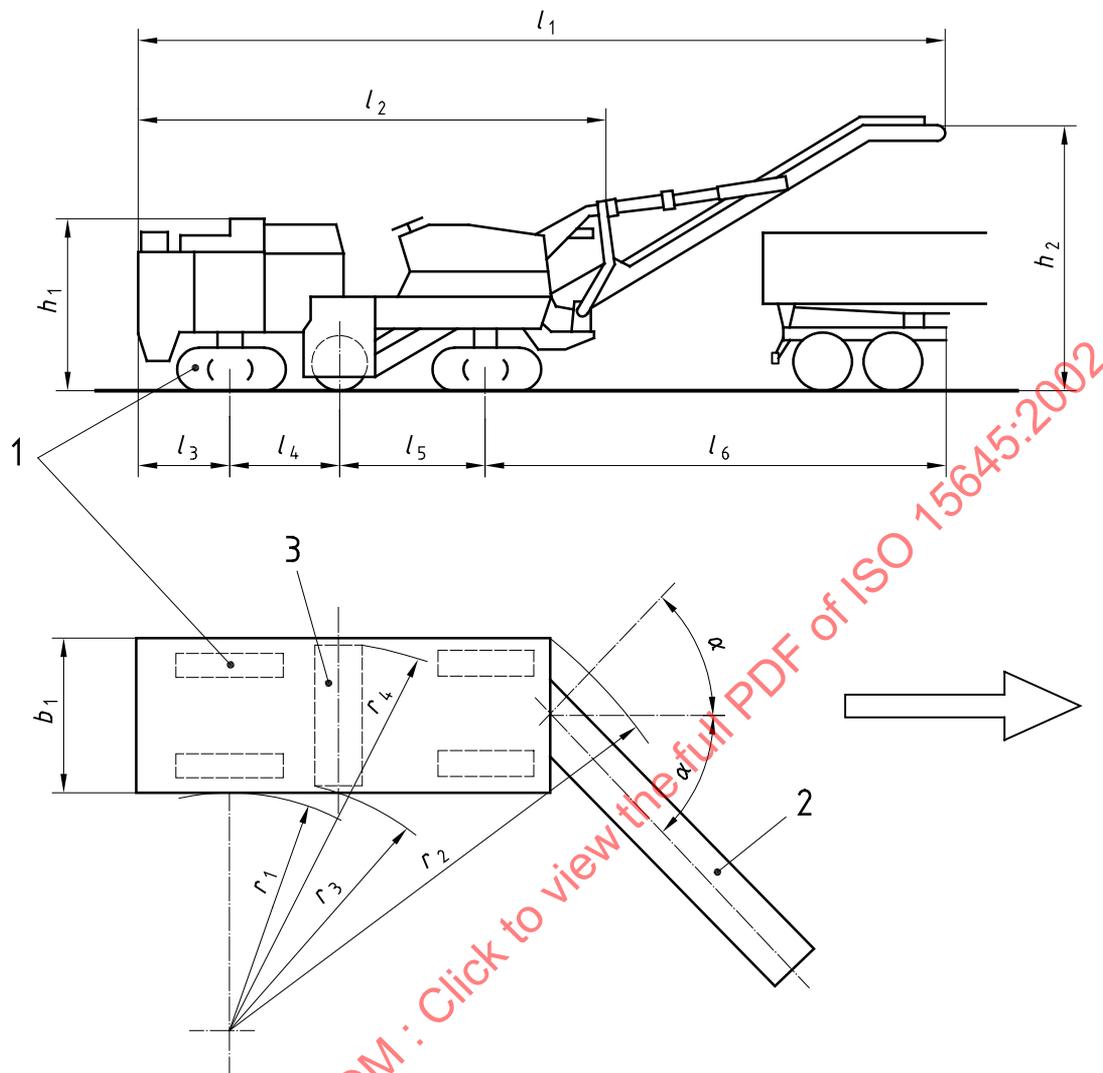
The following characteristics shall be given:

- water pump delivery (m^3/min);
- pressure in water supply system (MPa);
- number of spray nozzles.

4.4 System to remove or cordon aggregate materials

The following characteristics shall be given:

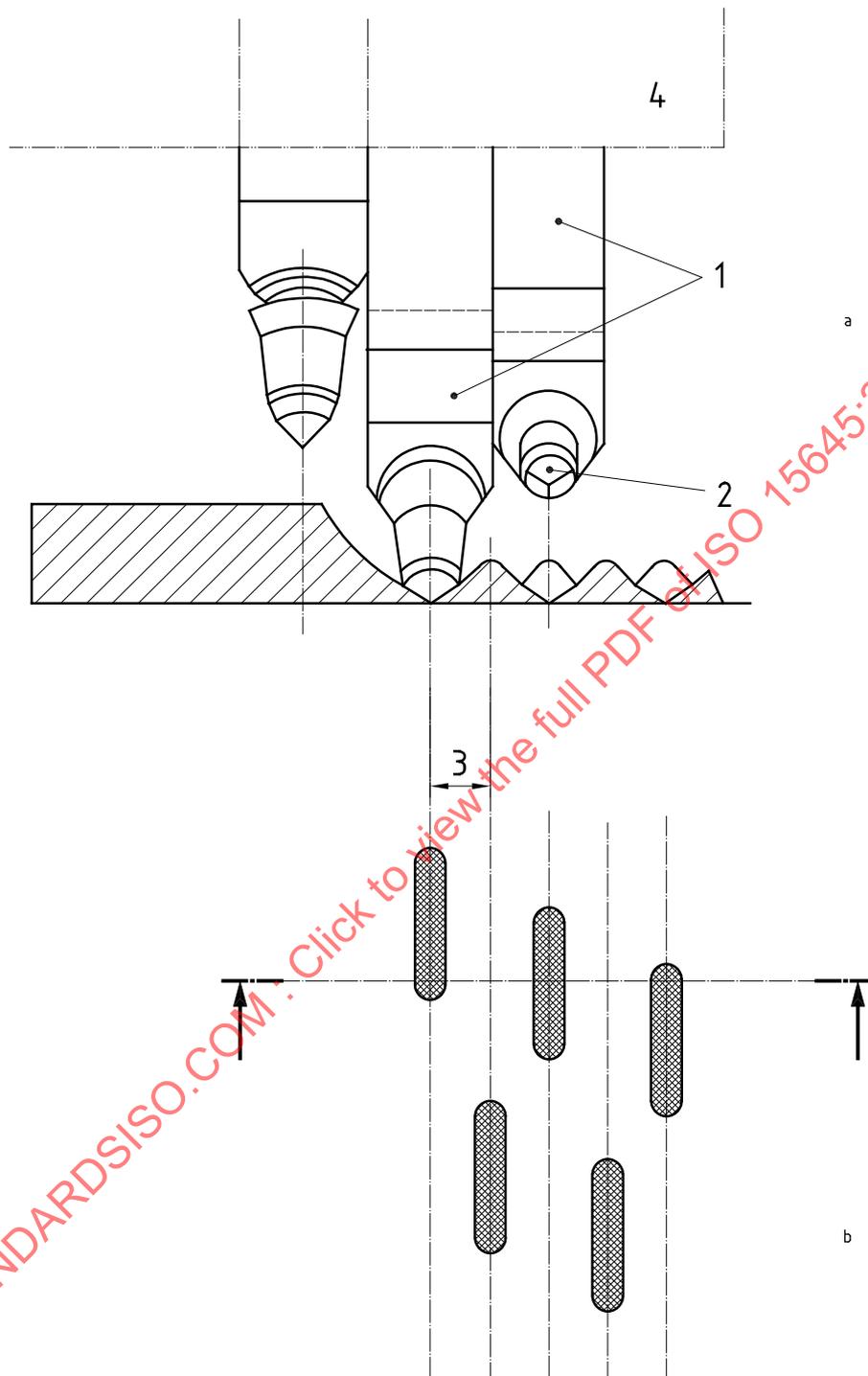
- type of conveyor (belt, drag slat or other);
- output of conveyor (kg/h);
- width of conveyor (mm);
- conveyor drive method (hydraulic, hydromechanical, mechanical);
- system of conveyor positioning (hydraulic, hydromechanical, mechanical)
- overall length with removal system folded (mm).



Key

- | | | | |
|-------|--|----------|--|
| 1 | Tracks | | |
| 2 | Removal system | | |
| 3 | Rotor | | |
| l_1 | Overall length (with removal system) | h_2 | Maximum loading height |
| l_2 | Overall length (without removal system) | b_1 | Overall width (without removal system) |
| l_3 | Rear overhang | r_1 | Inside turning radius |
| l_4 | Distance between the rotor axis and the rear wheels/tracks axis | r_2 | Outside turning radius |
| l_5 | Distance between the rotor axis and the front wheels/tracks axis | r_3 | Inside slewing radius of the rotor |
| l_6 | Maximum front overhang (with removal system) | r_4 | Outside slewing radius of the rotor |
| h_1 | Overall height (without removal system) | α | Slewing angle of the removal system |

Figure 1 — Dimensional characteristics of a milling machine with removal system



a Pavement cross-section and tool attachment

b Top view of tool tracks

Key

- 1 Tool holder
- 2 Cutting tools
- 3 Step
- 4 Rotor

Figure 2 — Positioning of the working tools in a rotor