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Building construction machinery and equipment — Machinery for concrete surface floating and finishing —

Part 1: Terms and commercial specifications

Machines et matériels pour la construction des bâtiments — Talocheuses-lisseuses de mortier —

Partie 1: Terminologie et spécifications commerciales

Reference number
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Contents

Page

Foreword

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The committee responsible for this document is ISO ISO/TC 195, *Building construction machinery and equipment*, Subcommittee SC 1, *Machinery and equipment for concrete work*.

ISO 13105 consists of the following parts, under the general title *Building construction machinery and equipment — Machinery for concrete surface floating and finishing*:

— *Part 1: Terms and commercial specifications*

— *Part 2: Safety requirements and verification*

Introduction

ISO 13105 deals with machinery designed for smoothing and finishing concrete on construction sites. These machines are commonly referred to as “power trowels.”

This part of ISO 13105 provides terminology and definitions for the machine and for specific components of the machine.

It establishes requirements and parameters for stating values typically found in commercial literature in an effort to aid customers and users in product selection and comparison.

Building construction machinery and equipment — Machinery for concrete surface floating and finishing —

Part 1: Terms and commercial specifications

1 Scope

This part of ISO 13105 defines terms and commercial specifications for machines used for concrete surface floating and finishing (also known as power trowels). This includes pedestrian-controlled equipment and ride-on equipment.

It does not address strike-off type machines, commonly known as screeds.

2 Terms and definitions

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

2.1
power trowel
motor-powered machine with rotating tools for floating and finishing freshly placed concrete

2.2
rotor
rotating assembly including the blades and means to pitch blades

2.3
blade
working tool which contacts with the concrete surface

2.4
handle
pole
device on pedestrian-controlled power trowel to enable the operator to hold and manoeuvre the machine

2.5
retardant
liquid finishing aid

2.6
pitch
included angle between the surface of the blade and the concrete surface

Note 1 to entry: This could be fixed or adjustable.

3 Commercial specifications

3.1 General

The following general data shall be presented.

a) model and type

b) manufacturer

c) serial number

d) prime mover (combustion engine or electric, pneumatic or hydraulic motor)

1) if combustion engine:

— type (spark ignition or compression ignition)

— model

— manufacturer

— operating speed — min^{-1}

— engine net power — kW (or as specified by engine manufacturer)

— fuel type

— fuel tank capacity — litres

2) if electric motor:

— model and type

— rated power — kW

— rated current — A

— voltage and frequency — V – Hz

— number of speeds

— speed range — min^{-1}

3) if pneumatic or hydraulic motor:

— model and type

— rated power (pneumatic only) — kW

— displacement (hydraulic only) — cc

— rated pressure — kpa

— rated flow — lpm

e) number of blades per machine

f) pitch — range in degrees

g) rotor diameter (swept circle of rotor) — mm

h) rotor speed (min to max) — min^{-1}

i) operating mass — kg

j) shipping mass — kg

3.2 Pedestrian-controlled power trowel

For pedestrian-controlled machines, the following shall also be presented (see Figure A.1).

a) handle type (i.e. short, long, foldable)

b)	handle height (if fixed height)	mm
c)	handle height (if adjustable)	range min/max in mm
d)	guard ring outer diameter	mm
e)	overall length in operating mode	mm

3.3 Ride-on power trowel

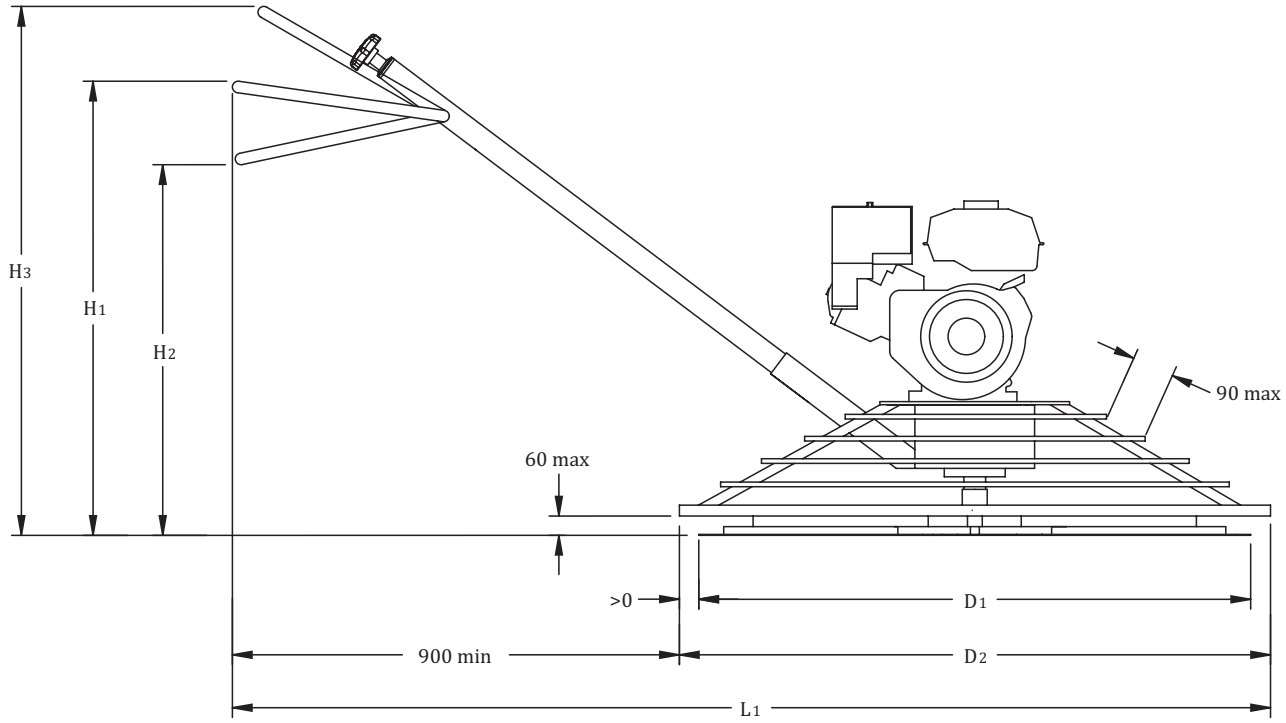
For ride-on machines, the following shall be also presented.

a)	swept path width	mm
b)	unswept distance between rotors	mm
c)	retardant tank (if any) capacity	litres
d)	battery capacity (if equipped)	Ah
e)	type of transmission	(i.e. mechanical, hydraulic)
f)	type of steering system	(i.e. mechanical, power-assisted)
g)	overall dimensions (see Figure A.2):	
	— length (left to right)	mm
	— width (front to back)	mm
	— height	mm
h)	operator seat height (from work surface)	mm

Annex A
(informative)

Power trowel dimensions in operating mode

Dimensions in mm

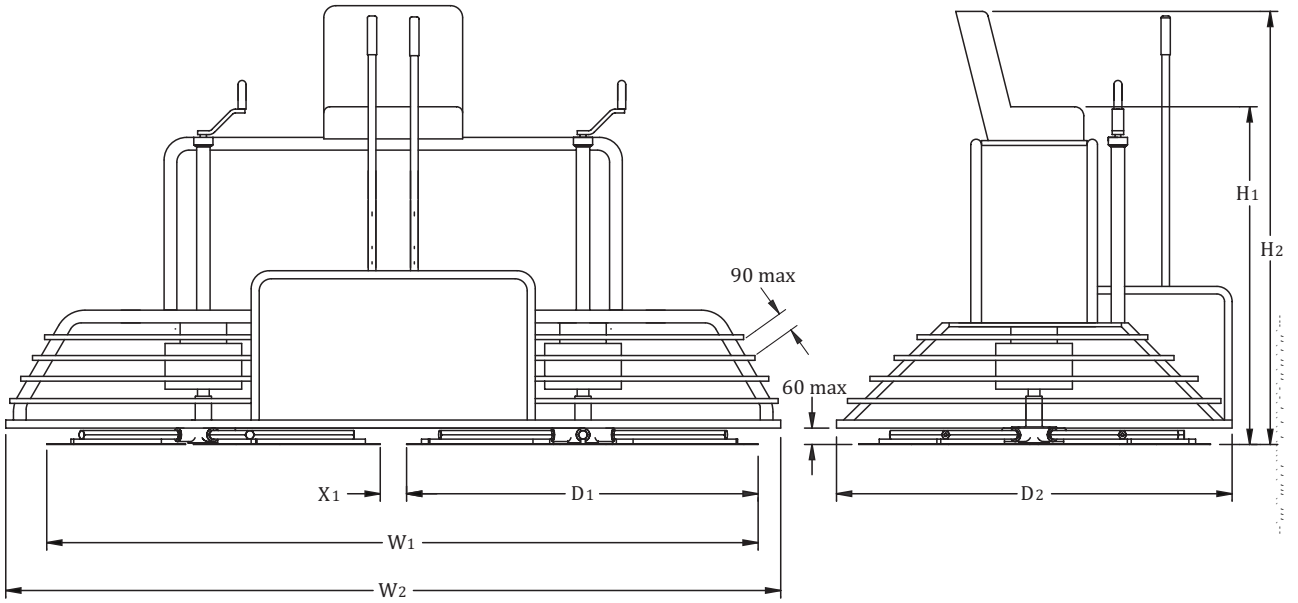


Key

D_1 rotor diameter (swept circle of rotor)
D_2 guard ring outer diameter
H_1 height of handle (if fixed)
H_2 minimum height of handle (if adjustable)
H_3 maximum height of handle (if adjustable)
L_1 overall length

Figure A.1 — Pedestrian-controlled power trowel shown with spark ignition engine

Dimensions in mm



Key

D_1 rotor diameter (swept circle of rotor)
D_2 overall width (front to back)
H_1 operator seat height (from work surface)
H_2 overall height
L_1 overall length
W_1 swept path width
W_2 overall width (left to right)
X_1 unswept distance between rotors

Figure A.2 — Ride-on type power trowel

Bibliography

[1] EN 12649:2008 + A1:2011, *Concrete compaction and smoothing machines — Safety*

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