

Nederlandse norm

NEN-ISO 789-13

(en)

Agricultural tractors - Test procedures - Part 13:
Vocabulary and specimen test report (ISO 789-
13:2018, IDT)

ICS 65.060.10
maart 2018

Als Nederlandse norm is aanvaard:

- ISO 789-13:2018, IDT

Normcommissie 341043 'Landbouwwerktuigen'



THIS PUBLICATION IS COPYRIGHT/PROTECTED

DEZE PUBLICATIE IS AUTEURSRECHTELIJK BESCHERMD

Apart from exceptions provided by the law, nothing from this publication may be duplicated and/or published by means of photocopy, microfilm, storage in computer files or otherwise, which also applies to full or partial processing, without the written consent of the Royal Netherlands Standardization Institute.

The Royal Netherlands Standardization Institute shall, with the exclusion of any other beneficiary, collect payments owed by third parties for duplication and/or act in and out of law, where this authority is not transferred or falls by right to the Reproduction Rights Foundation.

Auteursrecht voorbehouden. Behoudens uitzondering door de wet gesteld mag zonder schriftelijke toestemming van het Koninklijk Nederlands Normalisatie-instituut niets uit deze uitgave worden verveelvoudigd en/of openbaar gemaakt door middel van fotokopie, microfilm, opslag in computerbestanden of anderszins, hetgeen ook van toepassing is op gehele of gedeeltelijke bewerking.

Het Koninklijk Nederlands Normalisatie-instituut is met uitsluiting van ieder ander gerechtigd de door derden verschuldigde vergoedingen voor verveelvoudiging te innen en/of daartoe in en buiten rechte op te treden, voor zover deze bevoegdheid niet is overgedragen c.q. rechtens toekomt aan de Stichting Reprorecht.

Although the utmost care has been taken with this publication, errors and omissions cannot be entirely excluded. The Royal Netherlands Standardization Institute and/or the members of the committees therefore accept no liability, not even for direct or indirect damage, occurring due to or in relation with the application of publications issued by the Royal Netherlands Standardization Institute.

Hoewel bij deze uitgave de uiterste zorg is nagestreefd, kunnen fouten en onvolledigheden niet geheel worden uitgesloten. Het Koninklijk Nederlands Normalisatie-instituut en/of de leden van de commissies aanvaarden derhalve geen enkele aansprakelijkheid, ook niet voor directe of indirecte schade, ontstaan door of verband houdend met toepassing van door het Koninklijk Nederlands Normalisatie-instituut gepubliceerde uitgaven.



©2018 Koninklijk Nederlands Normalisatie-instituut
Postbus 5059, 2600 GB Delft
Telefoon (015) 2 690 390, Fax (015) 2 690 190

Preview

**Agricultural tractors — Test
procedures —**
Part 13:
Vocabulary and specimen test report

*Tracteurs agricoles — Méthodes d'essai —
Partie 13: Vocabulaire et modèle de rapport d'essai*



Copyright
Preview



COPYRIGHT PROTECTED DOCUMENT

© ISO 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword.....	iv
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	1
Annex A (informative) Specimen ISO 789 test report.....	9
Bibliography.....	43

Forbiede
Preview

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 2, *Common tests*.

A list of all the parts in the ISO 789 series can be found on the ISO website.

Agricultural tractors — Test procedures —

Part 13: Vocabulary and specimen test report

1 Scope

This document gives terms and definitions for use in the other parts of ISO 789. [Annex A](#) provides a specimen test report for all parts of ISO 789.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

agricultural tractor

self-propelled agricultural vehicle having at least two axles and wheels, or endless tracks, particularly designed to pull agricultural trailers and pull, push, carry and operate implements used for agricultural work (including forestry work), which may be provided with a detachable loading platform

Note 1 to entry: The agricultural vehicle has a maximum design speed of not less than 6 km/h and may be equipped with one or more seats.

[SOURCE: ISO 12934:2013, 3.1]

3.2

wheelbase

distance at ground level between two vertical planes passing through the centres of the front wheels and the rear wheels with tractor and wheels in the same straight ahead position

Note 1 to entry: See [Figure 1](#).

3.3

track

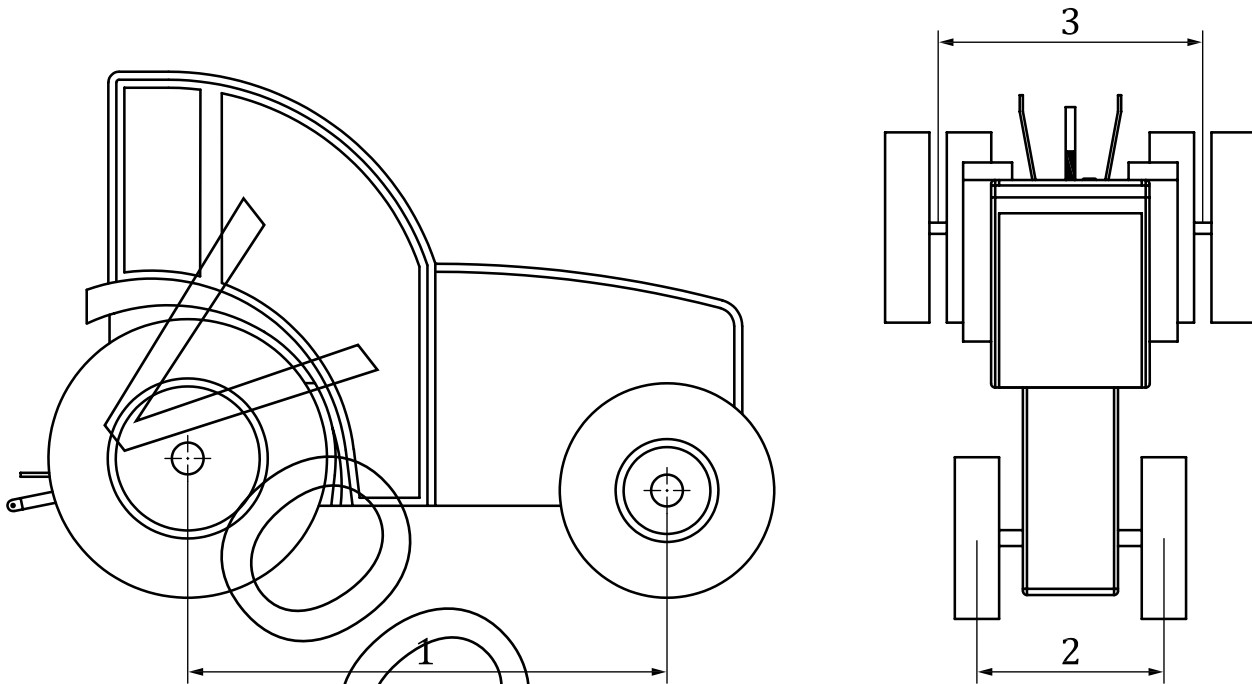
tread

distance at ground level between two vertical planes passing through the centreline of ground contact of the tyres parallel to the median longitudinal plane of the tractor with the wheels in the straight ahead position

Note 1 to entry: In the case of dual wheels, it is the distance at ground level between two planes passing through the centreline of the dual wheels. In the case of track-laying tractors, it is the distance between the two vertical planes passing through the centreline of ground contact of the tracks.

Note 2 to entry: See [Figure 1](#).

ISO 789-13:2018(E)

**Key**

- 1 wheelbase
- 2 track
- 3 track (dual wheels)

Figure 1 Track and wheelbase of wheeled tractor

3.4 tractor mass

mass of a tractor as submitted for test

3.5 ballasted mass

mass of the tractor with ballasting devices and without the driver mass while the tractor is in running order with tanks, circuits and radiator full, and any track equipment or additional front wheel drive components required for a normal use included; and in the case of tractors with pneumatic tyres, sometimes with liquid ballast in the tyres

[SOURCE: OECD Code 2: February 2017, 2.12]

3.6 unballasted mass

mass of the tractor in working order with tanks and radiators full, roll-over protective structure with cladding, and any track equipment or additional front-wheel drive components required for normal use

Note 1 to entry: Not included are the operator, optional ballast weights, additional wheel equipment, special equipment and loads.

[SOURCE: ISO 5700:2013, 3.2]

3.7 rated engine speed

engine speed specified by the tractor manufacturer for continuous operation at full load

3.8 maximum engine speed

engine speed at which the throttle control is at the maximum setting

3.9**engine power**

power measured at the flywheel or the crankshaft

[SOURCE: OECD Code 2: February 2017, 2.2]

3.10**power take-off power**

power measured at any shaft (with the tractor stationary) designed by the tractor manufacturer to be used as a power take-off

3.11**axle power**

sum of the powers measured at all powered axles

3.12**power at the drawbar**

power available at the drawbar which can be sustained for at least 20 s, or the time needed to cover a distance of at least 20 m, whichever is longer

3.13**maximum drawbar pull**

mean maximum sustained pull the tractor can maintain at the drawbar over a given distance where the pull is being exerted horizontally and in the vertical plane containing the longitudinal axis of the tractor

[SOURCE: OECD Code 2: February 2017, 2.6]

3.14**maximum permissible torque**

maximum torque specified by the manufacturer for the purpose of a test

3.15**external hydraulic service**

source of hydraulic power, derived from the hydraulic system of the *agricultural tractor* (3.1), available for use on an implement mounted on, coupled to or otherwise used in conjunction with it

[SOURCE: ISO 10448:1994, 3.1]

3.16**coupler pair**

pair of female hydraulic couplers compatible with male couplers as specified in ISO 5675, mounted on *agricultural tractors* (3.1) and connected to the hydraulic system to allow flow from one coupler to the other

[SOURCE: ISO 10448:1994, 3.2]

3.17**available differential pressure**

steady state difference of the hydraulic pressure between two male coupler parts on the implement side

[SOURCE: ISO 10448:1994, 3.3]

3.18**maximum pressure**

maximum steady state hydraulic pressure at either male coupler connected to a *coupler pair* (3.16)

[SOURCE: ISO 10448:1994, 3.4]

ISO 789-13:2018(E)**3.19****maximum loop return pressure**

maximum steady hydraulic pressure at the male coupler returning flow to a hydraulic system that can reverse the flow through that coupler

[SOURCE: ISO 10448:1994, 3.5]

3.20**maximum sump return pressure with coupler**

maximum steady state hydraulic pressure at the male coupler returning flow directly to the reservoir

[SOURCE: ISO 10448:1994, 3.6 (1)]

3.21**maximum sump return pressure without coupler**

maximum steady state hydraulic pressure at an M22 × 1,5 or M27 × 2 thread size port in accordance with ISO 6149-1, ISO 6149-2 or ISO 6149-3, returning flow directly to the reservoir

[SOURCE: ISO 10448:1994, 3.6 (2)]

3.22**rated maximum hydraulic pressure**

maximum pressure as specified by the tractor manufacturer for continuous use

3.23**maximum hydraulic power**

hydraulic power calculation based on the measured flow and available coupler outlet pressure (the pressure near the coupler where oil is exiting from the tractor)

Note 1 to entry: The calculation does not take into account return pressure losses.

3.24**maximum useable hydraulic power
maximum useable continuous hydraulic power**

hydraulic power calculation based on the measured flow and available differential pressure (the pressure near the coupler where oil is exiting from the tractor minus the pressure near the coupler where oil is re-entering the tractor)

Note 1 to entry: The calculation takes into account the return pressure losses and defines the useable hydraulic power available.

3.25**peak pressure**

maximum instantaneous hydraulic pressure at either male coupler connected to a *coupler pair* (3.16)

[SOURCE: ISO 10448:1994, 3.7]

3.26**dynamic radius index**

effective radius corresponding to the distance travelled by the tractor in one rotation of the driving wheels (i.e. this distance divided by 2π), when the tractor is driven without drawbar load at a speed of approximately 3,5 km/h

3.27**non-mechanical drive system**

system which has a non-mechanical coupling between the engine and the power take-off

Note 1 to entry: A fluid or electrical power transmission system is considered to be non-mechanical. A cooling component may be included.

3.28**deviation from rated PTO speed**

rotational frequency per unit time (min^{-1}) of the PTO output shaft above or below the rated (standard) PTO rotational frequency of the system

3.29**safety element**

air cleaner element fitted downstream of a primary, barrier-type element for the purpose of providing the engine with protection against dust in the event of either any type of primary element failure, or dust being present during the removal of the primary element for servicing

3.30**steering control effort**

force applied to the steering control in order to steer the tractor

[SOURCE: ISO 10998:2008, 3.2.1]

3.31**turning radius**

radius of the circular path described by the centre of tyre contact with the surface of the test site of the wheel describing the largest circle

3.32**turning diameter**

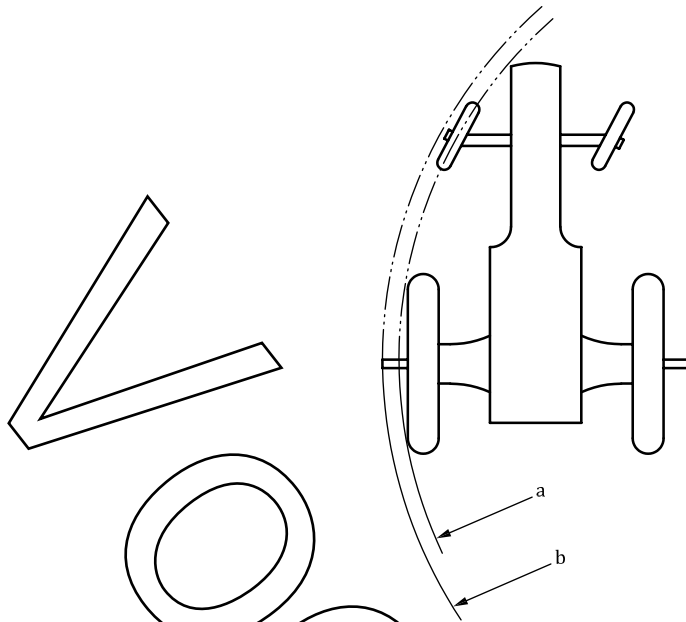
diameter of the circular path described by the centre of tyre contact with the surface of the test site of the wheel describing the largest circle when the tractor is executing its sharpest practicable turn

Note 1 to entry: See [Figure 2](#).

3.33**clearance diameter**

diameter of the smallest circle which will enclose the outermost points of projection of the tractor and its equipment while executing its sharpest turn

Note 1 to entry: See [Figure 2](#).

**Key**

- a Minimum turning diameter.
b Maximum clearance diameter.

Figure 2 — Turning diameter and clearance diameter

3.34 Fuel consumption

3.34.1

specific fuel consumption

mass of fuel consumed per unit of work

Note 1 to entry: When consumption is measured by mass, to obtain hourly consumption by volume and the work performed per unit volume of fuel, a conversion of units of mass to units of volume shall be made using the fuel density value at 15 °C. When consumption is measured by volume, the mass of fuel per unit of work shall be calculated using the density corresponding to the fuel temperature at which the measurement was made. This figure shall then be used to obtain hourly consumption by volume and the work performed per unit volume of fuel, using the density value at 15 °C for conversion from units of mass to units of volume

[SOURCE: OECD Code 2: February 2017, 2.7.2]

3.34.2

specific energy

work per unit volume of fuel consumed

[SOURCE: OECD Code 2: February 2017, 2.7.3]

3.35

specific reagent consumption

mass of reagent consumed per unit of work

[SOURCE: OECD Code 2: February 2017, 2.8.1.1]

ALTIJD DE ACTUELE NORM IN UW BEZIT HEBBEN?

Nooit meer zoeken in de systemen en uzelf de vraag stellen:
“Is NEN-ISO 789-13:2018 en de laatste versie?”™

Via het digitale platform NEN Connect heeft u altijd toegang tot de meest actuele versie van deze norm. Vervallen versies blijven ook beschikbaar. **U en uw collega's** kunnen de norm via NEN Connect makkelijk raadplagen, online en offline.

Kies voor slimmer werken en bekijk onze mogelijkheden op www.nenconnect.nl.

Heeft u vragen?

Onze Klantenservice is bereikbaar maandag tot en met vrijdag, van 8.30 tot 17.00 uur.

Telefoon: 015 2 690 391

E-mail: klantenservice@nen.nl

