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Earth-moving machinery — Determination of turning dimensions of wheeled machines

AS ISO 7457:2021

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Australian Industry Group
Better Regulation Division — SafeWork NSW
Construction and Mining Equipment Industry Group
Department of Natural Resources, Mines and Energy, Qld
Department of Regional NSW
Engineers Australia
Institute of Instrumentation, Control & Automation Australia
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Earth-moving machinery — Determination of turning dimensions of wheeled machines

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Preface

This Standard was prepared by the Standards Australia Committee ME-063, Earthmoving Equipment.

The objective of this document is to specify methods for determining the turning radius, turning diameter, machine clearance diameter, and inside and outside tyre clearance diameters, described in the horizontal plan by a wheeled earth-moving machine with its equipment and attachments when executing a turn.

This document is applicable to all types of steerable wheeled earth-moving machinery. It is applicable irrespective of the type of steering used.

This document is identical with, and has been reproduced from, ISO 7457:1997, *Earth-moving machinery — Determination of turning dimensions of wheeled machines*.

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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.

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.

International Standard ISO 7457 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 1, *Test methods relating to machine performance*.

This second edition cancels and replaces the first edition (ISO 7457:1983), which has been technically revised.

Australian Standard®

Earth-moving machinery — Determination of turning dimensions of wheeled machines

1 Scope

This International Standard specifies methods for determining the turning radius, turning diameter, machine clearance diameter, and inside and outside tyre clearance diameters, described in the horizontal plan by a wheeled earth-moving machine with its equipment and attachments when executing a turn.

This International Standard is applicable to all types of steerable wheeled earth-moving machinery. It is applicable irrespective of the type of steering used.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5010:1992, *Earth-moving machinery — Rubber-tyred machines — Steering requirements.*

ISO 6165:1997, *Earth-moving machinery — Basic types — Vocabulary.*

ISO 9248:1992, *Earth-moving machinery — Units for dimensions, performance and capacities, and their measurement accuracies.*

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 6165 and the following apply.

3.1
turning centre
Point about which all turns of constant radius are made. (See figure 1.)

3.2
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 machine is executing its sharpest practicable turn under the test conditions described in clause 7, or by calculation for skid steer loaders. (See figure 1.)

3.3
turning radius
Half the turning diameter (as defined in 3.2). (See figure 1.)

3.4
machine clearance diameter
Diameter of the smallest circle which will enclose the outermost points of projection of the machine and its equipment and attachments when it executes its sharpest practical turn, under the conditions described in clause 7, or by calculation for skid steer loaders. (See figure 1.)

Note 1 to entry: As the machine clearance diameter is affected by the type of equipment and attachments fitted, the latter should be stated in the test report.