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Earth-moving machinery — Determination of average ground contact pressure for crawler machines



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Mining Electrical and Mining Mechanical Engineering Society
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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 a uniform method for calculating the average ground contact pressure of self-propelled and towed crawler (track-laying) earth-moving machines, as defined in ISO 6165, on soft surfaces with empty equipment or attachment.

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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.

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ISO 16754 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 1, *Test methods relating to machine performance*.

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Earth-moving machinery — Determination of average ground contact pressure for crawler machines

1 Scope

This International Standard specifies a uniform method for calculating the average ground contact pressure of self-propelled and towed crawler (track-laying) earth-moving machines, as defined in ISO 6165, on soft surfaces with empty equipment or attachment.

The average ground contact pressure value is used only for comparing different machine models. Actual ground contact pressure values under operating conditions will vary depending on load, position of the centre of gravity, terrain, track shoe type and size, and surface conditions.

NOTE 1 Alternative methods for determining ground contact pressure could apply to some specific machine families.

NOTE 2 The calculation makes allowance for some penetration into the supporting soil surface and the resulting increase in support area.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6165:2006, *Earth-moving machinery — Basic types — Identification and terms and definitions*

ISO 6746-1:2003, *Earth-moving machinery — Definitions of dimensions and codes — Part 1: Base machine*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6746-1 and the following apply.

3.1
operating mass
OM
mass of the base machine, with equipment and empty attachment in the most usual configuration as specified by the manufacturer, and with the operator (75 kg), full fuel tank and all fluid systems (i.e. hydraulic oil, transmission oil, engine oil, engine coolant) at the levels specified by the manufacturer and, when applicable, with sprinkler water tank(s) half-full

Note 1 to entry: The mass of an operator is not included for non-riding machines.

Note 2 to entry: Ballast mass included at delivery can be included if specified by the manufacturer.

Note 3 to entry: The operating mass is expressed in kilograms.

[SOURCE: ISO 6016]

3.2
overall crawler length
L6
distance on X coordinate between two X planes passing through the farthest points on the ground-supported portion of the track undercarriage
SEE: Figure 1

Note 1 to entry: It is expressed in millimetres.

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