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International Standard



6014

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Earth-moving machinery — Determination of ground speed

Engins de terrassement — Détermination de la vitesse au sol

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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6014 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*.

This second edition cancels and replaces the first edition (ISO 6014-1979), of which it constitutes a minor revision.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Earth-moving machinery — Determination of ground speed

1 Scope and field of application

This International Standard specifies a method of determining the speed of earth-moving machinery. It applies to both wheeled and track-laying earth-moving machinery.

The test method specified may be used for many purposes; for each individual purpose the condition of the machine, for example laden or unladen, is to be stated in the test report.

2 Definitions

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

- 2.1 test track** : Area upon which the test is conducted.
- 2.2 test track length** : Measured length of the track over which the speed is determined.
- 2.3 time recorder** : Apparatus arranged to measure the time interval.
- 2.4 time interval** : Time taken for the machine to travel the test track length.
- 2.5 machine speed** : Average speed of the machine as it is driven over the test track length.
- 2.6 test speed** : Mean value of the average speeds recorded in the individual tests.
- 2.7 mass** : Mass of the machine in the condition in which it is tested, including the mass of the operator and fuel.

3 Apparatus

Any equipment may be used to measure the speed of the machine provided that the accuracies specified in clause 5 are achieved. For example, the following equipment may be used (see the figure).

3.1 Light source, used to activate a photo-sensitive transistor. It may be an electric lamp fed by a battery, generator or mains supply.

3.2 Control box, linked to the photo-sensitive transistor and the electronic digital display timer, incorporating a switch to permit time measurements in either direction.

3.3 Electronic digital display timer (otherwise referred to as the variable time base counter), used to measure the time interval during which the machine under test traverses the test lengths of the track.

NOTE — Alternatively, the time may be measured with stop-watch equipment.

3.4 Electrical supply, which may be a direct current supplied by batteries, when an inverter is required to produce an alternating current from a direct current electrical supply. Alternatively, a mains alternating current may be used.

3.5 Tape measure, at least 25 m in length, to determine the test track length.

3.6 Adjustable tripods, to support all light sources and photo-sensitive transistors at the same height.

4 Test conditions

The test may be carried out on any type of track but the test track length shall be a minimum of 20 m and in any case of sufficient length to be compatible with the speed of the machine being tested. Since the apparatus used in the test can be completely portable, it is possible to make speed measurements on gradients, on natural ground and on normal road surfaces in any condition. The time recorder shall be set up in such a way that the machine under test has a sufficiently long approach route to the test length in which to gain the speeds required, and enough room to brake, turn around and, if required, undergo a test in the opposite direction. The test track and machine conditions shall be as specified in the appropriate standard (for example, ISO 3450: for braking tests which require a knowledge of the speed of the machine, the conditions shall be as required in the Standard).

For level test tracks, the difference in height between any two points not less than 25 m apart along the test track shall not exceed 100 mm.

The cross-fall for all test tracks shall not exceed 1 in 40.

Immediately prior to the test, the machine shall be run for a period sufficient to ensure that the engine, transmission, oils and coolant are at normal working temperatures.