

EUROPEAN STANDARD

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Descriptors: Vibration, power-operated tools, portable electric machine tools, handles, vibration tests, measurements

English version

Hand-held portable power tools — Measurement of vibrations at the handle — Part 1 : General

(ISO 8662-1 : 1988)

Machines à moteur portatives — Mesurage des vibrations au niveau des poignées —
Partie 1: Généralités
(ISO 8662-1 : 1988)

Handgehaltene, tragbare motorbetriebene Werkzeuge —
Teil 1: Allgemeines
(ISO 8662-1 : 1988)

This European Standard was approved by CEN on 1992-10-19. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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Foreword

Following consideration of the results of a Primary Questionnaire among members, the CEN Technical Board decided in October 1991 to submit the International Standard:

ISO 8662-1 : 1988 *Hand-held portable power tools — Measurement of vibrations at the handle — Part 1 : General*

to the Formal Vote.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 1993, and conflicting national standards shall be withdrawn at the latest by April 1993.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Introduction to the European Standard

There are two primary reasons for measuring the vibration on hand held or hand guided machinery.

The first is to determine the vibration dose by combining the measured vibration accelerations with the time history over which the tool is used during a typical working day. The measured vibration values should be obtained in such a way as to represent in as realistic a way as possible the actual working situation. They should be measured over a sufficient time period to allow a good average value to be measured representing the actual daily exposure. It may be necessary to use a number of transducer locations in order to take account of different vibration levels over the grip surface or handle. The vibration dose can then be converted to an equivalent level which would be considered to be constant over a reference period (e.g. 4 hours). This equivalent vibration value can then be used to evaluate the risk of damage due to the vibration exposure using agreed damage risk criteria.

The second reason would be to compare the vibrations from different tools or machinery or different models of the same tool. The machine safety directive 89/392/EEC requires that measurements be made and values put into the instructions and sales literature if the values are greater than $2,5 \text{ ms}^{-2}$ and, if the value is lower than $2,5 \text{ ms}^{-2}$, that fact shall be stated.

The first measurements are called field measurements and the second are called type test measurements.

Field measurements require accurate measurements coupled with the appropriate time history and the result is very dependent on the particular process or way in which the tool is being used. This means that field measurements cannot be used to type test tools.

Type test measurements require accurate and reproducible measurements. It is essential that different laboratories obtain the same results within specified limits. This requires that the process or way in which the tool or machinery is used during the measurement is precisely defined. Normally this process will be typical of the way the tool or machine is used in practice. Unfortunately in some cases, in order to obtain sufficient accuracy, an artificial process, which is not typical of the way the tool is used in the field, has to be used. However it is important that the process used in these measurements gives vibration levels which are typical of measurements made in the field. It is clear that type test measurements cannot be used to assess vibration obtaining at the workplace.

ENV 25349 defines the parameters and gives general guidance on how field measurements and assessment of risk may be made. In specific standards guidance will be given as to how to perform field tests for different types of machinery.

EN 28662-1 defines the general requirements that are needed for type test measurements and the tool specific parts of EN 28662 define precise methodologies for the type testing of specific tools.