
**Hand-held portable power tools —
Measurement of vibrations at the handle —**

**Part 9:
Rammers**

*Machines à moteur portatives — Mesurage des vibrations au niveau des
poignées —*

Partie 9: Marteaux fouloirs



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 8662-9 was prepared by Technical Committee ISO/TC 118, *Compressors, pneumatic tools and pneumatic machines*, Subcommittee SC 3, *Pneumatic tools and machines*.

ISO 8662 consists of the following parts, under the general title *Hand-held portable power tools — Measurement of vibrations at the handle*:

- *Part 1: General*
- *Part 2: Chipping hammers and riveting hammers*
- *Part 3: Rock drills and rotary hammers*
- *Part 3: Grinders*
- *Part 5: Pavement breakers and hammers for construction work*
- *Part 6: Impact drills*
- *Part 7: Wrenches, screwdrivers and nut runners with impact, impulse or ratchet action*
- *Part 8: Polishers and rotary, orbital and random orbital sanders*
- *Part 9: Rammers*
- *Part 10: Nibblers and shears*

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- *Part 11: Fastener driving tools (nailers)*
- *Part 12: Saws and files with reciprocating action and saws with oscillating or rotating action*
- *Part 13: Die grinders*
- *Part 14: Stone-working tools and needle scalers*

Annex A of this part of ISO 8662 is for information only.

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Introduction

This part of ISO 8662 specifies how a type test for the measurement of vibrations, at the handles of rammers shall be performed. It supplements ISO 8662-1, which gives the general specifications for the measurement of vibrations at the handles of handheld power-driven tools. It specifies the operation of the tool under type test and other requirements for the performance of the type test.

Vibration measurements made on rammers operating in typical work situations, e.g. ramming sand, have been found to be relatively reproducible. However, the use of foundry sand as a load for a type test is cumbersome because the sand has to be mixed after each trial. It has therefore been concluded that the type test shall be made on an artificial load (neoprene materials) so designed that acceleration values measured correspond to those found in typical work situations. The reproducibility of the proposed method has been found to be good.

The principle of the operation of a rammer is that the driving medium causes a piston, extended by a rod on the end of which a ramming plate is fixed, to move back and forth. The piston also generates a reaction force on the housing of the machine, which is the cause of vibration.

Hand-held portable power tools — Measurement of vibrations at the handle

Part 9: Rammers

1 Scope

This part of ISO 8662 specifies a laboratory method of measuring the vibrations at the handles of rammers, backfill-rammers, pawing rammers and sand rammers for use in foundries, on building sites, etc. It is a type test procedure for establishing the magnitude of vibrations at the handles of the power tool when operating on the specified load.

It is intended that the results obtained be used to compare different power tools or different models of the same type of power tool. Although the magnitudes measured are obtained in an artificial operation, they will give an indication of the values that would be found in a real work situation.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8662. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8662 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 2787:1984, *Rotary and percussive pneumatic tools — Performance tests*.

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

3 Quantities to be measured

Quantities to be measured are:

- a) acceleration according to ISO 8662-1:1988, 3.1, presented as weighted acceleration according to ISO 8662-1:1988, 3.3;

NOTE — Frequency analysis can be omitted if the absence of d.c. shift can be proved by other means.

- b) feed force;
- c) air or hydraulic pressure;
- d) blow frequency.

4 Instrumentation

4.1 General

For specification of instrumentation see ISO 8662-1:1988, 4.1 to 4.6.

4.2 Transducer

For specification of transducer see ISO 8662-1:1988, 4.1.

4.3 Mechanical filter

Normally it is necessary to use a mechanical filter for measurements according to this part of ISO 8662 (see ISO 8662-1:1988, 3.2).