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**Reciprocating internal combustion  
engines — Performance —**

**Part 3:  
Test measurements**

*Moteurs alternatifs à combustion interne — Performances —  
Partie 3: Mesurages pour les essais*



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 3046-3 was prepared by Technical Committee ISO/TC 70, *Internal combustion engines*.

This third edition cancels and replaces the second edition (ISO 3046-3:1989), which has been technically revised.

ISO 3046 consists of the following parts, under the general title *Reciprocating internal combustion engines — Performance*:

- *Part 1: Declarations of power, fuel and lubricating oil consumption, and test methods — Additional requirements for engines for general use*
- *Part 3: Test measurements*
- *Part 4: Speed governing*
- *Part 5: Torsional vibrations*
- *Part 6: Overspeed protection*

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# Reciprocating internal combustion engines — Performance —

## Part 3: Test measurements

### 1 Scope

This part of ISO 3046 specifies the common measurement techniques of the main performance parameters of reciprocating internal combustion engines, in addition to the basic requirements defined in ISO 15550. This is to ensure that the required accuracy of measurement is achieved for comparison of the measured values with those values specified by the engine manufacturer. Where necessary, individual requirements may be given for particular engine applications.

This part of ISO 3046 applies to reciprocating internal combustion engines for land, rail-traction and marine use.

It may be applied to engines used to propel road construction machines, industrial trucks, and for other applications where no suitable International Standards for these engines exist.

### 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 15550:2002, *Internal combustion engines — Determination and method for the measurement of engine power — General requirements*

ISO 3046-1:2002, *Reciprocating internal combustion engines — Performance — Part 1: Declarations of power, fuel and lubricating oil consumption, and test methods — Additional requirements for engines for general use*

### 3 Terms and definitions

For the purposes of this part of ISO 3046 the terms and definitions given in ISO 15550 apply.

### 4 Symbols

For the symbols used in this part of ISO 3046, see Table 2 of ISO 15550. For subscript meanings, see Table 3 of ISO 15550.

### 5 Standard reference conditions

The requirements Clause 5 of ISO 15550 apply.

If an engine is tested using treated water ( $t_{cr} = 29\text{ °C}$ ) then the resulting engine power established in accordance with 3.3.4 of ISO 15550 will be the same as if the engine had been tested using sea water ( $t_{cr} = 25\text{ °C}$ ) or vice versa.