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SOUTH AFRICAN NATIONAL STANDARD

The determination of performance (at net power) of industrial internal combustion engines

Part 3: Test measurements

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Table of changes		
Change No.	Date	Scope

Abstract

Summarizes the common techniques of measurement of the main parameters of reciprocating internal combustion engines to ensure the required precision in measurements.

Keywords

accuracy, internal combustion engines, measurement, performance, performance testing.

Acknowledgement

Standards South Africa wishes to acknowledge the valuable assistance derived from publications from the International Organization for Standardization.

Foreword

This South African standard was approved by National Committee StanSA TC 5120.27, *Steering committee for construction of motor vehicles*, in accordance with procedures of Standards South Africa, in compliance with annex 3 of the WTO/TBT agreement.

This edition cancels and replaces edition 1 (SABS 0219-3:1988).

This standard is based on ISO 3046 (parts 1 to 6), *Reciprocating internal combustion engines – Performance*.

SANS 10219 consists of the following parts under the general title *The determination of performance (at net power) of industrial internal combustion engines*:

Part 1: Standard reference conditions and declarations of power, fuel consumption and lubricating oil consumption.

Part 2: Test methods.

Part 3: Test measurements.

Part 4: Speed governing.

Part 5 : Torsional vibrations.

Part 6: Overspeed protection.

Annex A forms an integral part of this part of SANS 10219.

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The determination or performance (at net power) of industrial internal combustion engines

Part 3:

Test measurements

1 Scope

1.1 This part of SANS 10219 summarizes the common techniques of measurement of the main parameters of reciprocating internal combustion engines to ensure the required precision in measurements.

1.2 This part of SANS 10219 covers internal combustion engines for land, rail-traction and marine use, and, except as allowed in 1.3, excluding engines used to propel road construction and earth-moving machines, agricultural and industrial types of tractor, automobiles and trucks and aircraft.

1.3 This part of SANS 10219 may be applied to engines used to propel road construction and earth-moving machines, industrial trucks and for other applications where no suitable standard for these engines exist.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of SANS 10219. All standards are subject to revision and, since any reference to a standard is deemed to be a reference to the latest edition of that standard, parties to agreements based on this part of SANS 10219 are encouraged to take steps to ensure the use of the most recent editions of the standards indicated below. Information on currently valid national and international standards can be obtained from Standards South Africa.

ISO 11614, *Reciprocating internal combustion compression-ignition engines – Apparatus for measurement of the opacity and for determination of the light absorption coefficient of exhaust gas.*

SANS 10013-1, *The determination of performance (at net power) of internal combustion engines – Part 1: Road vehicle internal combustion engines at sea level.*

SANS 10013-2, *The determination of performance (at net power) of internal combustion engines – Part 2: Compression ignition engines at altitude.*

SANS 10219-1, *The determination of performance (at net power) of industrial internal combustion engines – Part 1: Standard reference conditions and declarations of power, fuel consumption and lubricating oil consumption.*