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Forestry machinery — Portable chain-saws and brush-cutters — Exhaust system-caused fire risk

*Matériel forestier — Scies à chaîne et débroussailleuses portatives —
Risque d'incendie provoqué par le système d'échappement*



Reference number
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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.

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 9467 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 17, *Manually portable forest machinery*.

Annex A of this International Standard is for information only.

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Introduction

During dry seasons, forest fires may be ignited by engine-powered equipment such as a portable chain-saw or brush-cutter. A chain-saw or brush-cutter exhaust system presents three potential sources of ignition to dry vegetation: hot exhaust gas, hot exhaust system surfaces and the emission of glowing carbon particles. The potential for ignition depends on the specific vegetation involved, environmental factors, chain-saw or brush-cutter usage patterns, the size of carbon particles that can be emitted, and temperatures of the exhaust gas and exhaust system surfaces.

Annex A lists sources of additional information regarding ignition characteristics of forest fuels and the fire ignition potential of chain-saws or brush-cutters.

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Forestry machinery — Portable chain-saws and brush-cutters — Exhaust system-caused fire risk

1 Scope

This International Standard establishes requirements and test methods for portable chain-saw and brush-cutter exhaust system characteristics related to fire ignition potential.

The requirements include:

- maximum temperatures for exhaust gases and exhaust system surfaces;
- maximum opening size for screen-type spark arresters;
- restriction on debris accumulation; and
- durability and serviceability requirements.

The test methods include:

- uniform procedures for measuring exhaust gas and exhaust system surface temperatures; and
- a procedure to evaluate opening size for screen-type spark arresters.

NOTE 1 Means of limiting the size of carbon particle emissions, other than screen-type spark arresters, are not covered by this International Standard.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard 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 7293:1983, *Forestry machinery — Portable chain saws — Engine performance and fuel consumption.*

ISO 8893:1989, *Forestry machinery — Portable brush-saws — Engine performance and fuel consumption.*

3 Definitions

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

3.1 exhaust system: Part(s) used to contain and direct gas from the cylinder exhaust port to the atmosphere, including all shields for hot surface contact prevention.

3.2 powerhead: Chain-saw without guide bar and chain, or brush-cutter without shaft tube and cutting attachments or other removable extensions.

3.3 contact plane: Imaginary flat surface defined by at least three points of contact on the extremities of a chain-saw powerhead. (See 6.2.)

3.4 exposed surface temperature: Temperature at any point where the engine exhaust system touches a contact plane.

3.5 exhaust gas temperature: Temperature at any point where the exhaust gas crosses a contact plane.

3.6 maximum power speed: Engine speed at which maximum corrected brake power is obtained, in accordance with ISO 7293 and ISO 8893 as appropriate.

3.7 screen-type spark arrester: Exhaust system using a screen(s) or baffle(s) with small openings to limit the size of hot particles emitted into the atmosphere.