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Clean cookstoves and clean cooking solutions — Harmonized laboratory test protocols —

Part 1: Standard test sequence for emissions and performance, safety and durability

Fourneaux et foyers de cuisson propres — Protocoles d'essai en laboratoire harmonisés —

Partie 1: Séquence générale d'essais en laboratoire

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 www.iso.org/directives.

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This document was prepared by Technical Committee ISO/TC 285, *Clean cookstoves and clean cooking solutions*.

A list of all the parts in the ISO 19867 series can be found on the ISO website.

Introduction

This document is intended for use as laboratory measurement procedures to determine performance for cookstoves used primarily for cooking or water heating. Its purpose is to provide metrics that can be used to indicate a cookstove's performance under controlled conditions. This document provides a standard test sequence that can be used to compare the performance of various cookstove types, cookstove fuels, and cooking practices under controlled laboratory test conditions, as specified in this document.

This document was developed to achieve two goals:

a) greater alignment in methodology and metrics around the world, and

b) adaptation of methodology and metrics to the wide variety of cookstove types, cookstove fuels, and cooking practices.

For the purpose of this document, the intended user group refers to the approximately 2,8 billion people worldwide who are currently cooking with open fires or rudimentary stoves.

For evaluation of the performance and predicted outcomes of a cooking system in the field [comprising cookstove(s), fuel(s), cooking vessel(s), kitchen, ventilation, and user(s)], ISO 19869[1)] applies.

This document was developed from best practices from existing cookstove testing protocols, the experience of cookstove testing centres in many countries, and standards and testing methodology in related sectors.

Air pollutant emissions results are expressed in units of mass of pollutant per useful energy delivered and represent the mass of emissions per unit of cooking energy delivered. Emission results are also expressed in units of mass of pollutant per time and represent the mass rate of emission per unit time. Procedures for determining emissions require a complex set of individual measurements, rather than a single measured value. Thus, the results obtained depend as much on the procedure used to perform the measurements as they depend on the cookstove and the test method. The procedure used to perform the complex set of individual measurements is critical to obtaining the results.

Energy efficiency results are expressed as thermal efficiency. Cooking power results are expressed in units of watts.

Safety and durability results are expressed as a points-based rating system to enable individual countries and organizations to select levels based on their priorities. Durability methods are intended to evaluate the aspects of cookstove designs that can affect usable life and consumers' perceptions of quality. Durability testing methods include evaluation of extended runs, quenching, external and internal impacts, coating adhesion, corrosion, and material failure temperature.

1) In preparation.