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Test method for energy consumption of refuse collection vehicles

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee AUE/13, Commercial and public service vehicles.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Test method for energy consumption of refuse collection vehicles

Méthode d'essai pour mesurer la consommation énergétique de carburant des véhicules de collecte et de transport des déchets

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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.

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 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 297, *Waste collection and transportation management.*

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

As a result of the development of new drive unit concepts for refuse collection vehicles (RCV), as well as (from a European point of view) the provisions from the procurement guideline 2009/33/EC, there is now a demand for universal processes and provisions for determining the environmental effects of RCVs, with the objective of achieving a uniform evaluation for environmental efficiency.

The environmental effects in the utilization phase for RCVs are essentially determined by their energy consumption, from which the relevant CO_2 emissions will result.

In order to be able to define appropriate characteristic numbers for the environmental effect of RCVs, it is therefore necessary to differentiate between refuse collection and transport trips with and without loads. The complete logistics shall be considered for an effective comparison of the various vehicle models and their respective drive units.

The objective is to be able to issue an environmental efficiency ID for various vehicle models.

Policymakers, planners, administrators, manufacturers and users should be able to decide in the future whether consumption measuring should be executed as a simulation or by means of actual, existing test circuits.

INTERNATIONAL STANDARD **ISO 24162:2022**

Test method for energy consumption of refuse collection vehicles

1 Scope

This document specifies a uniform, reproducible testing process for various drive units, chassis, constructions and lifting devices for the refuse collection vehicles described in EN 1501 (all parts, excluding EN 1501-4), with which a comparison for energy consumption can be performed.

This specification defines criteria for a reference area with regard to a synthesized tour (test circuit). This therefore serves to determine a representative test circuit and/or data for a software calculation tool, e.g. VECTO[1)] .

NOTE VECTO (Vehicle Energy Consumption calculation TOol) is a simulation tool that has been developed by the European Commission for determining CO_2 emissions and fuel consumption from heavy duty vehicles with a gross vehicle mass above 3 500 kg. URL: https://ec.europa.eu/clima/policies/transport/vehicles/vecto_en#tab-0-0

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 1501-1, *Refuse collection vehicles — General requirements and safety requirements — Part 1: Rear loaded refuse collection vehicles*

EN 1501-2, *Refuse collection vehicles — General requirements and safety requirements — Part 2: Side loaded refuse collection vehicles*

EN 1501-3, *Refuse collection vehicles — General requirements and safety requirements — Part 3: Front loaded refuse collection vehicles*

EN 1501-5, *Refuse collection vehicles — General requirements and safety requirements — Part 5: Lifting devices for refuse collection vehicles*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
energy consumption
amount of mechanical, electrical, hydraulic and pneumatic energy which is needed for the defined cycles of the body

1) VECTO is an example of a suitable product available free of charge. This information is given for the convenience of users of this document and does not constitute an endorsement by ISO of this product.