
**Hybrid-electric road vehicles —
Exhaust emissions and fuel
consumption measurements —**

**Part 2:
Externally chargeable vehicles**

*Véhicules routiers électriques hybrides — Mesurages des émissions à
l'échappement et de la consommation de carburant —*

Partie 2: Véhicules rechargeables par des moyens externes



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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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 23274-2 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 21, *Electrically propelled road vehicles*.

This first edition of ISO 23274-2, together with ISO 23274-1, cancels and replaces ISO 23274:2007, which has been technically revised.

ISO 23274 consists of the following parts, under the general title *Hybrid-electric road vehicles — Exhaust emissions and fuel consumption measurements*:

- *Part 1: Non-externally chargeable vehicles*
- *Part 2: Externally chargeable vehicles*

Hybrid-electric road vehicles — Exhaust emissions and fuel consumption measurements —

Part 2: Externally chargeable vehicles

1 Scope

This part of ISO 23274 specifies a chassis dynamometer test procedure to determine the end of CD (charge-depleting) state and consumed electric energy during CD state.

The identification of the end of CD state is an important step for procedures to determine exhaust emissions and fuel consumption. Final determination of exhaust emissions and fuel consumption is not included in this part of ISO 23274.

This part of ISO 23274 applies to vehicles with the following characteristics.

- The vehicles are hybrid-electric road vehicles (HEV) with an internal combustion engine (ICE) and the on-board rechargeable energy storage system (RESS) for vehicle propulsion which is supplied by electric energy from the stationary external power source.
- A CD state, in which the electric energy in RESS from the stationary external power source is consumed, is followed by a CS (charge-sustaining) state in which the fuel energy is consumed sustaining the electric energy of the RESS.
- Only batteries are assumed as the RESS of a vehicle.
- The RESS is not charged while driving unless by regenerative braking and/or by generating by ICE.

NOTE 1 Trolleybuses and solar powered vehicles are not included in the scope.

- The vehicle is classified as a passenger car or light duty truck, as defined in each regional annex.
- Only liquid fuels (for example, gasoline and diesel fuel) are used.

NOTE 2 In the case of vehicles with ICE using other fuel [for example, compressed natural gas (CNG), hydrogen (H₂)], this part of ISO 23274 can apply except the measurement of consumed fuel; otherwise the measurement method for those using the corresponding fuel can apply.

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/TR 8713, *Electrically propelled road vehicles — Vocabulary*

ISO 23274-1, *Hybrid-electric road vehicles — Exhaust emissions and fuel consumption measurements — Part 1: Non-externally chargeable vehicles*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/TR 8713 and the following apply.