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Entwurf**Elektrische Straßenfahrzeuge –
Prüfverfahren zur Bestimmung der Ladeperformance;
Text Englisch**

Electric road vehicles –
Test procedures for determination of charging performance;
Text in English

Véhicules routiers électriques –
Méthode d'essai pour la détermination de la performance de la charge;
Texte en anglais

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Foreword

This document has been prepared by Working Group NA 052-00-37-55 AK “User information for energy transfer” of the DIN-Normenausschuss Automobiltechnik (NAAutomobil, DIN Standards Committee Automotive Engineering).

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Introduction

This document prescribes test procedures to determine the charging performance of electric vehicle. The test procedures were derived from typical use cases, whereas both - test procedures and use cases – were established based on the following premises:

- Comparability:
The charging performance determined according to this Standard enables the user to compare the performance of different EVs in realistic scenarios. The application of EV specific functions to optimize the charging performance (e. g. battery preconditioning) is respected.
- Imitability and plausibility:
Users have the possibility to retrace the determined charging performance in principle.
- Reproducibility:
The specified test conditions, test methods and test processes ensure reproducibility within common measurement tolerances. It was attached importance to leave least possible space for inadvertent deviations or manipulations.

The test results serve for information purposes e. g. at user interfaces or manufacturer specifications.

1 Scope

This document describes procedures to determine the charging performance of electrically propelled vehicles. It provides details about test conditions, test methods and test processes derived from typical use cases. Furthermore, requirements regarding the information of the user are specified.

The specified test procedures apply for AC and DC charging of electrically propelled passenger cars and electrically propelled light commercial vehicles.

NOTE The charging performance for electrically propelled vehicles other than passenger cars and light commercial vehicles and for wireless power transfer is under consideration for future editions.

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.

Commission Regulation (EU) 2017/1151

3 Terms and definitions

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

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

DIN and DKE maintain terminological databases for use in standardization at the following addresses:

- DIN-TERMinologieportal: available at <https://www.din.de/go/din-term>
- DKE-IEV: available at <http://www.dke.de/DKE-IEV>

3.1

electrically propelled vehicle

EV

vehicle with one or more electric drive(s) for vehicle propulsion

Note 1 to entry: n this document limited to passenger cars and light commercial vehicles.

[SOURCE: ISO 6469-3:2018]

3.2

EV supply equipment

equipment or a combination of equipment, providing dedicated functions to supply electric energy from a fixed electrical installation or supply network to an EV (3.1) for the purpose of charging

EXAMPLE 1 For mode 3 case B, the EV supply equipment consists of the EV charging station and the cable assembly.

EXAMPLE 2 For mode 3 case C, the EV supply equipment consists of the EV charging station with its cable assembly.

[SOURCE: ISO 17409:2020]

3.3

meter

measuring instrument that determines the measured value of the effective energy at the charging interface of EV supply equipment

3.4

rechargeable energy storage system

RESS

rechargeable system that stores energy for delivery of electric energy for the electric drive

EXAMPLE Battery, capacitor, flywheel

Note 1 to entry: In Commission Regulation (EU) 2017/1151, the equivalent term is rechargeable electric energy storage system (REESS).

[SOURCE: ISO 6469-1:2019]

3.5

RESS state of charge

RESS SOC

residual capacity of RESS available to be discharged as indicated to the user

Note 1 to entry: RESS state of charge is normally expressed as a percentage of full charge.

[SOURCE: ISO/TR 11954:2008, modified – “as indicated to the user” added]

4 Symbols and abbreviations

WLTC Worldwide harmonized Light vehicles Test Cycle

WLTP Worldwide harmonized Light vehicles Test Procedure

rUBE recharged Usable Battery Energy

5 General

The test procedures described in this document serve to determine the charging performance of an EV.

This document does not address bundling or classification of vehicle configurations. The applicability of tests results for different configurations of vehicles is at the discretion of the vehicle manufacturer.

6 Test cases and general requirements

6.1 Overview of test cases

Table 1 gives an overview of the test cases to determine the charging performance. Details to the execution of the corresponding test procedures are given in Clause 6.3.

NOTE Annex A describes rationales as background information to the selection of the test cases.