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Electrically propelled road vehicles — Vocabulary

Véhicules routiers électriques — Vocabulaire

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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 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 22 *Road vehicles*, Subcommittee SC 37 *Electrically propelled road vehicles*.

This edition of ISO/TR 8713 cancels and replaces the first edition (ISO 8713:2012), which has been technically revised and includes the following main changes:

— addition of all terms and definitions from ISO/TC 22/SC 37 standards;

— addition of source information for terms/definitions not developed in ISO/TC 22/SC 37;

— provision of information on standards using the relevant term and defining a master;

— adaptation of structure to the ISO/IEC Directives Part 2, 2016 edition;

— provision of a list of abbreviations used in this document.

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

This document establishes a vocabulary of terms and the related definitions used in ISO standards for electrically propelled road vehicles.

It provides support for the development of new standards and for the review of existing standards.

This document lists terms as defined in ISO/TC 22/SC 37 publications. For each term, the master publication is assigned based on an ISO/TC 22/SC 37 decision. Other publications of ISO TC 22/SC 37 may contain definitions for those terms as well. This document replicates the definition for the term from the master publication without any change. The master publication and the other publications are listed with each term.

ISO/TC 22/SC 37 decided that project leaders of projects using the term should align themselves with the content of the definition under the leadership of the project leader from the master publication. ISO/TC 22/SC 37 prioritizes a consistent use of definitions for terms.

The terms and definitions are listed in alphabetical order. A topic specific list is given in Annex A.

Electrically propelled road vehicles — Vocabulary

1 Scope

This document establishes a vocabulary of terms and the related definitions used in ISO/TC 22/SC 37 standards.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

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

3.1
acceleration ability (v1 to v2)
shortest time required to accelerate the vehicle from speed v1 to speed v2

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 8715:2001.

3.2
alignment
relative position of primary to secondary device

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO/PAS 19363:2017.

3.3
alignment check
confirmation that the primary and secondary devices are properly positioned relative to each other

Note 1 to entry: Proper positioning is done to assure sufficient system functionality (e.g. system efficiency, EMF/EMC limits, safety requirements etc.).

[SOURCE: IEC 61980-2]

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO/PAS 19363:2017.

3.4
applicable driving test
ADT
single driving test schedule which is specified for each region

EXAMPLE Chassis dynamometer test cycle for light-duty vehicles in Japan (JC08), New European Driving Cycle (NEDC), Urban Dynamometer Driving Schedule (UDDS).

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 23274-2:2012, also defined in ISO 23274-1:2013 and ISO 23828:2013.

3.5
auxiliary electric system
vehicle system, other than for vehicle propulsion, that operates on electric energy

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO 6469-2:2018 and ISO 6469-4:2015.

3.6
balance of electric circuit
remaining section of an electric circuit when all electric power sources that are energized (RESS and fuel cell stacks) are disconnected

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO 17409:2015.

3.7
basic insulation
insulation of hazardous live parts which provides basic protection

Note 1 to entry: This concept does not apply to insulation used exclusively for functional purposes.

Note 2 to entry: Where insulation is not provided by solid insulation only, it is complemented with protective barriers or protective enclosures to prevent access to live parts in order to achieve basic protection.

[SOURCE: IEC 60050-195:1998, 195-06-06, modified — "hazardous-live-parts" written as "hazardous live parts"]

Note 3 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO 17409:2015 and ISO/PAS 19363:2017.

3.8
basic protection
protection against electric shock under fault-free conditions

[SOURCE: IEC 60050-195:1998, 195-06-01]

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018.

3.9
battery control unit
BCU
electronic device that controls, manages, detects or calculates electric and thermal functions of the battery system and that provides communication between the battery system and other vehicle controllers

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 12405-4:2018.

3.10
battery pack
energy storage device that includes cells or cell assemblies normally connected with cell electronics, power supply circuits and overcurrent shut-off device, including electrical interconnections, interfaces for external systems

Note 1 to entry: Examples of external systems are cooling, voltage class B, auxiliary voltage class A and communication.

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 12405-4:2018.

3.11
battery system
energy storage device that includes cells or cell assemblies or battery pack(s) as well as electrical circuits and electronics

Note 1 to entry: Battery system components can also be distributed in different devices within the vehicle.

Note 2 to entry: Examples of electronics are the BCU and contactors.

Note 3 to entry: Master publication in ISO/TC 22/SC 37: ISO 12405-4:2018, also defined in ISO/PAS 19363:2017.

3.12
bus
vehicle designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass exceeding 5 t

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[1)].

3.13
capacity
total number of ampere-hours that can be withdrawn from a fully charged RESS under specified conditions

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[2)], also defined in ISO 12405-4:2018.

3.14
case A
connection of an EV to the a.c. supply network (mains) utilizing a supply cable and plug permanently attached to the EV

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 17409:2015, also defined in ISO 6469-2:2018.

3.15
case B

connection of an EV to the a.c. supply network (mains) utilizing a detachable cable assembly with a vehicle connector and a.c. EV supply equipment

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 17409:2015, also defined in ISO 6469-2:2018.

3.16
case C
connection of an EV to the a.c. supply network (mains) utilizing a supply cable and vehicle connector permanently attached to the EV supply equipment

Note 1 to entry: Only case C is applicable for mode 4 (see IEC 61851–1).

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 17409:2015, also defined in ISO 6469-2:2018.

3.17
cell electronics
electronic device that collects and possibly monitors thermal or electric data of cells or cell assemblies and contains electronics for cell balancing, if necessary

Note 1 to entry: The cell electronics can include a cell controller. The functionality of cell balancing can be controlled by the cell electronics or by the BCU.

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 12405-4:2018.

3.18
charge balance of RESS
change of charge in RESS during fuel consumption measurement

Note 1 to entry: Normally expressed in ampere hours (Ah).

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 23274-2:2012, also defined in ISO 23274-1:2013, ISO 23828:2013 and ISO/TR 11955.

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1) Under preparation. Stage at the time of publication: ISO/FDIS 6469-1:2019.

2) Under preparation. Stage at the time of publication: ISO/FDIS 6469-1:2019.

3.19
charge-depleting state
CD state
operating mode of a HEV with ICE in which the vehicle runs by consuming mainly the electric energy from the stationary external power source or along with the fuel energy simultaneously or sequentially until CS state

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 23274-2:2012.

3.20
charger
power converter at the vehicle power supply circuit which supplies electric power, e.g. for charging a RESS

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 17409:2015.

3.21
charge-sustaining state
CS state
operating mode where the HEV runs by consuming the fuel energy while sustaining the electric energy of the RESS

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 23274-2:2012.

3.22
clearance
shortest distance in air between two conductive parts

Note 1 to entry: This distance applies only to parts that are exposed to the atmosphere and not to parts which are isolated or covered with coating compound.

[SOURCE: IEC 60664-1:2007, 3.2]

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO 6469-1:—[3].

3.23
complete vehicle kerb mass
mass of the vehicle including batteries, without occupants but with fuel, cooling liquid, window washer fluid, lubricating oil, tools and spare wheel, on-board charger, portable charger or part of it, if provided as standard equipment by the vehicle manufacturer

[SOURCE: ISO 1176]

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 8715:2001, also defined in ISO 8714:2002.

3.24
component operating status
describes the general functional behaviour of components which depend directly on the voltage in voltage class B electric circuit

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO/PAS 19295:2016.

3.25
conductive part
part which can carry electric current

[SOURCE: IEC 60050-195:1998, 195-01-06]

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO 6469-1:—[4], ISO 6469-4:2015 and ISO 17409:2015.

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3) Under preparation. Stage at the time of publication: ISO/FDIS 6469-1:2019.

4) Under preparation. Stage at the time of publication: ISO/FDIS 6469-1:2019.

3.26
conductively connected circuit
two electric circuits considered conductively connected unless they are separated by at least basic insulation

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018.

3.27
control pilot circuit
circuit designed for the transmission of signals and/or communication between an EV and an EV supply equipment

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 17409:2015.

3.28
control pilot conductor
insulated conductor incorporated in an EV cable assembly that creates, together with the protective conductor, the control pilot circuit

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 17409:2015.

3.29
control pilot function
functionality used to monitor and control the interaction between the electric vehicle and the supply equipment

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 17409:2015.

3.30
coulomb efficiency
Ah efficiency
efficiency of the battery, based on electricity (in coulomb) for a specified charge/discharge procedure, expressed by output electricity divided by input electricity

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO/TR 11955.

3.31
customer
party that is interested in using voltage class B component or system

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO/PAS 19295:2016.

party that is interested in using the RESS or RESS subsystem and therefore, orders or performs the test

EXAMPLE A vehicle manufacturer.

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[5].

3.32
creepage distance
shortest distance along the surface of a solid insulating material between two conductive parts

[SOURCE: IEC 60050-151:2001/AMD1:2013, 151-15-50]

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO 6469-1:—[6].

5) Under preparation. Stage at the time of publication: ISO/FDIS 6469-1:2019.

6) Under preparation. Stage at the time of publication: ISO/FDIS 6469-1:2019.

3.33
d.c. EV charging station
EV supply equipment intended to supply d.c. current to an EV

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 17409:2015.

3.34
degree of protection
IP
protection provided by an enclosure against access, foreign objects and/or water and verified by standardized test methods in accordance with ISO 20653

[SOURCE: ISO 20653, modified — "in accordance with ISO 20653" added]

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018.

3.35
direct contact
electric contact of persons or animals with live parts

[SOURCE: IEC 60050-195:1998, 195-06-03]

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO 6469-4:2015 and ISO 17409:2015.

3.36
displacement power factor
power factor due to the phase shift between voltage and current at the fundamental line frequency

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 17409:2015.

3.37
distortion power factor
product of the displacement power factor and the total harmonic distortion up to the 40th harmonics of the load current

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 17409:2015.

3.38
double insulation
insulation comprising both basic insulation and supplementary insulation

[SOURCE: IEC 60050-195:1998, 195-06-08]

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO/PAS 19363:2017 and ISO 17409:2015.

3.39
driving-enabled mode
operating mode in which the vehicle can be moved by its own propulsion system by one action

Note 1 to entry: Examples for this action are: pressure to the accelerator pedal, activation of an equivalent control, release of the brake system.

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-2:2018.

3.40
dynamic loaded radius (tyre)
effective radius of a tyre when it is deformed by the mass of the vehicle loaded to its test mass

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 8715:2001.

3.41
electric chassis
conductive parts of a vehicle that are electrically connected and whose potential is taken as reference

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO 6469-1:—[7], ISO 6469-4:2015 and ISO 17409:2015.

3.42
electric circuit
entire set of interconnected live parts through which electrical current is designed to flow under normal operating conditions

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO/PAS 19295:2016.

3.43
electric drive
combination of an electric traction motor, power electronics and their associated controls for the conversion of electric to mechanical power and vice versa

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO 6469-1:—[8], ISO 6469-2:2018, ISO 6469-4:2015 and ISO 12405-4:2018.

3.44
electric propulsion system maximum working voltage
highest value of d.c. voltage that can occur in an electric propulsion system under any normal operating conditions according to the customer's specifications, disregarding transients

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO/PAS 19295:2016.

3.45
electric shock
physiological effect resulting from an electric current through a human body or animal body

[SOURCE: IEC 60050-195:1998, 195-01-04]

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO 6469-4:2015, ISO 17409:2015 and ISO/PAS 19363:2017.

3.46
electrically propelled vehicle
EV
vehicle with one or more electric drive(s) for vehicle propulsion

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO 6469-1:—[9], ISO 6469-2:2018, ISO 6469-4:2015, ISO 12405-4:2018, ISO/PAS 19363:2017 and ISO 17409:2015

3.47
energized
qualifies a conductive part having an electric potential difference with respect to a relevant reference

[SOURCE: IEC 60050-151:2001/AMD1:2013, 151-15-58, modified — Note deleted]

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018.

7) Under preparation. Stage at the time of publication: ISO/FDIS 6469-1:2019.

8) Under preparation. Stage at the time of publication: ISO/FDIS 6469-1:2019.

9) Under preparation. Stage at the time of publication: ISO/FDIS 6469-1:2019.