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Electrically propelled road vehicles — Vocabulary

Véhicules routiers électriques — Vocabulaire

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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

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 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.

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.

3.48
energy balance of RESS
ΔE_{RESS}
change of RESS energy state during an applicable driving test

Note 1 to entry: Normally expressed in watt hours (Wh).

Note 2 to entry: For practical use, the energy balance of RESS is approximated by multiplying the charge balance of battery in ampere hours (Ah) by the nominal voltage in volts (V).

Note 3 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.

3.49
energy density
amount of stored energy related to the battery pack or system volume

Note 1 to entry: The battery pack or system includes the cooling system, if any, to the point of a reversible attachment of the coolant lines or air ducts, respectively.

Note 2 to entry: Energy density is expressed in watt hours per litre (Wh/l).

Note 3 to entry: Master publication in ISO/TC 22/SC 37: ISO 12405-4:2018.

3.50
energy efficiency
Wh efficiency
efficiency of the battery, based on energy for a specified charge/discharge procedure, expressed by output energy divided by input energy

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

3.51
energy round trip efficiency
ratio of the net d.c. energy delivered by a DUT during a discharge test to the total d.c. energy required to restore the initial SOC by a standard charge

Note 1 to entry: The net d.c. energy is expressed as watt hours (Wh) discharge and the total d.c. energy is expressed as watt hours (Wh) charge.

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

3.52
equipotential bonding
provision of electric connections between conductive parts, intended to achieve equipotentiality

[SOURCE: IEC 60050-195:1998, 195-01-10]

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

3.53
EV communication controller
EVCC
embedded system, within the vehicle, that implements the communication between the vehicle and the SECC in order to support specific functions

Note 1 to entry: Such specific functions could be e.g. controlling input and output channels, encryption, or data transfer between vehicle and SECC.

[SOURCE: ISO 15118-1]

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

3.54
EV device
on-board component assembly comprising the secondary device, the EV power electronics and all on-board communication controllers, as well as the electrical and mechanical connections between the assemblies

Note 1 to entry: Ancillary systems used for supporting the operation of MF-WPT are also included (e.g. positioning).

Note 2 to entry: The hardware packaging of the assemblies is up to the discretion of the manufacturer.

Note 3 to entry: Master publication in ISO/TC 22/SC 37: ISO/PAS 19363:2017.

3.55
EV power circuit
EVPC
electrical component assembly that includes the secondary device and EV power electronics as well as the mechanical connections between the components

Note 1 to entry: EVPC is here defined specifically for MF-WPT systems.

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

3.56
EV power electronics
on-board component that converts the power and frequency needed for the output from the EVPC

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

3.57
EV supply equipment
equipment or combined equipment providing dedicated functions for an electric power supply from a fixed installation to an EV for the purpose of charging for all dedicated charging modes and cases of connection

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

3.58
EVPC power class
power class of an EVPC defined according to the MF-WPT input power class of the supply device it is designed to operate

Note 1 to entry: The power delivered to the EV device will be less than that maximum MF-WPT input power to the MF-WPT system due to losses e.g. in the supply power electronics and eddy currents in the MF-WPT shield or the vehicle underbody.

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

3.59
explosion
sudden release of energy sufficient to cause pressure waves and/or projectiles that may cause structural and/or physical damage to the surrounding area

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[10)].

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

3.60
exposed conductive part
conductive part of equipment which can be touched and which is not normally live, but which can become live when basic insulation fails

Note 1 to entry: A conductive part of electrical equipment which can become live only through contact with an exposed conductive part which has become live, is not considered to be an exposed conductive part itself.

[SOURCE: IEC 61140:2016, 3.6, modified — "exposed conductive part" replaces "exposed-conductive-part]

Note 2 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.

3.61
external electric power supply
electric power source that is not part of the vehicle for supplying electric energy to an EV using an EV supply equipment

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

3.62
externally chargeable HEV
HEV with a rechargeable energy storage system (RESS) that is intended to be charged from an external electric energy source

Note 1 to entry: External charge for conditioning of the RESS is not included.

Note 2 to entry: Externally chargeable HEVs are known as plug-in HEVs (PHEVs).

Note 3 to entry: Master publication in ISO/TC 22/SC 37: ISO 23274-2:2012.

3.63
fault protection
protection against electric shock under single-fault conditions

[SOURCE: IEC 60050-195:1998, 195-06-02]

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

3.64
fine positioning
relative movement of the secondary device in relation to the primary device with the goal of reaching optimal alignment

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

3.65
flammable electrolyte
electrolyte having a flash point of not more than 93 °C

Note 1 to entry: The determination of flash point is based on ISO 2592.

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[11)].

3.66
foreign object
any object that is not an attached part of the vehicle or the MF-WPT system

[SOURCE: IEC 61980-1]

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

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

3.67
fuel cell hybrid electric vehicle operation mode
FCHEV operation mode
mode of an FCHEV in which both RESS and fuel cell system are used sequentially or simultaneously for vehicle propulsion

Note 1 to entry: The fuel cell system can also charge the RESS during propulsion or standstill.

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO/TR 11954:2008.

3.68
fuel cell hybrid electric vehicle
FCHEV
electrically propelled vehicle with a RESS and a fuel cell system as power sources for vehicle propulsion

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 23828:2013.

3.69
fuel cell stack
assembly of two or more fuel cells that are electrically connected

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

3.70
fuel cell system
system, typically containing the following subsystems: fuel cell stack, air processing, fuel processing, thermal management, water management, and their control

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

3.71
fuel cell vehicle
FCV
electrically propelled vehicle with a fuel cell system as the power source for vehicle propulsion

Note 1 to entry: A FCV may also have a RESS or another power source for vehicle propulsion.

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-2:2018, also defined in ISO 23828:2013.

3.72
grid
electric power source that is not part of the vehicle for supplying electric energy to an EV using a supply power circuit

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

3.73
hazard
potential source of harm

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

3.74
hazardous live part
live part which, under certain conditions, can give a harmful electric shock

Note 1 to entry: For guidance on harmful physiological effects see IEC 61140.

[SOURCE: IEC 60050-195:1998, 195-06-05, modified — "hazardous live part" replaces "hazardous-live-part" and Note 1 to entry added.]

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018.

3.75
heavy-duty truck
vehicle designed and constructed for the carriage of goods and having a maximum mass exceeding 12 t

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[12)].

3.76
high-energy application
characteristic of device or application, for which the numerical ratio between maximum allowed electric power output and electric energy output at a 1C discharge rate at RT for a battery pack or system is typically lower than 10

Note 1 to entry: Typically high-energy battery packs and systems are designed for applications in BEVs and PHEVs.

Note 2 to entry: The allowed electric power output is expressed as power in watts (W) and the electric energy output is expressed as energy in watt hours (Wh).

Note 3 to entry: Master publication in ISO/TC 22/SC 37: ISO 12405-4:2018.

3.77
high-power application
characteristic of device or application, for which the numerical ratio between maximum allowed electric power output and electric energy output at a 1C discharge rate at RT for a battery pack or system is typically equal to or higher than 10

Note 1 to entry: Typically high-power battery packs and systems are designed for applications in HEVs and FCVs.

Note 2 to entry: The allowed electric power output is expressed as power in watts (W) and the electric energy output is expressed as energy in watt hours (Wh).

Note 3 to entry: Master publication in ISO/TC 22/SC 37: ISO 12405-4:2018.

3.78
hill starting ability
maximum slope on which the vehicle can start moving over a minimum distance of 10 m

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

3.79
hybrid-electric vehicle
HEV
vehicle with both a rechargeable energy storage system (RESS) and a fuelled power source for propulsion

EXAMPLE Internal combustion engine or fuel cell systems are typical types of fuelled power sources.

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

3.80
insulation resistance
isolation resistance
resistance between live parts of an electric circuit and the electric chassis as well as other electric circuits which are insulated from this electric circuit

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO 6469-1:—[13)], ISO 6469-4:2015 and ISO 17409:2015.

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

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

3.81
isolation resistance monitoring system
system that periodically or continuously monitors the isolation resistance between live parts and the electric chassis

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO 6469-1:—[14)].

3.82
leakage
escape of liquid or gas out of DUT except for venting

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[15)].

3.83
line conductor
conductor which is electrically energized in normal operation and capable of contributing to the transmission or distribution of electric energy

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-4:2015.

3.84
live conductor
<line and neutral> conductor which is energized in normal operation and capable of contributing to the transmission or distribution of electric energy

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

3.85
live part
conductor or conductive part intended to be energized in normal use, but by convention not the electric chassis

[SOURCE: IEC 60050-195:1998, 195-02-19, modified — “including a neutral conductor” and Note 1 to entry deleted and "a PEN conductor or PEM conductor or PEL conductor" replaced by "the electric chassis"]

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO 6469-1:—[16)], ISO 6469-4:2015 and ISO 17409:2015.

3.86
magnetic field wireless power transfer
MF-WPT
wireless transfer of energy from a power source to an electrical load via a magnetic field

[SOURCE: IEC 61980-3]

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

3.87
maximum design total mass
maximum vehicle mass as specified by the vehicle manufacturer

[SOURCE: ISO 1176]

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

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

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

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

3.88
maximum operating temperature
maximum value of the ambient temperature at which the systems/components can be operated continuously

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[17].

3.89
maximum speed
highest average speed that the vehicle can maintain throughout a specified test

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

3.90
maximum thirty minutes speed
v30
highest average speed which the vehicle can maintain over 30 min

Note 1 to entry: For the relevant test procedure, see 9.1.

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 8715:2001.

3.91
maximum working voltage
highest value of AC voltage (rms) or of DC voltage that can occur under any normal operating conditions according to the manufacturer's specifications, disregarding transients and ripple

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO/PAS 19295:2016, ISO 6469-1:—[18], ISO 6469-2:2018, ISO 6469-4:2015, ISO 17409:2015 and ISO 12405-4:2018.

3.92
medium-duty truck
vehicle designed and constructed for the carriage of goods and having a maximum mass exceeding 3,5 t but not exceeding 12 t

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[19].

3.93
message
data in a specified format

EXAMPLE A message contains data in a specified format that describes e.g. a request or a reply.

Note 1 to entry: A message contains zero or more parameters.

[SOURCE: IEC 61980-2]

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

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

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

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

3.94
MF-WPT input power class
power class of a supply device of MF-WPT systems defined from the perspective of the maximum power drawn from the grid in order to drive the supply device

Note 1 to entry: IEC 61980-3[20] will specify the MF-WPT input power classes, current status of discussions: for MF-WPT1 the maximum input power is ≤3,7 kW, for MF-WPT2 the maximum input power is >3,7 kW and ≤7,7 kW, for MF-WPT3 the maximum input power is >7,7 kW and ≤11 kW, for MF-WPT4 the maximum input power is >11 kW and ≤22 kW, for MF-WPT5 the maximum input power is >22 kW. For this PAS MF-WPT1 to MF-WPT4 are under consideration.

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

3.95
MF-WPT system
system consisting of primary device, supply power electronics, supply equipment communication controller, (the supply device), secondary device, EV power electronics and electric vehicle communication controller (the EV device), including wiring, housing and covers used to transfer energy using magnetic fields

[SOURCE: IEC 61980-3]

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

3.96
midi 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 not exceeding 5 t

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[21].

3.97
mode 1
connection of the EV to the a.c. supply network (mains) utilizing a cable and plug, that is not fitted with any supplementary pilot or auxiliary contacts, and connects to a standard socket-outlet

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

3.98
mode 2
connection of the EV to the a.c. supply network (mains) utilizing a cable and plug connected to a standard socket-outlet, with a control pilot function and system for personal protection against electric shock placed between the EV and the socket outlet

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

3.99
mode 3
connection of the EV utilizing EV supply equipment permanently connected to the a.c. supply network (mains) and where the control pilot function extends to control equipment in the EV supply equipment

Note 1 to entry: Mode 3 includes the use of cable assembly not permanently connected to the a.c supply network (case A and case B).

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 17409:2015.

20) Under preparation.

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

3.100
mode 4
connection of the EV to the a.c. or d.c. supply network (mains) utilizing a d.c. EV supply equipment or d.c. EV charging station using a control pilot function

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

3.101
non-externally chargeable HEV
HEV with a rechargeable energy storage system (RESS) that is not intended to be charged from an external electric energy source

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

3.102
non-isolated d.c. EV charging station
d.c. EV charging station with d.c. circuit on output side which is not electrically separated by at least basic isolation from the supply system

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

3.103
optimal alignment
alignment with the most efficient power transfer

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

3.104
overcurrent protection
protection intended to operate when the current is in excess of a predetermined value

[SOURCE: IEC 60050-195:1998, 448-14-26]

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

3.105
overload protection
protection intended to operate in the event of overload on the protected section

[SOURCE: IEC 60050-195:1998, 448-14-31]

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

3.106
pairing
process by which an EV is correlated with the unique dedicated primary device at which it is located and from which power will be transferred

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

3.107
plug
accessory having contacts designed to engage with the contacts of a socket-outlet, also incorporating means for the electrical connection and mechanical retention of flexible cables or cords

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

3.108
potential equalisation
electric connections of exposed conductive parts of the electric equipment to minimize differences in potential between these parts

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-4:2015.

3.109
primary device
device external to the EV that is the source of the MF-WPT, including all housings and covers

Note 1 to entry: When the EV is receiving power the primary device acts as the source of the power to be transferred.

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

3.110
propulsion system
combination of power source and powertrain for vehicle propulsion

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-2:2018.

3.111
protection area
volume in and around the vehicle that has homogeneous protection target requirements

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

3.112
protective barrier
part providing protection against direct contact from any usual direction of access

[SOURCE: IEC 60050-195:1998, 195-06-15, modified — optional prefix “(electrically)” removed]

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

3.113
protective conductor
PE
conductor provided for purposes of safety, for example protection against electric shock

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

3.114
protective enclosure
electrical enclosure surrounding internal parts of equipment to prevent access to hazardous live parts from any direction

[SOURCE: IEC 60050-195:1998, 195-06-14, modified — optional prefix “(electrically)” removed and “hazardous-live-parts” written as “hazardous live parts”]

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

3.115
pure fuel cell vehicle
pure FCV
FCV with only a fuel cell system as power source for vehicle propulsion

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 23828:2013.

3.116
rated capacity
supplier's specification of the total number of ampere hours that can be withdrawn from a fully charged battery pack or system for a specified set of test conditions such as discharge rate, temperature and discharge cut-off voltage

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 12405-4:2018, also defined in ISO 23274-1:2013, ISO 23274-2:2012 and ISO 23828:2013.

3.117
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: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[22], also defined in ISO 6469-2:2018, ISO 6469-3:2018, ISO 6469-4:2015, ISO 17409:2015, ISO/TR 11954:2008, ISO 23274-1:2013, ISO 23274-2:2012, ISO 23828:2013 and ISO/PAS 19295:2016.

3.118
reference energy consumption
quantity of electrical energy from the mains needed to recharge the traction battery, divided by the distance covered, after the vehicle has been driven through a specified test sequence

Note 1 to entry: The reference energy consumption is usually expressed in watt-hours per kilometre (Wh/km).

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 8714:2002.

3.119
reference level
levels of field strength or power density derived from the basic restrictions using worst case assumptions about exposure

Note 1 to entry: If the reference levels are met, then the basic restrictions will be complied with, but if the reference levels are exceeded, that does not necessarily mean that the basic restriction will not be met.

[SOURCE: IEC 62311]

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

3.120
reference range
distance covered by an electric vehicle over a designated test sequence on a fully charged traction battery to the end of the test sequence as defined by the end of test sequence criteria

Note 1 to entry: The reference range is usually expressed in kilometres (km).

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 8714:2002.

3.121
regenerative braking
braking with conversion of kinetic energy into electric energy for charging the RESS

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

3.122
reinforced insulation
insulation of hazardous live parts which provides protection against electric shock equivalent to double insulation

Note 1 to entry: Reinforced insulation may comprise several layers that cannot be tested singly as basic insulation or supplementary.

[SOURCE: IEC 61140:2016, 3.10.4]

Note 2 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.

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

3.123
residual current device
RCD
mechanical switching device or association of devices designed to make, carry and break currents under normal service conditions and to cause the opening of the contacts when the residual current attains a given value under specified conditions

Note 1 to entry: A residual current device can be a combination of various separate elements designed to detect and evaluate the residual current and to make and break current.

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 17409:2015.

3.124
RESS control unit
electronic device that controls functions of the RESS and that provides communication between the RESS and other vehicle controllers

EXAMPLE Battery control unit.

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[23].

3.125
RESS state of charge
RESS SOC
residual capacity of RESS available to be discharged

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

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO/TR 11954:2008.

3.126
RESS subsystem
any assembly of RESS components which stores energy

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[24].

3.127
ripple
set of unwanted periodic deviations with respect to the average value of the measured or supplied quantity, occurring at frequencies which can be related to that of components within a system

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

3.128
rupture
loss of mechanical integrity of an enclosure resulting in openings not fulfilling protection degree IPXXB according to ISO 20653

Note 1 to entry: Predetermined openings for venting are not considered as rupture.

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[25].

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

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

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

3.129
secondary device
device mounted on the EV, including all housings and covers, that captures the magnetic field sourced by the primary device

Note 1 to entry: When the EV is receiving power the secondary device transfers the power from the primary to the EV.

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

3.130
secondary device ground clearance
vertical distance between the ground surface and the lowest point of the secondary device

Note 1 to entry: The lower surface may not be planar, and may not be parallel to the ground surface.

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

3.131
sign of battery current
discharge current is specified as positive and the charge current as negative

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

3.132
socket-outlet
accessory having socket-contacts designed to engage with the contacts of a plug and having terminals for the connection of cables or cords

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

3.133
specific energy
amount of stored energy related to the battery pack or system mass

Note 1 to entry: The mass of battery pack or system includes the mass of the temperature conditioning system if any up to the point of a reversible attachment of the coolant lines or air ducts and the coolant mass.

Note 2 to entry: Specific energy is expressed in watt hours per kilogram (Wh/kg).

Note 3 to entry: Master publication in ISO/TC 22/SC 37: ISO 12405-4:2018.

3.134
speed uphill
highest average speed which the vehicle can maintain on a given slope over a distance of 1 km

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

3.135
standard charge (SCH) for top off
additional charge which eliminates possible SOC reduction after SCH at RT followed by thermal equilibration at a different temperature

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

3.136
standard plug and socket-outlet
plug and socket-outlet which meets the requirements of any IEC and/or national standard that provides interchangeability by standard sheets, excluding the specific EV accessories as defined in the IEC 62196 series.

Note 1 to entry: The standards IEC 60309–1, IEC 60309–2, and IEC 60884–1 define standard plugs and socket-outlets.

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 17409:2015.

3.137
state of charge
SOC
available capacity of a RESS or RESS subsystem expressed as a percentage of rated capacity

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[26], also defined in ISO 12405-4:2018 ("RESS or RESS subsystem" is replaced by "battery pack or system"), ISO 23274-1:2013, ISO 23274-2:2012 and ISO 23828:2013.

3.138
steady state
state of a system at which all state and output variables remain constant in time while all input variables are constant

[SOURCE: IEC 60050-351]

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

3.139
supplementary insulation
independent insulation applied in addition to basic insulation, for fault protection

[SOURCE: IEC 60050-195:1998, 195-06-07]

Note 1 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.

3.140
supplier
party that provides voltage class B component or system

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

party that provides RESS or RESS subsystems

EXAMPLE A RESS manufacturer

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[27].

3.141
supply device
off-board component assembly comprising the primary device, the supply power electronics and the supply device communication controller as well as the mechanical connections between the components necessary for wireless power transfer

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

3.142
supply equipment communication controller
SECC
entity which implements the communication to one or multiple EVCCs

Note 1 to entry: Functions of a SECC control input and output channels, data encryption, or data transfer between vehicle and SECC.

[SOURCE: ISO 15118-1]

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

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

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

3.143
supply power circuit
off-board component assembly comprising the supply power electronics and primary device as well as the mechanical connections between the components

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

3.144
supply power electronics
off-board electronics, including all housings and covers, that supply the electric power to the primary device

EXAMPLE PFC converter, DC-AC inverter, filter, impedance matching network.

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

3.145
system efficiency
efficiency from AC or DC power supply (input of the supply device) to the output of the EV device

Note 1 to entry: It is of no importance whether the output is connected to a device or directly to a battery.

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

3.146
test mass
mass of a vehicle prepared for a defined test procedure

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO/TR 11954:2008, also defined in ISO 8715:2001.

3.147
test mass of an electric vehicle
sum of the complete electric vehicle kerb mass plus an additional mass

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 8714:2002.

3.148
touch current
electric current passing through a human body or through livestock when it touches one or more accessible parts of cables or equipment

[SOURCE: IEC 60050-195:1998/AMD1:2001, 195-05-21, modified — "through livestock" replaces "through an animal body".]

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

3.149
transient
pertaining to or designating a phenomenon or a quantity which varies between two consecutive steady states during a time interval short compared with the time-scale of interest

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

3.150
upper voltage limit
maximum voltage of a voltage class B sub-class

Note 1 to entry: Maximum working voltages within a voltage sub-class are less than or equal to the voltage limit.

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO/PAS 19295:2016.

3.151
vehicle connector
part of a vehicle coupler integral with or intended to be attached to the cable assembly

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

3.152
vehicle coupler
means of enabling the manual connection of a flexible cable to an EV for the purpose of supplying electric energy to an EV

Note 1 to entry: It consists of two parts: a vehicle connector and a vehicle inlet.

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

3.153
vehicle inlet
part of a vehicle coupler incorporated in, or fixed to, an electric vehicle

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

3.154
vehicle isolation resistance monitoring system
system which periodically or continuously monitors the isolation resistance between live parts of voltage class B electric circuits and the electric chassis

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

3.155
vehicle power supply circuit
voltage class B electric circuit which includes all parts that are galvanically connected to the vehicle inlet (case B, case C) or the plug (case A) and that is operational when connected to an external electric power supply

Note 1 to entry: Case A, case B and case C are defined in IEC 61851-1.

Note 2 to entry: Case D, case E and Autoconnect Charging Device are defined in IEC 61851-23-1 (under preparation).

Note 3 to entry: Master publication in ISO/TC 22/SC 37: ISO 17409:2015, also defined in ISO 6469-2:2018 and ISO 6469-3:2018.

3.156
venting
release of excessive pressure intended by design

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[28)].

3.157
voltage class
classification of an electric component or circuit according to its maximum working voltage

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-3:2018, also defined in ISO 6469-1:—[29)].

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

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

3.158
voltage class A
classification of an electric component or circuit with a maximum working voltage of ≤30 V a.c. (rms) or ≤60 V d.c. respectively

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[30], also defined in ISO 12405-4:2018, ISO 17409:2015 and ISO 6469-4:2015.

3.159
voltage class B
classification of an electric component or circuit with a maximum working voltage of (>30 and ≤1 000) V a.c. (rms) or (>60 and ≤1 500) V d.c., respectively

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[31], also defined in ISO 12405-4:2018, ISO/PAS 19295:2016, ISO 17409:2015, ISO 6469-2:2018, ISO 6469-4:2015 and ISO/PAS 19363:2017.

3.160
voltage class B2
classification of an electric component or circuit with a maximum working voltage of (<50 and ≤1 000) V a.c.(rms) or (>75 and ≤1 500) V d.c., respectively

Note 1 to entry: For more details see ISO 6469-3:2018.

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[32].

3.161
voltage range
general term covering voltage sub-class, working voltages and deviations from working voltages

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

3.162
voltage sub-class
classification of an electric component or circuit with a d.c. voltage within the voltage class B

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

3.163
water depth
w
water depth level a vehicle is designed for operation according to the vehicle manufacturer's specification

Note 1 to entry: The vehicle manufacturer may consider the local environmental conditions where the vehicle is placed on the market.

Note 2 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-1:—[33].

3.164
working voltage
a.c. voltage (rms) or d.c. voltage that can occur in an electric system under 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.

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

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

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

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

3.165
X-capacitors
capacitors located between line conductors of different polarity

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-4:2015.

3.166
Y-capacitors
capacitors located between line conductor and electric chassis

Note 1 to entry: Master publication in ISO/TC 22/SC 37: ISO 6469-4:2015.

4 Abbreviations

The following abbreviated terms are used in Clause 3.

ADT	applicable driving test
BCU	battery control unit
CD state	charge-depleting state
CS state	charge-sustaining state
DUT	device under test
EMC	electromagnetic compatibility
EMF	electromagnetic field
EV	electrically propelled vehicle or electric vehicle
EVCC	EV communication controller
EVPC	EV power circuit
FCHEV	fuel cell hybrid electric vehicle
FCV	fuel cell vehicle
HEV	hybrid electric vehicle
ICE	internal combustion engine
IMN	impedance matching network
IP	degree of protection
MF-WPT	magnetic field wireless power transfer
NEDC	new european driving cycle
PE	protective conductor
PFC	power factor correction
PHEV	plug-in HEV
RCD	residual current device
RESS	rechargeable energy storage system

RT	room temperature
SCH	standard charge
SECC	supply equipment communication controller
SOC	state of charge
UDDS	urban dynamometer driving schedule
w	water depth

Annex A
(informative)

Topic specific list

A.1 General

This annex shows a tree structure and a topic specific list of the terms in Clause 3 for better understanding of the relationships between the terms.

A.2 Hierarchical tree structure

Table A.1 classifies the terms systematically.

Table A.1 — Hierarchical tree structure

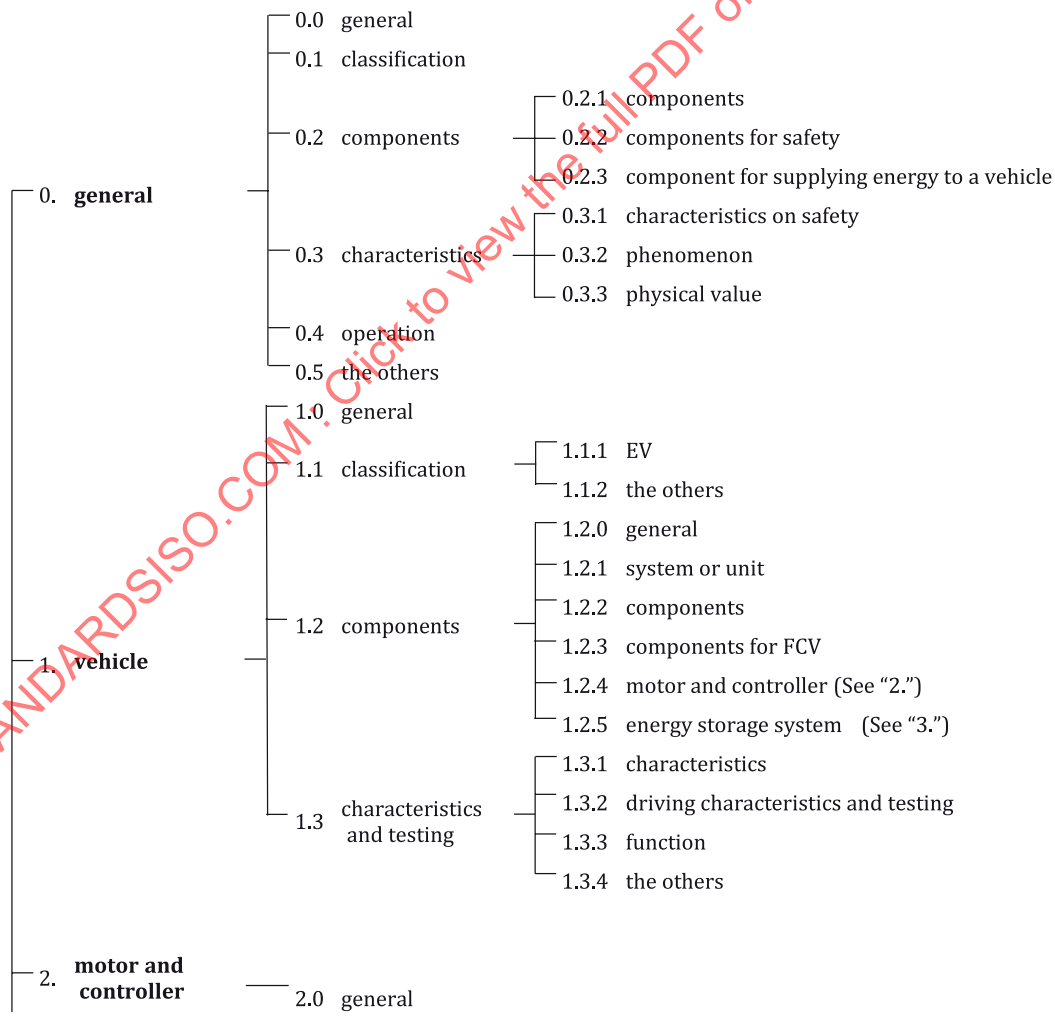
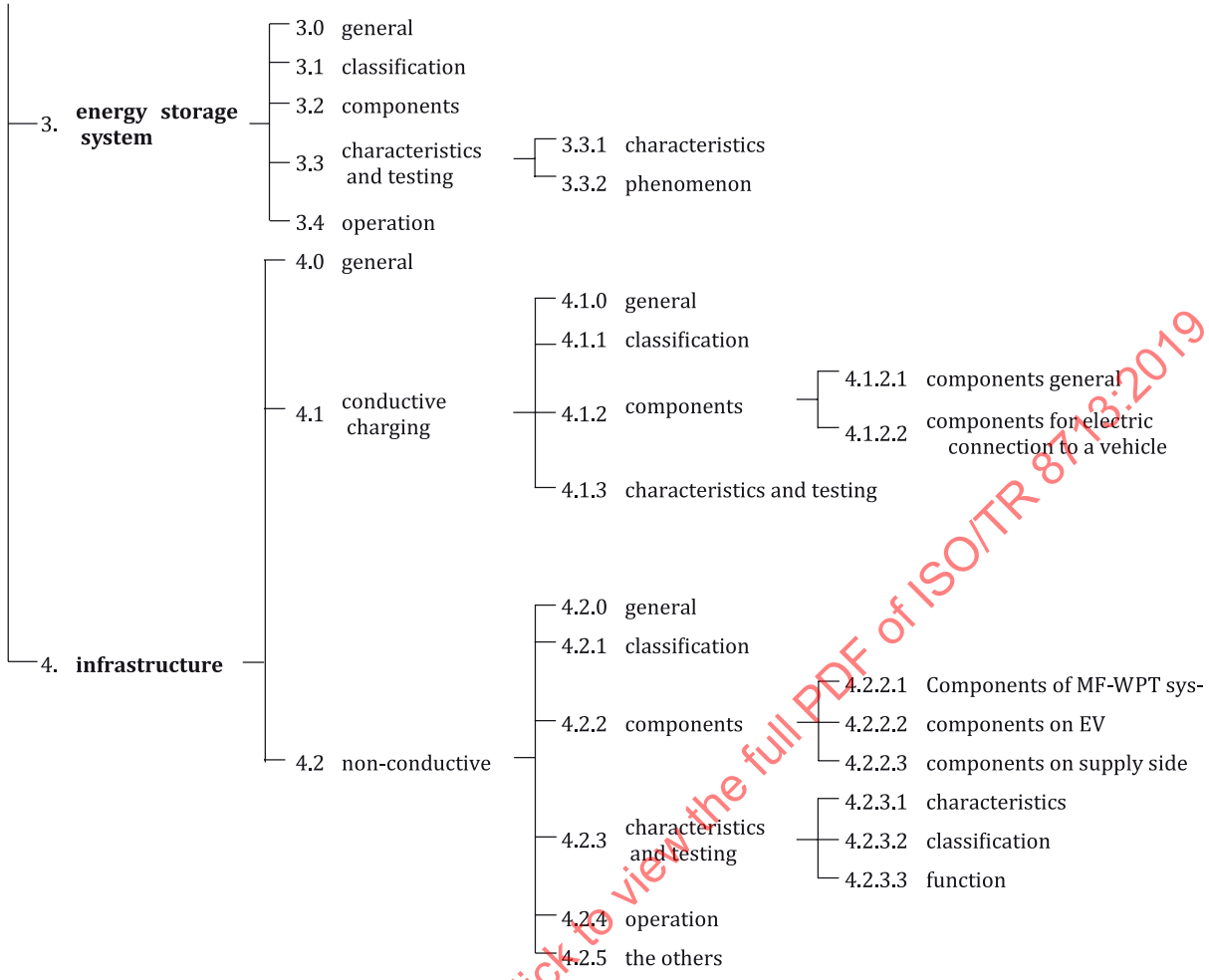


Table A.1 — Hierarchical tree structure *(continued)*



NOTE 1 Classification "1.2.4 motor and controller" is classified as "2. motor and controller".

NOTE 2 Classification "1.2.5 energy storage system" is classified as "3. energy storage system".

A.3 Topic specific list (systematic classification of the terms)

The terms are listed in hierarchical order according to the classification in the hierarchical tree structure.

0. general

0.0 general

3.164 working voltage

3.161 voltage range

0.1 classification

3.157 voltage class

3.158 voltage class A

3.159 voltage class B

3.160 voltage class B2

3.162 voltage sub-class

0.2 components

0.2.1 components, general

3.25 conductive part

3.26 conductively connected circuit

3.42 electric circuit

3.60 exposed conductive part

3.74 hazardous live part

3.83 line conductor

3.84 live conductor (line and neutral)

3.85 live part

3.165 X-capacitors

3.166 Y-capacitors

0.2.2 components for safety

3.112 protective barrier

3.113 protective conductor / PE

3.114 protective enclosure

0.2.3 component for supplying energy to a vehicle

3.152 vehicle coupler

0.3 characteristics and testing

0.3.1 characteristics on safety

3.7 basic insulation

3.139 supplementary insulation

3.122 reinforced insulation

3.38 double insulation

3.8 basic protection

3.34 degree of protection / IP

3.63 fault protection

3.104 overcurrent protection

3.105 overload protection

3.52 equipotential bonding

3.108 potential equalization

0.3.2 phenomenon

3.35 direct contact

3.45 electric shock

0.3.3 physical value

3.22 clearance

3.32 creepage distance

3.148 touch current

3.80 insulation resistance / isolation resistance

3.91 maximum operating voltage

0.4 operation

3.47 energized

0.5 the others

3.31 customer

3.140 supplier

3.73 hazard

3.127 ripple

1. vehicle

1.0 general

1.1 classification

1.1.1 EV

3.46 electrically propelled vehicle / EV

3.79 hybrid-electric vehicle / HEV

3.101 non-externally chargeable HEV

3.62 externally chargeable HEV

3.68 fuel cell hybrid electric vehicle / FCHEV

3.71 fuel cell vehicle / FCV

3.115 pure fuel cell vehicle / pure FCV

1.1.2 the others

3.12 bus

3.96 midi bus