
Identifikacija skladnosti vozil in infrastrukture - Grafični prikaz za informiranje porabnikov o električnem napajanju električnih vozil

Identification of vehicles and infrastructures compatibility - Graphical expression for consumer information on EV power supply

Kennzeichnung von elektrischen Strom für das Laden von Elektrofahrzeugen

Identification de la compatibilité des véhicules et des infrastructures - Expression graphique pour l'information des consommateurs sur l'alimentation pour véhicules électriques

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**Identification of vehicles and infrastructures compatibility
- Graphical expression for consumer information on EV
power supply**

Identification de la compatibilité des véhicules et des
infrastructures - Expression graphique pour
l'information des consommateurs sur l'alimentation
pour véhicules électriques

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

European foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Assembly Principle	9
5 General identifier requirements	10
5.1 Shape of identifier	10
5.2 Colour scheme for electrical interfaces	10
5.3 Size	10
5.4 Compatibility categorization	10
5.5 Durability	11
6 Placement of the label	11
6.1 General	11
6.2 Label location on connection points, vehicles and detachable cable assembly	11
6.2.1 Plug and socket interface	11
6.2.2 Vehicle coupler	11
6.3 Vehicle manuals and dealerships	11
7 Optional consumer information at national level	12
Annex A (normative) Identifier colour scheme definition	13
Annex B (normative) Table of labels	14
B.1 AC Charging	14
B.2 DC Charging	15
B.3 Others	16
Bibliography	17

European foreword

This document (prEN 17186:2017) has been prepared by Technical Committee CEN/TC 301 “Road vehicles”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

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Introduction

In accordance with Article 7 of the Directive 2014/94/EU, the EU Member States had to bring into force by 18 November 2016 the laws, regulations and administrative provisions necessary in order to ensure that user information on the compatibility of their vehicles with the fuels (covered by EN 16942:2016) or electricity recharging points is provided in motor vehicle manuals, at refueling and recharging points, as well as on motor vehicles and in motor vehicle dealerships in their territory.

As specified in the Article, this information has to be based on labelling provisions of ESO standards setting technical specifications of fuels. However, none of the labelling provisions of the existing European Standards for quality includes a graphical expression that meets the requirements of the Directive.

In a letter to CEN of 26 August 2015, the European Commission requested the work of CEN/TC 441 to aim at development and adoption of appropriate European Standard(-s) setting harmonized compatibility labelling specifications for individual fuels placed on the market. These provisions should include a graphical expression, including a colour coding scheme. The graphical expression should also be in line with the following requirements of Article 7 of Directive 2014/94/EU:

- a) to provide relevant, consistent and clear information as regards to those motor vehicles which can be regularly fuelled with compatible fuels placed on the market,
- b) to be simple and easy to understand;
- c) to be able to be placed in a clearly visible manner
 - 1) on corresponding fuel pumps and their nozzles at refuelling points,
 - 2) on or in the immediate proximity of fuel tanks' filler caps for vehicles, recommended and compatible with that fuel and in motor vehicle manuals.

More specifically for Electric Vehicles power supply, this should apply as follows:

- d) to provide relevant, consistent and clear information as regards to those EVs which can be charged at compatible charging stations placed on the market,
- e) to be simple and easy to understand,
- f) to be able to be placed in a clearly visible manner during normal use:

In a first step, as a standard has been created for only liquid and gas fuel labelling (EN 16942:2016), standard for electric fuel was missing. Consequently, CEN/TC 301 was requested for providing a new CEN standard dedicated to graphical expression for EV power supply.

This would allow industry and governments to use this new document as basis for implementation of Directive 2014/94/EU. Also, existing and future European Standards related to EVs that need to set requirements regarding graphical expression can refer to this Standard.

The development of this standard focused on vehicles placed on the market for the first time, which does not preclude the application of this standard also to vehicles already in circulation.

This document is not intended to replace any existing quality, safety or performance recommendations, marketing or branding communication currently featured in similar locations at charging stations, cable assemblies, EVs or vehicle manuals.

It complements European Standards for setting technical specifications of electrical energy and also for installation and commissioning of charging stations.

1 Scope

This European Standard lays down harmonized identifiers for power supply for electric road vehicles. The requirements in this standard are to complement the informational needs of users regarding the compatibility between the charging stations, the cable assemblies and the vehicles that are placed on the market. The identifier is intended to be visualized at charging stations, on vehicles, on cable assemblies, in EV dealerships and in consumer manuals as described in this document.

Power supply for EVs uses vehicle inlets, socket-outlets, connectors and plugs, as mentioned in FprEN 61851-1:2016 and EN 62196-1:2014.

This European Standard defines for each harmonized identifier the size, shape, colour and other information of relevance for compatibility recognition, as well as the location of placement.

This European Standard provides harmonized compatibility labelling across Europe and thus effectively supports the implementation of Article 7 of Directive 2014/94 / EU by EU Member States. The European Standard complements the information needs of an electric vehicle user arriving at a connecting point with respect to the connection of his electric vehicle. Indeed, the consumer needs to be able to easily distinguish the different types of electrical interfaces proposed, in addition to optional information like power levels and above all, to identify the correct interface of the connecting point compatible with his electric vehicle. The station identifier could concern the plug of the mobile cord in case of a socket outlet configuration, or directly concern the car inlet in case attached cable configuration.

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 16942, *Fuels - Identification of vehicle compatibility - Graphical expression for consumer information*

FprEN 61851-1:2016, *Electric vehicle conductive charging system - Part 1: General requirements (IEC/FDIS 61851-1:2016)*

EN 62196-1:2014, *Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 1: General requirements (IEC 62196-1:2014)*

ISO 16750-4, *Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 4: Climatic loads*

ISO 16750-5, *Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 5: Chemical loads*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16942 and the following apply.

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 <http://www.iso.org/obp>

prEN 17186:2017 (E)

3.1

cable assembly

piece of equipment that is used to establish the connection between the electric vehicle and the electric vehicle supply equipment

Note 1 to entry: A cable assembly may be either fixed to and included in one of these devices, or detachable. It includes the flexible cable, the vehicle connector and/or plug that are required for proper connection.

[SOURCE: EN 62196-1:2014]

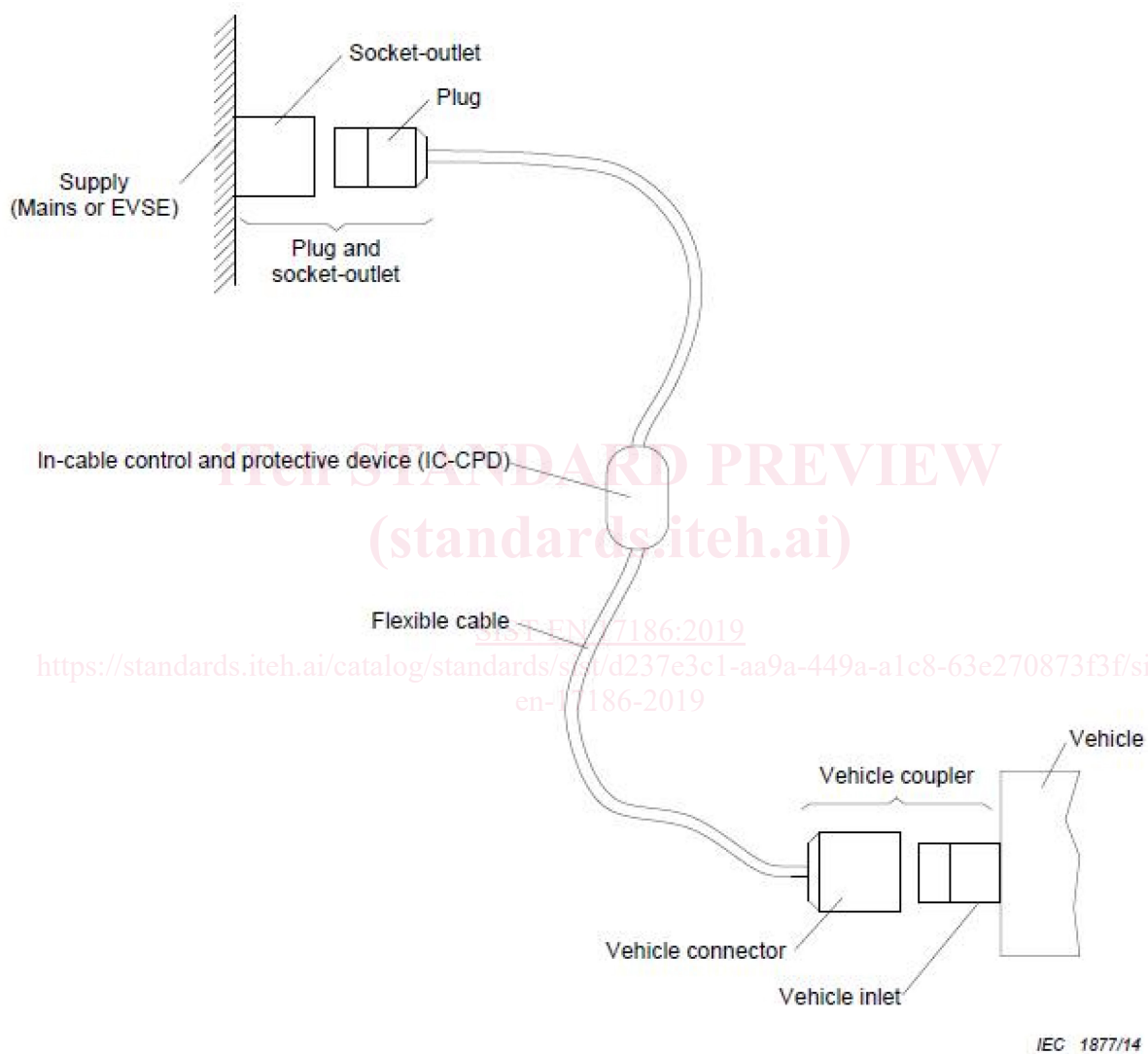


Figure 1 — Cable assembly

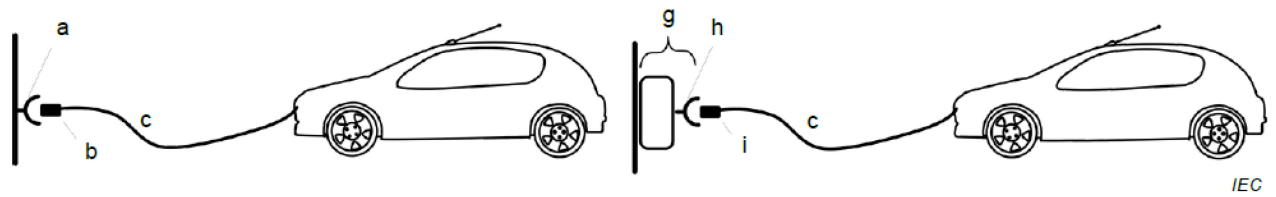
3.1.1

cable assembly, case A

connection of an EV to the supply network with a plug and cable permanently attached to the EV

Note 1 to entry: The cable assembly is part of the vehicle.

[SOURCE: FprEN 61851-1:2016]

**Key**

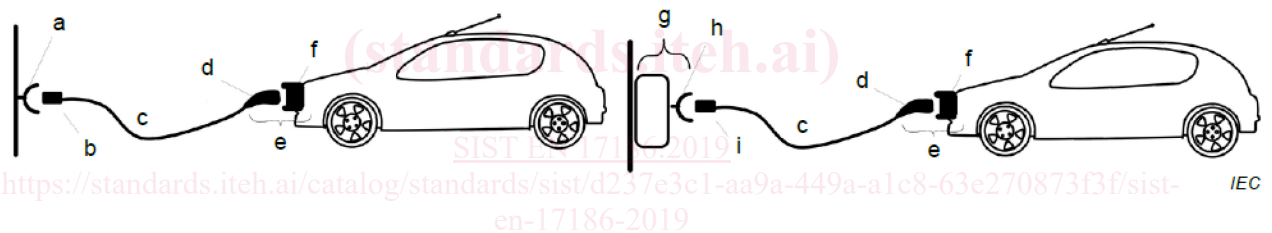
- | | |
|------------------|---------------------|
| a) socket-outlet | g) charging station |
| b) plug | h) EV socket-outlet |
| c) cable | i) EV plug |

Figure 2 — Cable assembly, case A**3.1.2****cable assembly, case B**

connection of an EV to a supply network with a cable assembly detachable at both ends

Note 1 to entry: The detachable cable assembly is not part of the vehicle or the charging station.

[SOURCE: FprEN 61851-1:2016]

**Key**

- | | |
|----------------------|---------------------|
| a) socket-outlet | f) vehicle inlet |
| b) plug | g) charging station |
| c) cable | h) EV socket-outlet |
| d) vehicle connector | i) EV plug |
| e) vehicle coupler | |

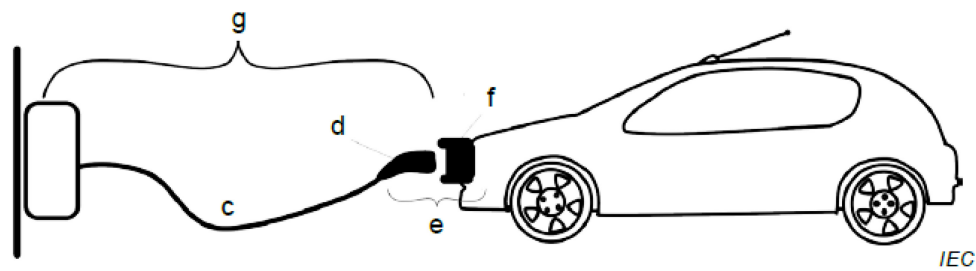
Figure 3 — Cable assembly, case B**3.1.3****cable assembly, case C**

connection of an EV to a supply network utilizing a cable and vehicle connector permanently attached to the EV charging station

Note 1 to entry: Only Case C is applicable for mode 4 (see FprEN 61851-1).

Note 2 to entry: The cable assembly is part of the EV charging station.

[SOURCE: FprEN 61851-1:2016]

**Key**

- | | |
|----------------------|---------------------|
| c) cable | f) vehicle inlet |
| d) vehicle connector | g) charging station |
| e) vehicle coupler | |

Figure 4 — Cable assembly, case C**3.2****charging station**

EV supply equipment intended to supply current to an EV

[SOURCE: EN ISO 17409:2017, definition 3.12]

3.3**Electric Road Vehicle (EV)**

any vehicle propelled by an electric motor drawing current from a RESS intended primarily for use on public roads

[SOURCE: EN ISO 17409:2017, definition 3.19]

3.4**identifier**

fraphical expression of compatibility consisting of shape and symbol

3.5**label**

sticker or permanent mark carrying the identifier which is attached to the vehicle or the charging station or the cable

3.6**plug and socket-outlet**

means enabling the connection at will of a flexible cable to fixed wiring

Note 1 to entry: It consists of two parts: a socket-outlet and a plug.

3.7**plug**

part of a plug and a socket-outlet integral with or intended to be attached to one flexible cable connected to the electric vehicle or to a vehicle connector

Note 1 to entry: It may include mechanical, electrical or electronic components and circuitry, which perform control functions.