



# SLOVENSKI STANDARD

## SIST EN 17186:2019

01-maj-2019

---

### 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

Identifikation von Fahrzeug- und Infrastrukturkompatibilität - Grafische Darstellung von Kundeninformationen für die Energieversorgung von Elektrofahrzeugen

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

<https://standards.iteh.ai/catalog/standards/sist/d237e3c1-aa9a-449a-a1c8-63e270873f3f/sist-en-17186-2019>

**Ta slovenski standard je istoveten z: EN 17186:2019**

---

#### **ICS:**

43.120      Električna cestna vozila      Electric road vehicles

**SIST EN 17186:2019**

**en,fr,de**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 17186:2019

<https://standards.iteh.ai/catalog/standards/sist/d237e3c1-aa9a-449a-a1c8-63e270873f3f/sist-en-17186-2019>

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 17186**

March 2019

ICS 43.120

English Version

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

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

Identifikation von Fahrzeug- und  
Infrastrukturkompatibilität - Grafische Darstellung von  
Kundeninformationen für die Energieversorgung von  
Elektrofahrzeugen

This European Standard was approved by CEN on 2 December 2018.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

| <b>Contents</b>   | <b>Page</b> |
|---|-------------|
| European foreword.....  | 3           |
| Introduction .....  | 4           |
| 1 Scope.....  | 5           |
| 2 Normative references.....   | 5           |
| 3 Terms and definitions .....   | 5           |
| 4 Assembly Principle.....   | 10          |
| 5 General identifier requirements .....   | 10          |
| 5.1 Shape of identifier.....  | 10          |
| 5.2 Colour scheme for electrical interfaces .....   | 11          |
| 5.3 Size.....   | 11          |
| 5.4 Compatibility categorization .....  | 11          |
| 5.5 Durability .....  | 11          |
| 6 Label description.....  | 12          |
| 6.1 General.....  | 12          |
| 6.2 Basic label with mandatory identifier content.....  | 12          |
| 6.2.1 Content of the label.....   | 12          |
| 6.2.2 Design of the label.....  | 12          |
| 6.3 Full label with mandatory identifier and possibly optional information.....                     | 12          |
| 6.3.1 Content of the label.....   | 13          |
| 6.3.2 Design of the label.....  | 13          |
| 7 Placement of the label .....  | 14          |
| 7.1 General.....  | 14          |
| 7.2 Label location on EV charging stations, electric vehicles and detachable cable<br>assembly..... | 14          |
| 7.2.1 EV charging station.....  | 14          |
| 7.2.2 Electric vehicle .....  | 15          |
| 7.2.3 Detachable cable assembly.....  | 15          |
| 7.3 Vehicle manuals and dealerships.....  | 15          |
| Annex A (normative) Colour scheme of identifiers.....   | 16          |
| Annex B (normative) Table of labels.....  | 17          |
| B.1 AC Charging .....   | 17          |
| B.2 DC Charging .....   | 18          |
| B.3 Others.....   | 19          |
| Annex C (informative) Examples of labels .....  | 20          |
| Bibliography.....   | 21          |

## European foreword

This document (EN 17186:2019) has been prepared by Technical Committee CEN/TC 301 “Road vehicles”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2019, and conflicting national standards shall be withdrawn at the latest by September 2019.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 17186:2019](https://standards.iteh.ai/catalog/standards/sist/d237e3c1-aa9a-449a-a1c8-63e270873f3f/sist-en-17186-2019)

<https://standards.iteh.ai/catalog/standards/sist/d237e3c1-aa9a-449a-a1c8-63e270873f3f/sist-en-17186-2019>

## EN 17186:2019 (E)

### 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, published by CEN/TC 441) 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. For electric vehicles, the provisions should include a graphical expression, with a colour coding scheme. However, none of the labelling provisions of the existing European Standards for quality includes a graphical expression that meets the requirements of the Directive. This graphical expression should be in line with the requirements detailed in Article 7 of Directive 2014/94/EU:

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

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 proposed electrical interfaces, in order to identify the correct interface of the connecting point compatible with his electric vehicle, and also to give optional information like power levels.

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 EV 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 EV charging stations.

The implementation of this European Standard on the components of the EV charging system ensures the consumer a guarantee of mechanical, electrical and electronic compatibility for the two interfaces:

- connection to the EV,
- connection to the EV charging station.

This European Standard makes it possible to take a decisive step forward in the interoperability of EV charging systems. Nevertheless, the full interoperability will rely on a rigorous application of all relevant standards for the system, the components and the communication of the charging system.

## 1 Scope

This document 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 EV charging stations, the cable assemblies and the vehicles that are placed on the market. The identifier is intended to be visualized at EV 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 EN IEC 61851-1:— and EN 62196-1:2014.

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

The station side identifier gives unmistakable compatibility information with either the plug of the cable assembly in case of a socket outlet configuration, or the vehicle inlet in case of 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*

EN IEC 61851-1:—, *Electric vehicle conductive charging system — Part 1: General requirements (IEC 61851-1:2017)*<sup>1</sup>

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>

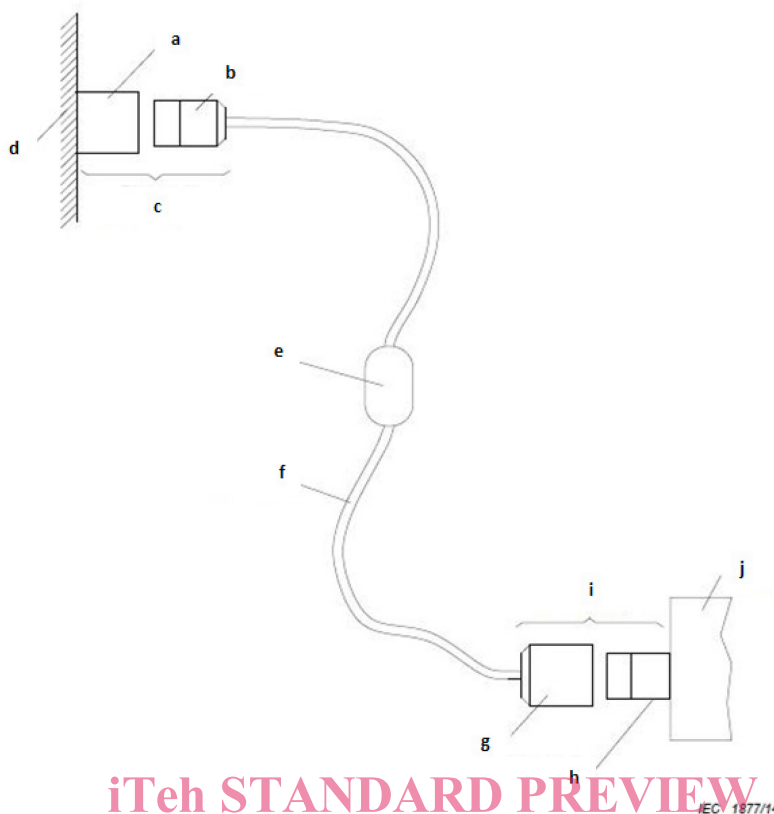
### 3.1

#### **cable assembly**

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

---

<sup>1</sup> Under preparation. Stage at time of publication: FprEN 61851-1:2016.



### Key

- |  |                      |
|--|----------------------|
| a) socket-outlet                                   | f) flexible cable    |
| b) plug  | g) vehicle connector |
| c) plug and socket-outlet                          | h) vehicle inlet     |
| d) supply (mains or EVSE)                          | i) vehicle coupler   |
| e) in-cable control and protective device (IC-CPD) | j) vehicle           |

**Figure 1 — Cable assembly**

[SOURCE: EN 62196-1:2014]

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 and an IC-CPD when applicable.



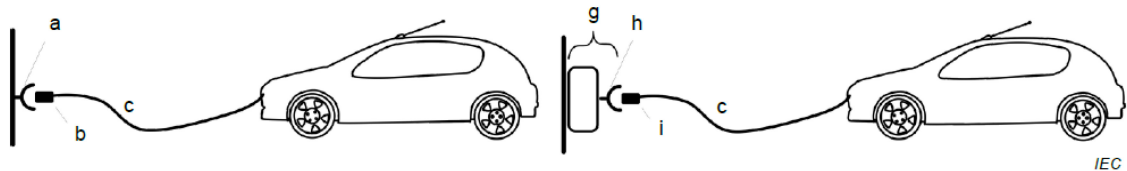
### 3.1.1

#### 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: EN IEC 61851-1:—, 3.1.10]



#### Key

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

**Figure 2 — Case A connection**

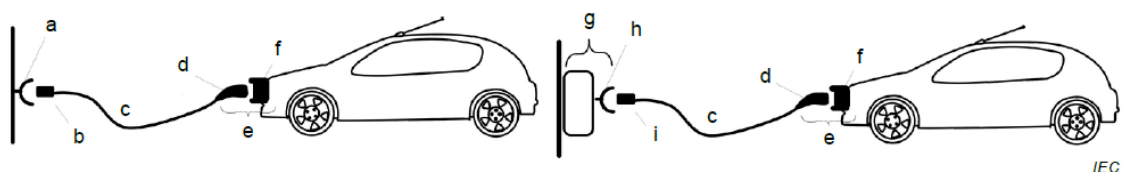
### 3.1.2

#### 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 EV charging station.

[SOURCE: EN IEC 61851-1:—]



#### Key

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

**Figure 3 — Case B connection**

Note 2 to entry: The cable can include an IC-CPD when applicable.

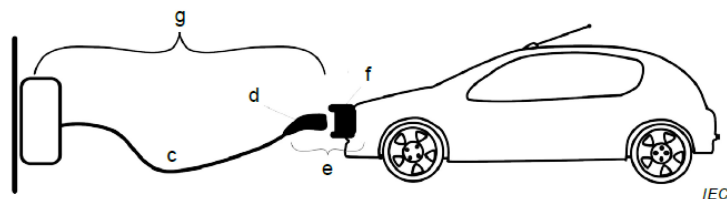
**EN 17186:2019 (E)****3.1.3****case C**

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 EN IEC 61851-1:—).

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

[SOURCE: EN IEC 61851-1:—]

**Key**

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

**Figure 4 — Case C connection**  
(standards.iteh.ai)

**3.2****EV charging station**

stationary part of EV supply equipment connected to the supply network

Note 1 to entry: For case C, the cable assembly is part of the EV charging station.

[SOURCE: EN IEC 61851-1:—, 3.1.5]

**3.3****electric vehicle****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**

graphical expression of compatibility consisting of shape and symbol

[SOURCE: EN 16942]

**3.5****label**

sticker or permanent mark carrying the identifier and possibly optional information which is attached to the vehicle or the EV charging station or the cable assembly

Note 1 to entry: this label could also be used for information purposes (e.g navigation system, internet).

**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.

[SOURCE: EN 62196-1:2014, 3.2]

**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

[SOURCE: EN 62196-1]

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

**3.8****rechargeable energy storage system****RESS**

system that stores energy for delivery of electric energy and which is rechargeable

[SOURCE: ISO 6469-1:2009, 3.16]

**3.9****socket-outlet**

part of a plug and a socket-outlet intended to be installed with the fixed wiring or incorporated in equipment

[SOURCE: EN 62196-1:2014, 3.2.2]

**3.10****symbol**

expression by a combination of letters, numbers or pictorials

[SOURCE: EN 16942]

**3.11****vehicle coupler****electric vehicle coupler**

means enabling the connection at will of a flexible cable to an electric vehicle

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

[SOURCE: EN 62196-1:2014, 3.3]

**3.12****vehicle connector****electric vehicle connector**

part of a vehicle coupler integral with, or intended to be attached to, one flexible cable

[SOURCE: EN 62196-1:2014, 3.3.1]

ITEH STANDARD PREVIEW  
(standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/d237e3c1-aa9a-449a-a1c8-63e270873f3f/sist-en-17186-2019>