
**Road vehicles — Information for first
and second responders —**

**Part 1:
Rescue sheet for passenger cars and
light commercial vehicles**

*Véhicules routiers — Information pour les premiers et seconds
intervenants —*

*Partie 1: Fiche de secours pour véhicules particuliers et pour véhicules
utilitaires légers*



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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 36, *Safety and impact testing*.

This second edition cancels and replaces the first edition (ISO 17840-1:2015), which has been technically revised.

The main changes are as follows:

- replacing the pictograms with a reference to the pictograms in ISO 17840-3:2019, Annex B;
- removing the fixed legend of pictograms on front page of rescue sheet with a legend consisting of the pictograms used in the respective rescue sheet, or optionally providing the legend in an alternative way in an electronic application;
- replacing Annex E with [Annex C](#) providing specified headings for additional page(s) of rescue sheet, linking to emergency response guide information according to ISO 17840-3;
- addition of provision for communication of the propulsion identification according to ISO 17840-4 in the rescue sheet.

A list of all parts in the ISO 17840 series can be found on the ISO website.

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 provides necessary and useful information about a vehicle involved in an accident to support the rescue team (or first responders) extricating the occupants as fast and as safely as possible. The information is provided to ensure that rescue teams are aware of special design elements and position of components to be considered.

Information used for training, where the rescue teams have time to go into the details and learn the generic approach and where to find and how to read the specific information that will be needed in case of an accident are not in the scope of this document.

This document has been created in order to cover the following types of vehicle propulsion:

- conventional powertrains (diesel, gasoline);
- liquefied petroleum gas (LPG);
- compressed natural gas (CNG);
- electric;
- hybrid electric;
- fuel cell electric.

NOTE 1 A full set of pictograms for use in the rescue sheet is provided in ISO 17840-3.

NOTE 2 The template for structuring in-depth rescue information is given in ISO 17840-3.

NOTE 3 Information related to propulsion energy identification is given in ISO 17840-4.

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Road vehicles — Information for first and second responders —

Part 1:

Rescue sheet for passenger cars and light commercial vehicles

1 Scope

This document defines the contents and the layout of the rescue sheet providing necessary and useful information about a vehicle involved in an accident to support the rescue team extricating the occupants as fast and as safe as possible.

This document is applicable to passenger cars and light commercial vehicles according to ISO 3833.

The identification of the vehicle and of the model through a database using the license plate, the VIN number, an automatic emergency call system (e.g. eCall) or other identifiers (e.g. bar code or QR code) is not covered by this document.

The rescue process or the process of handling the rescue sheets is not covered by this document.

This document does not cover information related to education and training for rescue teams.

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.

ISO 17840-3:2019, *Road vehicles — Information for first and second responders — Part 3: Emergency response guide template*

ISO 17840-4, *Road vehicles — Information for first and second responders — Part 4: Propulsion energy identification*

3 Terms and definitions

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

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

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

3.1

airbag

airbag assembly

airbag module consisting of at least an inflator and a bag for all airbag applications

Note 1 to entry: Applications include, for example, front airbag, seat-mounted side airbag, knee airbag, inflatable curtain, inflatable seat belt, airbag as part of *pedestrian protection active system* (3.14).

3.2

stored gas inflator

airbag inflator

device to create the gas (e.g. pyrotechnic), or storage for gas, used to inflate *airbags* (3.1) or other protection devices

Note 1 to entry: The term is used when necessary in conjunction with protection systems where the inflator is not an integrated part of the *airbag assembly* (3.1), e.g. for inflatable curtain, knee airbag, or *pedestrian protection active system* (3.14).

3.3

low-voltage battery

LV battery

power source for the *low-voltage system* (3.13)

Note 1 to entry: The voltage of the low-voltage battery can be for example 12 V, 24 V or 48 V.

3.4

compressed natural gas

CNG

natural gas which has been compressed and stored for use as a vehicle fuel

[SOURCE: ISO 15500-1:2015, 3.2]

3.5

fuel tank

tank containing liquid fuel (e.g. gasoline or diesel) under normal atmospheric pressure

3.6

gas tank

tank containing pressurised gas (e.g. CNG or LPG)

3.7

gas strut

pressurised device designed to actuate hatch, hood, door, trunk lid, or active head restraints

Note 1 to entry: This device can be of danger when directly cut during an extrication or put into pressure during a fire.

Note 2 to entry: This device can be triggered by the SRS control unit.

3.8

preloaded spring

mechanically compressed device designed to actuate hatch, hood, door, trunk lid, or active head restraints

Note 1 to entry: This device can be of danger when directly cut during an extrication.

Note 2 to entry: This device can be triggered by the SRS control unit.

3.9

high-voltage system

HV system

class B voltage system

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

[SOURCE: ISO 6469-4:2015, 3.18, modified — The terms "high-voltage system" and "HV system" have been added.]

3.9.1**high-voltage battery**

HV battery

traction battery for vehicle *high-voltage system* (3.9)

Note 1 to entry: The traction system can consist of one or several batteries also referred to as HV battery pack(s).

3.9.2**fuse box disabling high voltage**box containing fuses or devices for disabling the vehicle *high-voltage system* (3.9)**3.9.3****high-voltage disconnect**

HV disconnect

feature for disabling the vehicle *high-voltage system* (3.9)

Note 1 to entry: High-voltage disconnect can be a service plug or other features specified by the vehicle manufacturer.

3.9.4**high-voltage power cable**

high-voltage component

HV power cable

HV component

cable or component for vehicle *high-voltage system* (3.9)**3.10****left-hand drive**

LHD

left position of the steering wheel in the vehicle

3.11**right-hand drive**

RHD

right position of the steering wheel in the vehicle

3.12**liquefied petroleum gas**

LPG

mixture of light hydrocarbons, gaseous under normal atmospheric conditions which can be liquefied by increased pressure or decreased temperature, the main components of which are propane, propane, butane, and butane isomers

[SOURCE: ISO 20826:2006, 3.12]

3.13**low-voltage system**

LV system

class A voltage system

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

[SOURCE: ISO 6469-4:2015, 3.17]

3.14**pedestrian protection active system**

protection system designed to actively (e.g. pyrotechnically) deploy parts of the vehicle in order to mitigate the injury outcome in case of a collision with a pedestrian

3.15

pictogram

graphical composition that may include a symbol plus other graphic elements, such as a border, background pattern, or colour that is intended to convey specific information

[SOURCE: ISO 11014:2009, 3.10]

3.16

reinforcement

component in the vehicle architecture intended to absorb energy or strengthen the structure that can influence the rescue process

3.17

roof cutting point

preferred area at which the roof can be cut

3.18

safety valve

shut-off valve, pressure relief device, etc. on the *gas tank* ([3.6](#))

3.19

seat belt pretensioner

mechanism to pretension the seat belt in an impact, included in the seat belt retractor or mounted to buckle or lap-belt anchor point

3.20

SRS control unit

supplementary restraint system control unit

control unit used for the decision of triggering the supplementary restraint systems

3.21

ultra-capacitor HV

high-voltage source of energy that can be used in addition to the conventional *low-voltage battery* ([3.3](#)) or the *high-voltage battery* ([3.9.1](#))

3.22

ultra-capacitor LV

low-voltage source of energy that can be used in addition to the conventional *low-voltage battery* ([3.3](#)) or the *high-voltage battery* ([3.9.1](#))

3.23

emergency response guide

ERG

specific information allowing responders to take the appropriate actions in an emergency situation with regard to a certain technology or design principles

Note 1 to entry: The ERG describes first and/or second response operations, and related warnings and cautions, for a specific vehicle model, to a family of similar vehicle models, or to a certain type of vehicle technology in general.

4 Pictograms for components to be considered

4.1 Colour coding principles

Colour codes according to [Table 1](#) are applied in this document.

Table 1 — Colour coding principles

Colour	RGB code ^a	Components/functions
Yellow	RGB: 255,255,0	Low voltage (class A voltage) electrical system/components, including SRS control unit
Orange	RGB: 255,165,0	High voltage (class B voltage) electrical system/components
Blue	RGB: 77,77,255	Occupant protection system, e.g. airbags
Purple	RGB: 152,43,143	Seat belt pretensioner
Red	RGB: 255,0,0	Surrounding colour for triggered systems e.g. airbag, airbag assembly, stored gas inflator, a triggered preloaded spring / gas strut, or a non-triggered gas strut
Lime green	RGB: 0,255,0	Gas, liquid and pre-tensioned spring components
Sea green	RGB: 0,128,128	High strength zones
Grey	RGB: 127,127,127	Liquid group 1 (diesel, bio diesel, ...) tank/lines
Dark red	RGB: 139,0,0	Liquid group 2 (petrol/gasoline, ethanol, ...) tank/lines
Green	RGB: 0,176,80	Gas tank/lines (generic)
White	RGB: 255,255,255	Cryogen gas group (LNG, ...) tank/lines
Light blue	RGB: 0,176,240	Hydrogen tank/lines
Purple	RGB: 204,0,204	Air-condition components/lines
Brown	RGB: 183,120,29	Oil tank/lines
White	RGB: 255,255,255	Air tank

^a RGB colour components as expressed in terms of digital 8-bit per channel (from 0 to 255).

NOTE RGB colour components are also given in ISO 17840-3 for the respective pictogram.

4.2 Pictogram for rescue sheet application

Components/functions/dangers to be considered during the rescue procedure are represented by dedicated pictograms. These pictograms are used:

- to indicate the location of the respective components/functions in the vehicle, in conjunction with the rescue sheet illustration; and
- to communicate a specific function or danger, for use under the rescue sheet additional pages headings and ERG headings.

Applicable pictograms from ISO 17840-3:2019, Annex B shall be used. The principles in ISO 3864-1 should be followed to ensure that pictograms have the appropriate quality to be readable and understood.

It is possible to combine vehicle variants using liquid group 1 and 2 (as shown in [Table 1](#)) in the same rescue sheet. In this case, the propulsion energy labels for both fuels shall be presented and the liquid group 2 colour scheme shall be used in the vehicle views.

All technologies (for propulsion, safety, material, etc.) that are not directly mentioned in this document should be treated as close as possible to the known/mentioned technologies.

5 Layout and contents of a rescue sheet

5.1 General requirements

As applicable, all information of relevance for the rescuing actions shall be shown in the rescue sheet.

All components and functions that may expose the vehicle occupants or the rescue personnel to risks during the rescue process (including e.g. cutting of the vehicle) shall be identified and shown in the

rescue sheet. Devices/measures to inhibit a dangerous state (e.g. high voltage disconnect) shall also be shown.

Pictograms for use on the front page and additional pages shall be selected from those given in ISO 17840-3:2019, Annex B.

Information on propulsion energy shall be shown in accordance with ISO 17840-4.

The technology of the HV battery shall be stated (e.g. Li-Ion or Ni-MH), and the voltage may be mentioned, because the actions in case of a rescue can be different. For vehicles with gas propulsion the gas type shall be stated (e.g. LNG, CNG, H₂).

The rescue sheet can be created as one sheet covering all vehicle variants and body shapes and drives (e.g. 2-door, sedan 4-door, 4-door coupe, convertible, sedan, station wagon, LHD and RHD). There may be instances where the position of the components differs from one vehicle variant to another. In these instances, it will be necessary to create additional rescue sheets to cover these differences, or by other means ensure that an unambiguous position information is provided in the rescue sheet.

NOTE Additional information related to this document can be found at the ISO Standards Maintenance Portal: <https://standards.iso.org/iso/17840/-1/>.

5.2 Front page

5.2.1 General

The front page of the rescue sheet is mandatory and shall be designed according to [Annex A](#) or [Annex B](#).

This includes the header, the top view, the side view, and the legend which show all relevant components/functions to be considered. The front page shall show the maximum configurations and equipment possible for the vehicle.

5.2.2 Header, first part

The header consists of two parts. First part of header shall include:

- logo(s) of the vehicle brand,

NOTE 1 It is important to consider the applicable copyright rules.

- name of manufacturer and vehicle model as well as the body type(s) covered by the rescue sheet,

NOTE 2 Vehicle model name can include regional information as decided by the creator of the rescue sheet.

- year of vehicle model production, start to year of production end, when applicable,

NOTE 3 Applicability is decided by the creator of the rescue sheet.

- label(s) for identification of the propulsion energy (preferred location),

NOTE 4 Alternative location on page 1 can be used provided the label is easily identifiable.

- steering position covered by the rescue sheet:

- By default, the rescue sheet covers both steering wheel positions. If there are no other differences between left-hand drive (LHD) and right-hand drive (RHD) vehicles except the switch of the airbags between the driver and the front passenger(s), there is no extra information to communicate. In this case, the LHD and RHD steering position pictograms should not be shown.

- In case there are other differences, it is necessary to have two rescue sheets; one for LHD, one for RHD, in order to alert the reader about the specific differences between each drive configuration.
- When the RHD pictogram is shown, it means that the rescue sheet applies to right-hand drive vehicles only.
- When the LHD pictogram is shown, it means that the rescue sheet applies to left-hand drive vehicles only.
- In case the vehicle model is available only in one of the configurations (LHD or RHD), the LHD or RHD steering position pictogram should not be shown.

NOTE 5 This first part of the header can be in a colour band linked to the colour of the brand.

5.2.3 Header, second part

The second part of header consists of two perspective pictures of the vehicle from the front and from the back in the position as defined in [Annexes A](#) and [B](#).

NOTE If needed for showing additional vehicle specifics, e.g. wing doors, a third view can be added.

A double-framed rectangle shall be used to alert the rescue teams of a zone or components requiring special attention. The need for this special attention is linked to an uncommon technology/unusual location of a specific component, uncommon/unusual meaning not frequently found in the vehicle fleet.

The double-framed rectangle can be used in any of the car views, as decided by the creator of the rescue sheet.

The reasons for the double-framed rectangle shall be further explained in the additional pages (see [Annex C](#)), possibly with a reference or link to the related heading. [Figure 1](#) shows a possible application of the double-framed rectangle (in the side view), linking to the additional pages.

EXAMPLE 1 There is a specific zone requiring special attention when cutting in order to access the occupants, as further described under heading 4 in the additional pages.

EXAMPLE 2 There is a specific equipment or material not covered by an existing pictogram, and it is related to heading 6 in the additional pages.

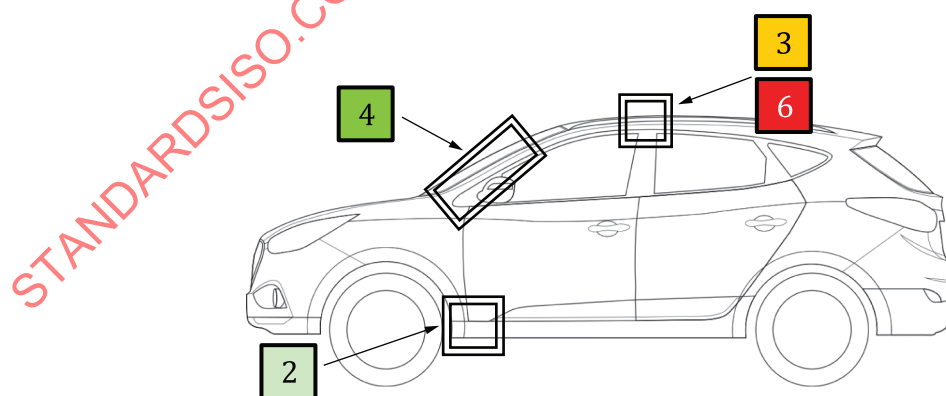


Figure 1 — Example of referencing double-frame rectangles to additional pages (side view)

5.2.4 Top view

The top view of the vehicle shall show the shapes of the vehicles and the shapes of doors, windows, bonnet and boot in black lines. The creator of the rescue sheet decides regarding clarity which components/functions will be placed in the top view. The placement of the top view is defined in [Annexes A](#) and [B](#).

Transparency should be used to show when one component is behind another in the top view.

NOTE 1 Expected components in the top view are: airbag assemblies, stored gas inflator, seat belt pretensioners, SRS control unit, triggered or non-triggered gas struts and/or preloaded springs, low-voltage and/or high-voltage batteries, high-voltage power cables and components, fuel or gas tanks and lines, safety valves, high-voltage disconnect, fuse box disabling high voltage, ultra-capacitors (LV or HV), pedestrian protection active system, roof cutting point.

The double-framed rectangle according to 5.2.3 can be applied in the top view.

The voltage and technology (e.g. Li-Ion, Ni-MH etc.), in this order, shall be indicated in a text box for low voltage batteries with a voltage greater than 24 V and less than or equal to 60 V, and for HV batteries. The colour of the text box shall match the colour code of the pictogram (yellow for LV batteries and orange for HV batteries). The text box shall be visually linked to the pictogram, see Figure 2.

NOTE 2 The battery voltage and technology are mentioned, because the actions in case of a rescue can be different.

NOTE 3 The visual link between the text box and the pictogram can be shown in the top and/or side view.

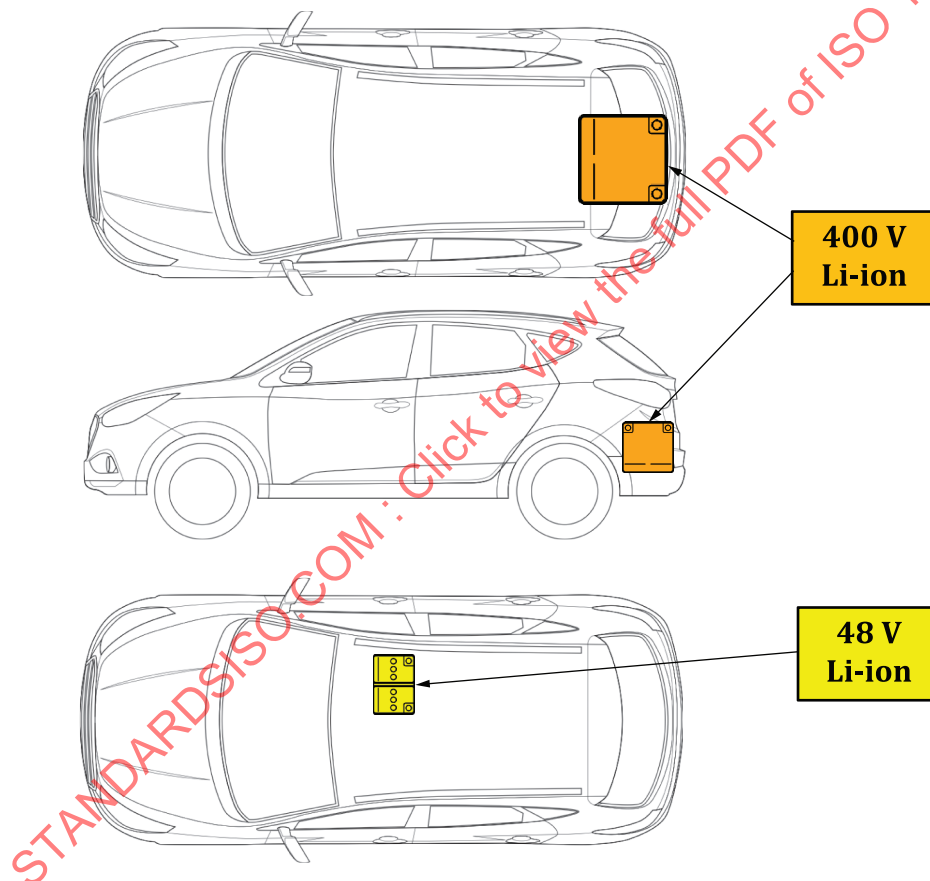


Figure 2 — Battery voltage and technology indication

For cars with gas propulsion, the gas type shall be stated (e.g. LPG/CNG).

It can be necessary to place a component only in the top or the side view. The aim should be to place all components in the top view, except the structure elements for the reinforcement of the vehicle safety cell.

5.2.5 Side view

The side view of the vehicle shall show the shapes of the vehicle and the shapes of doors, windows, bonnet, and boot in black lines. The creator of the rescue sheet decides regarding clarity which

components/functions will be placed in the side view. The placement of the side view is defined in [Annexes A](#) and [B](#).

Transparency should be used to show when one component is behind another in the side view.

The double-framed rectangle according to [5.2.3](#) can be applied in the side view.

It can be necessary to place a component only in the top or the side view. The aim should be to place components in the side view only if the vertical location adds valuable information (e.g. seat belt pretensioner). The structure elements for the door reinforcement are optional.

NOTE Expected components in the side view are: airbag assemblies, stored gas inflator, seat belt pretensioners, triggered or non-triggered gas struts and/or preloaded springs, low-voltage and/or high-voltage batteries, high-voltage power cables and components, safety valves, high-voltage disconnect, ultra-capacitors (LV or HV), structural reinforcements.

When one unique side view would be too loaded by the number of components/pictograms shown on the drawing, it is possible to split the side view in two. In this case, it is recommended to have the reinforcements and the high voltage in the first view, and the restraint systems, other components and low voltage and in the second view. See option 2 as presented in [Annex B](#).

5.2.6 Legend

The legend shall be placed as shown in [Annex A](#) or [Annex B](#) showing the pictograms used.

In an electronic application, the legend can be independent from the rescue sheet provided that ease of access can be ensured.

5.2.7 Footer

The footer shall include:

- document ID number of the rescue sheet:
 - The document ID number shall be a unique and logically structured identification number allowing the selection of the right rescue sheet. The rescue sheet identification number can be used as a simple identifier in communication (e.g. between dispatch and emergency vehicles). Proposal for an international document ID number is shown in [Annex D](#).
- version number of the rescue sheet starting at “01” for the first release,
- version date (optional),
- page number (out of the total number of pages), and
- space available to the left may be used for additional information, e.g. applicable country or region for the vehicle model.

5.3 Additional pages

The additional pages shall provide condensed information and use the same normative headings and colour coding of sections as the emergency response guide template (ISO 17840-3). The template for additional pages is given in [Annex C](#) and shall be followed. Only the relevant headings shall be included in the additional page(s). No renumbering shall be made. Maximum three additional pages should be used.

Known hazards should be stated. If a hazard is applicable to several headings, the general principle is that it should be repeated under each heading.

Relationship between component/system and related hazard(s) should be obvious from the arrangement of the information.

Additional pages may contain pictures and drawings for clarification.

Header (see [5.2.2](#) and [5.2.3](#)) and footer (see [5.2.7](#)) may be repeated in the additional pages.

5.4 Specific to a paper version

The minimum requirements of a rescue sheet as described in [5.2](#) are valid for a paper version. Portrait orientation only shall be used for all information.

A paper rescue sheet shall be easily printed on an ISO A4 format (ISO 216) paper.

It is recommended to use a single page. It could be recto-verso printed in case of additional information as described in [5.2](#).

5.5 Specific to an electronic version

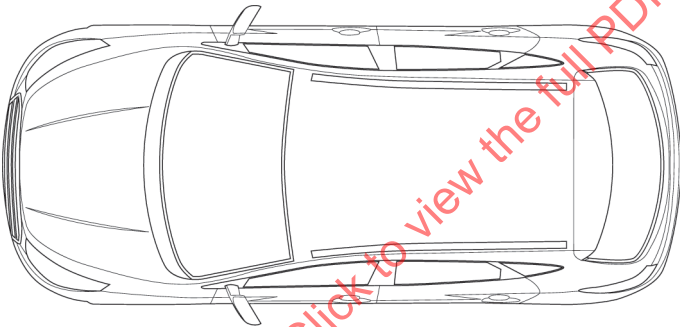
The minimum requirements of a rescue sheet as described in [5.2](#) are valid for an electronic format.

The elements described in [5.2.4](#) and [5.2.5](#) are essential for an electronic format as the vehicle graphic is the central element of the rescue information. Information in [5.2.2](#), [5.2.3](#), [5.2.6](#) and [5.2.7](#) should be accessible also in the electronic format.

In addition, all the advantages of having an electronic format can be used. For instance, it is allowed to hide components or legend or to zoom into specific zones.

Annex A
(normative)

Front page of rescue sheet — Option 1: One side view

Logo of brand	Name of manufacturer and vehicle model Body type(s) covered by the rescue sheet (year of production start – year of production end*) <i>* Leave empty if the car is still in production.</i>	Propulsion energy label according to ISO 17840-4	RHD pictogram or LHD pictogram <i>Leave empty when LHD and RHD are covered by the same rescue sheet.</i>
			
 Dimensions in millimetres ≥50 ≥50			
Legend			
Field may be used for additional information, e.g. applicable country or region for the vehicle model.		ID No.	Version No.
			Page No.