

**ASSOCIATION STANDARD**

**T/CSAE 85-2018**

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**Guide of emergency rescue for electric vehicles  
(English Translation)**

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### Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

Some elements of this standard may involve patents, and the standard issuing authority does not assume responsibility for identifying these patents.

This standard was proposed by the Technical Innovation Alliance of the Electric Vehicle Industry.

This standard was drafted. Shanghai Fire Research Institute of the Ministry of Public

Security, Shijiazhuang City, Hebei Province, public security fire detachment.

## 1 Scope

This standard specifies emergency rescue procedures for accidents such as electric vehicle collisions and wading.

This standard applies to pure electric vehicles and hybrid electric vehicles, not to fuel cell electric vehicles.

## 2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies.

This document. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 5907 Basic Terms of Fire Protection Part 1 GB/T 19596 basic terminology of electric vehicles GB/T 29176 Fire Emergency Relief General GB/T 29179 Fire emergency rescue operation procedures GA/T 1276 Road Traffic Accidents Resolved Personnel Action Guide

## 3 Terms and definitions

The following terms and definitions as defined in GB/T 5907 and GB/T 19596 apply to this standard.

### 3.1 Code of practice for operation

Normative procedures established for specific fire fighting and emergency rescue techniques.

#### 4.1.1 Technical requirements

Rescuers should receive relevant training and be fully familiar with the high-voltage system structure of local mainstream brands and models of electric vehicles.

#### 4.1.2 Protection requirements

Rescuers should be protected against electrical insulation when handling collisions. Water-related protective equipment should be worn when wading rescues.

When the vehicle is disposed, it should be protected by electrical insulation to prevent electric shock.

### 4.2 On-site alert

4.2.1 The warning range should be determined according to the investigation and monitoring situation, and the warning sign should be set.

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4.2.2 The working area should be set within 15 m of the accident vehicle, prohibiting the entry of unrelated vehicles, personnel and vessels; at 5 m the work area is set up and only the rescuers who are directly responsible for treating or rescuing the trapped person are allowed to enter.

4.2.3 The flammable and toxic gases should be continuously monitored, and the temperature of the power battery part of the accident vehicle should be monitored in real time, and the warning range should be adjusted in time.

#### **4.3.1.1 Vehicle number plate recognition**

Rescuers should determine whether the accident vehicle is an electric vehicle based on the national vehicle number plate policy.

#### **4.3.1.2 Electric vehicle identification**

Rescuers should carefully observe the body, and should have an electric vehicle logo, such as "EV", depending on the body, especially at the rear of the body.

The words "Hybrid", "E\*\*", "Electric Vehicle", "Hybrid" and so on determine whether the accident vehicle is an electric vehicle.

#### **4.3.2 Internal identification**

##### **4.3.2.1**

Rescuers should know the position of the high voltage components and the power off switch in advance according to the vehicle information through the on-board guide or the network inquiry.

##### **4.3.2.2**

Rescuers should first confirm the location of the orange parts and the parts with orange markings before operating the vehicle.

And check the content requirements of the relevant logo.

#### **4.4 Vehicle Investigation**

The damage of the power battery and high-voltage system of the accident vehicle should be judged through external observation and instrument monitoring, and the power battery should be evaluated.

Risk factors and consequences of explosions that may be triggered, and prepare for

accident rescue.

#### **4.5.1 Wheel fixing**

According to the state and location of the accident vehicle, it is reasonable to adopt stable techniques such as short-legged and long-legged, and use equipment such as support rods.

Effectively stabilize the car body, create safe working conditions, and effectively prevent vehicle movement.

#### **4.5.2 Car brakes fixed**

Make sure that the vehicle activates the handbrake or foot brake and that the gear is in the park.

#### **4.6.1 Automatic power off**

Turn off the vehicle start switch, load the vehicle key with automatic start function into the signal shielding bag or place it 10m away from the accident vehicle Outside.

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#### **4.6.2 Manual power off**

The accident vehicle should be manually powered off after ensuring automatic power failure to ensure that the power line is in a power-off state.

Find the position to cut off the low-voltage power supply, cut off the low-voltage line; cut off the power line according to the emergency rescue manual provided by the manufacturer.

### **5.1 Disposal procedures**

- a) identify the vehicle and determine the rescue plan after evaluation;
- b) Do a good job in the safety protection of rescue workers;
- c) fix the vehicle and cut off the power before operation;
- d) determine the location of the high voltage battery and components;
- e) personnel search and rescue and vehicle disposal;
- f) Site cleaning.

### **5.2 Personnel search and rescue**