IMIEV01
Carry out non high voltage operations on, near or with an electric vehicle

Overview

This standard is for people who work on, near or with electric vehicles but **do not work** on the vehicle's high voltage system. Examples of relevant job roles include body shop technicians, auto glazing technicians, vehicle fast-fit technicians, MOT testers, sales staff, cleaners/valeters or vehicle fitters. The standard covers safe working practices and essential knowledge of the hazards associated with electric vehicles and the precautions to follow to avoid these.

For the purposes of this standard, an electric vehicle is any vehicle that is in part or wholly electrically propelled. This would include

- Hybrid (HEV) - to include mild/micro hybrid vehicles where the voltage is considered dangerous.
- Plug-in Hybrid (PHEV)
- Extended Range Electric Vehicle (ER-EV) or Range Extended Electric Vehicle (RE-EV)
- Battery Electric Vehicle (BEV) or Pure Electric Vehicle (PEV)
- Fuel Cell Electric Vehicle (FCEV).

This standard does not deem someone competent to maintain, service or repair an electric vehicle's high voltage systems and their components.

Performance criteria

You must be able to:

P1 Identify the electric **vehicle** type and collect relevant information about the **vehicle** and any specific hazards

P2 Wear personal protective equipment (PPE) and use vehicle protection equipment (VPE) appropriate to the operations you are carrying out

P3 Confirm with the relevant person in your workplace that the correct workplace procedure has been followed to make the vehicle safe prior to starting any work

P4 Work in a way that:

P4.1 - minimises contact with, or damage to, high voltage electrical systems and their components

P4.2 - avoids damage to your working environment and injury to yourself and others

P5 Refer any problems with the **vehicle** to the relevant person in your workplace

P6 Follow workplace procedures to report the operations you have carried out on, near or with the **vehicle**

P7 Safely charge the **vehicle**, as necessary.

Knowledge and understanding

You need to know and understand:

Use of technical information

K1 How to identify an electric **vehicle** and its type.

K2 How to find, interpret and use sources of information applicable to electric vehicles as appropriate to your job role

K3 How to identify high voltage electrical components in an electric vehicle

Legislative and organisational requirements and procedures

K4 The health and safety legislation, industry codes of practice or guidelines and workplace procedures relevant to working on, near or with electric vehicles, including the appropriate personal protective equipment and its use and the safety of the working environment

K5 The hazards associated with high voltage electric vehicle components and how to work safely in their proximity

K6 Your workplace procedures for:

K6.1 confirming with the relevant person in your workplace that the **vehicle** has been made safe as appropriate to the work you are carrying out

K6.2 referring/reporting problems when working with electric vehicles

K6.3 recording and reporting work carried out on electric vehicles

K7 The implications of electrical conductivity through the human body

K8 The implications of strong magnetic fields and the effects on medical devices

K9 The precautions necessary when using plug-in charging equipment

K10 Workplace procedures that must be followed in the event of electric shock and other emergencies, including fire and flood

K11 The hazards associated with electric vehicles when exposed to extreme temperatures, impact and other adverse conditions

Vehicle system operation

K12 The main differences between an electric and non-electric vehicle

K13 How to safely operate an electric **vehicle**

K14 The charging systems associated with electric vehicles and how to use them safely

Scope/range

1. **Vehicle** - any vehicle that is in part or wholly electrically propelled. This would include
   - 1.1. Hybrid (HEV) - to include mild/micro hybrid vehicles where the voltage is considered dangerous.
   - 1.2. Plug-in Hybrid (PHEV)
   - 1.3. Extended Range Electric Vehicle (ER-EV) or Range Extended Electric Vehicle (RE-EV)
   - 1.4. Battery Electric Vehicle (BEV) or Pure Electric Vehicle (PEV)
   - 1.5. Fuel Cell Electric Vehicle (FCEV)

Additional Information

Glossary

This section contains examples and explanations of some of the terms used but does not form part of the standard.

Hazards associated with high voltage electrical vehicle components - exist not only during work on high voltage systems, as specified above, but also on all other high-power electrical drive systems and high-pressure storage systems. Vehicle and equipment manufacturers' guidance should be followed at all times.

High voltage – Regulation No 100 of the Economic Commission for Europe of the United Nations (UNECE) — Uniform provisions concerning the approval of vehicles with regard to specific requirements for the electric power train, states that: 'High Voltage' means the classification of an electric component or circuit, if its working voltage is > 60 V and ≤ 1 500 V DC or > 30 V and ≤ 1 000 V AC root mean square (rms). Electricity at Work Regulations (1989), and associated HSE guidance should be followed at all times.

Sources of information applicable to electric vehicles

Examples include hard copy manuals, data on computer and data obtained from on- board diagnostic displays.

Operations on, near or with an electric vehicle

Any activity which does not include working on the high voltage systems and components.

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Status	Original
Originating organisation	IMI Ltd
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Relevant occupations	Sales Executive (Automotive); Sales Controller (Automotive); Vehicle Fitting Operations (Automotive); Vehicle Valeter (Automotive); Specialist Tyre Fitting Operations (Automotive); Hire and Rental Delivery and Collection Operations; Hire and Rental Operations; Hire and Rental Counter Operations; Rental and Leasing Customer Service Advisor (Automotive); Rental and Leasing Maintenance Advisors (Automotive); Rental and Leasing Technical Service Advisor (Automotive); Body Repair Technician (Automotive); Body Repair and Alignment Technician (Automotive); Cosmetic Refinishing Technician (Automotive); Cosmetic Senior Refinishing Technician (Automotive); PDR Senior Technician (Automotive); PDR Technician (Automotive); Body Builder (Automotive); Body Builder Workshop Controller (Automotive); Vehicle Damage Assessment Operators; Vehicle Damage Assessor (Automotive); Vehicle Fitters; Insurance Engineer (Automotive); Autoglazing Technician; Auto Electrical Technician (Automotive);

	Automotive Aftermarket Electrical Enhancement Technician (Automotive); Auto and Mobile Installation Technicians; Automotive Paint Technician; Automotive Paint Supervisor; Customer Service Advisor (Automotive); Vehicle Delivery Driver; Bus and Coach Mechanic (semi-skilled); Bus and Coach Mechanic; Bus and Coach Electrician; Bus and Coach Mechelec; Bus and Coach Master Technician; Bus and Coach Body Repairer; Bus and Coach Bodybuilder
Suite	Electric Vehicle
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