IMIEV01L

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

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
P2vWear 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

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 floodK11 The hazards associated with electric vehicles when exposed to extreme temperatures, impact and other adverse conditionsVehicle system operation K12 The main differences between an electric and non-electric vehicleK13 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)

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	Auto and Mobile Installation Technicians, Auto-electrical Technician (Automotive), Automotive Aftermarket Electrical Enhancement Technician (Automotive), Automotive Paint Supervisor, Automotive Paint Technician, Body Builder (Automotive), Body Builder Workshop Controller (Automotive), Body Repair and Alignment Technician (Automotive), Body Repair Technician (Automotive), Cosmetic Refinishing Technician (Automotive), Cosmetic Senior Refinishing Technician (Automotive), Hire and Rental Counter Operations, Hire and Rental Delivery and Collection Operations, Hire and Rental Operations, Insurance Engineer (Automotive), PDR Senior Technician (Automotive), PDR Technician (Automotive), Rental and Leasing Customer Service Advisor (Automotive), Rental and Leasing Maintenance Advisors (Automotive), Rental and Leasing Technical Service Advisor (Automotive), Sales Controller (Automotive), Sales Executive (Automotive), Specialist Tyre Fitting Operations (Automotive), Vehicle Damage Assessment Operators, Vehicle Damage Assessor (Automotive), Vehicle Fitters, Vehicle Fitting Operations (Automotive), Vehicle Valeter (Automotive),

	Autoglazing Technician, 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, Coachbuilder
Suite	Electric and Hybrid Vehicles
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