IMIEV2
Carry out work on broken down and damaged electric and hybrid vehicles

Overview

This standard is designed for staff who deal with broken down or accident damaged electric and hybrid vehicles, for example, those working for roadside recovery operators and the emergency services. It contains the knowledge and competence required to carry out a risk assessment and work safely around an electric/hybrid vehicle that may have damage to its high and/or low energy age electrical systems.

Note: *This standard does not deem someone competent to maintain, service or repair high energy electrical systems and their components.*

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Performance criteria

You must be able to:

P1 wear personal protective equipment appropriate to the work activities you are carrying out

P2 collect and evaluate relevant information about the **electric/hybrid vehicle** and any potential hazards

P3 identify the hazards and assess the risks presented by the **electric/hybrid vehicle**

P4 follow the correct procedures to make the **electric/hybrid vehicle** safe prior to starting any **work activities**, including where necessary, isolating **high energy electrical** systems, within your level of training

P5 carry out **work activities** in a way that minimises risks to yourself and other people

P6 refer any problems with the **electric/hybrid vehicle** that you cannot deal with yourself to a relevant person in your organisation and follow their instructions

P7 report the **work activities** you have carried out on or near the **electric/hybrid vehicle** to relevant colleagues

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Knowledge and understanding

You need to know and understand:

Safety precautions

K1 the potential hazards associated with high and low voltage systems including batteries and other **high energy electrical** vehicle components

K2 the health and safety legislation and workplace procedures relevant to working with **electric/hybrid vehicles**, as appropriate to your work role, including the appropriate personal protective equipment and its use

K3 the legislation relevant to the **work activities** described in the scoping statement for this standard.

K4 your organisation's procedures for the:

K4.1 referral/reporting of problems when working with **electric/hybrid vehicles**

K4.2 reporting work carried out on **electric/hybrid vehicles**

K5 the differences between an on **electric/hybrid vehicle** and non-electric vehicle

K6 how to operate an on **electric/hybrid vehicle** safely

K7 the charging systems associated with **electric/hybrid vehicles** and how to charge them safely, including the use of plug-in charging equipment

K8 how to carry out a risk assessment on damaged and broken down on **electric/hybrid vehicles**

K9 how to make electric vehicles safe in order to carry **out work activities**, including isolating **high energy electrical** systems, where required, within your level of training

K10 how to reduce the risk of hazards when working on and around on **electric/hybrid vehicles**

K11 the hazards associated with on **electric/hybrid vehicle** batteries when exposed to extreme temperatures, impact and other adverse conditions

K12 the specific vehicle manufacturer restrictions regarding non-start and recovery, for example jump starting (hybrid only) and towing/lifting

K13 the implications of electrical conductivity through the human body and the potential medical conditions that can occur regardless of voltage or current type present in an **electric/hybrid vehicle**

Use of technical information

You need to know and understand:

K14 how to find, interpret and use sources of information applicable to a **electric/hybrid vehicle** as relevant to your job role

High Energy Electrical component construction

You need to know and understand:

K15 how **high energy electrical** components function and are constructed, including battery modules, electric motors and associated electrical components

Systems

You need to know and understand:

K16 how to identify the typical location of **high energy electrical** cables and components, for example, labelling and colour

K17 the different types of energy storage systems and voltages associated with on **electric/hybrid vehicles**

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Additional Information

Scope/range

1 **Electric/hybrid vehicles**– any vehicle that is powered wholly or in part by an electrical drive train. This includes electric hybrid plug-in vehicles

2 **High energy electrical/high voltage** – typical voltages used for a range of Electric and Hybrid Vehicles 100-650V **ECE R100** (relating to vehicle regulations) paragraph 2.14 clearly defines high voltage: “High Voltage" means the classification of an electric component or circuit, if its working voltage is > 60 V and ≤ 1500 V DC or > 30 V and ≤ 1000 V AC root mean square (rms).

3 **Status of vehicle** – broken down or with damage which may present high or low voltage electrical hazards.

4 **Work activities** – recovering or dealing with electric/hybrid vehicles as part of an emergency response.

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