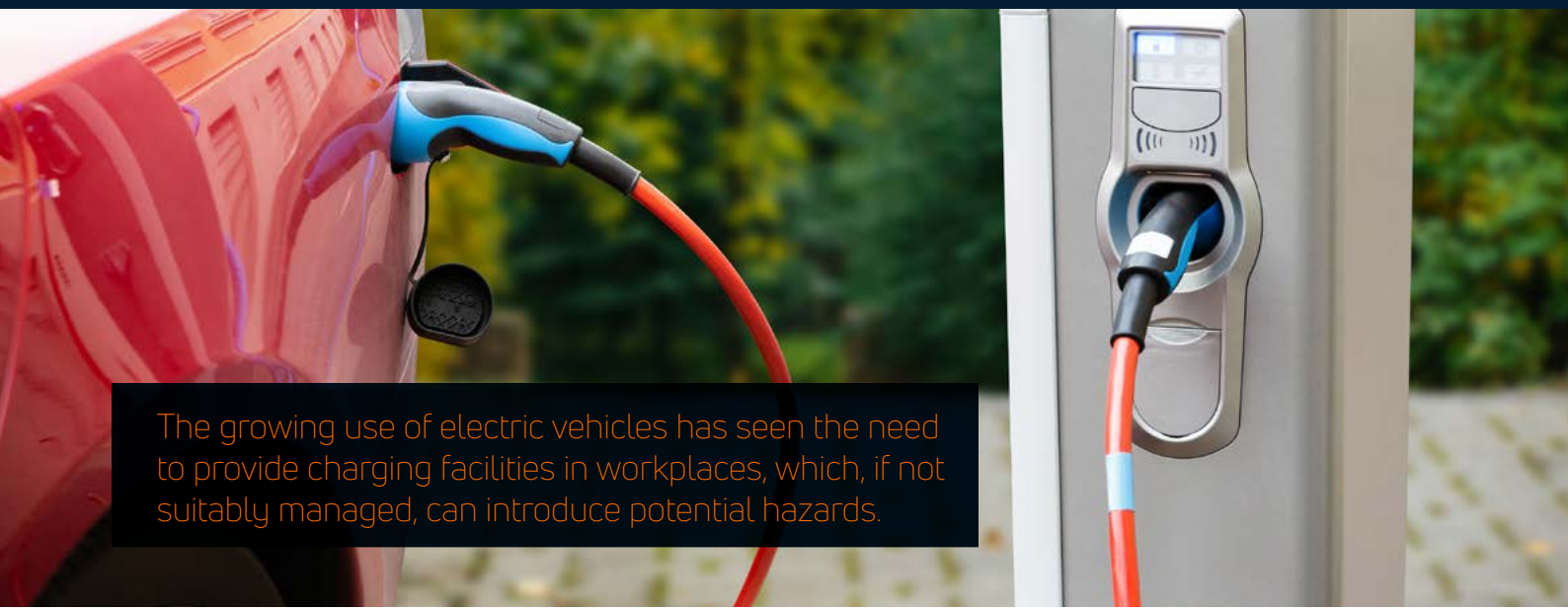
Vehicle battery charging at the workplace

This guidance highlights some of the hazards associated with the charging of electric vehicles and the steps that can be taken to reduce or mitigate them.

RISK ADVICE LINE

Having read this guidance should you have any additional questions on this topic or other risk related matters, as a valued Ecclesiastical customer you can contact us through our 'Risk Advice Line' on 0345 600 7531 (Monday to Friday 9am - 5pm, excluding bank holidays) and one of our in-house risk professionals will be able to assist. Alternatively you can email us at risk.advice@ecclesiastical.com and one of our experts will call you back within 24 hours.

For queries about your policy cover or claims please contact your insurance broker.



The growing use of electric vehicles has seen the need to provide charging facilities in workplaces, which, if not suitably managed, can introduce potential hazards.

The time needed to charge an electric vehicle can be anything between 30 minutes and several hours, depending on the size of the battery and the speed of the charging point.

Your fire safety management strategy should consider practical passive, active and managerial control measures as part of the fire risk assessment for the premises when selecting and designing areas for use as electric charging points.

The nature of the charging equipment requires it being installed in the immediate vicinity of your vehicles. Your assessment should therefore also include the suitability of the location and the nature of the equipment for the intended purpose.

Where appropriate, you should also carry out an assessment in accordance with the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR) to ensure that charging areas are sufficiently remote from any areas used for the storage of hazardous or flammable liquids and gases.

Your risk assessments should consider the risk from charging electric vehicles when your premises are unoccupied. The measures to be considered should include:

- Physical separation of the charging points from any process and storage areas
- A suitable power supply with control and isolation systems
- Fire detection and warning in case of fire
- Smoke ventilation for the removal of toxic fumes, which will also assist firefighting

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Fire extinguishers

An emergency action plan in the case of fire

Staff training in the safe charging of vehicles and fire procedures, including the safe shut down of the charging process and evacuation of the premises.

Fire safety management

When choosing the location for charging points, you should ensure there is adequate room for vehicles to be parked safely in the charging area and for connection to be made to the charging equipment.

Where charging points are to be provided in multi-storey car parks you should give consideration to locating these in open air at roof deck level to minimise the potential for fire spread within the structure.

Where you are leaving a vehicle to charge unattended, you should check that the charger is working satisfactorily, that there is adequate room for other vehicles to move around them safely, and that potential fire hazards in the immediate area have been identified.

You must keep the charging area free of any flammable or combustible material, other than those which form parts of the vehicle and their associated chargers.

You should appoint a member of staff who has been trained in the procedures to isolate the power to charging equipment in an emergency, the actions to be taken to raise the alarm and fight the fire if safe to do so.

All relevant staff should be trained in the safe use of the chargers for vehicles that they may be called upon to drive. This training should include the undertaking of visual inspections of the charging equipment prior to each use.

General considerations

Charging points for electric road vehicles should not normally be located within your buildings.

Charging bays should be clearly signed and marked out to enable vehicles to park close to the charging point and prevent the stretching of charging cables.

You should protect charging points against mechanical damage by vehicles.

You may wish to allow private cars belonging to your employees to use external company charging points, subject to compatibility checks.

Vehicle charging points must be installed by a competent electrician (such as those recognised by the NICEIC, the Electrical Contractors Association (ECA), NAPIT or SELECT in Scotland.

An electrical circuit should be dedicated to the use of the chargers and not be part of a ring main or used for other purposes. A suitable fixed residual current device (RCD) should be installed as additional protection for vehicle charging supplies.

All chargers and associated equipment should be installed, used and maintained in accordance with the manufacturer's instructions.

You must only charge vehicles in accordance with the manufacturer's instructions.

Where multiple chargers are in use you should display clear and prominent notices at each charging point indicating for which equipment or vehicle(s) it is suitable.

Where rapid charging points, known as DC fast charge are provided, you should ensure that these are clearly differentiated from conventional charging points because of the hazards associated with the direct current.

A visual inspection of the charger should be made prior to each use. Any damaged equipment should be isolated and taken out of use until it has been inspected by a competent electrician, and repaired as necessary.

Charging areas should be well ventilated to reduce the risk of overheating during the charging process. Battery cells should not be subject to temperatures in excess of 60°C in operation or 70°C during storage.

It is important that cells in a battery are balanced during the charging process to avoid overcharging and thus overheating of individual cells. You should contact the manufacturer if a vehicle battery, or cell(s) within the battery, appears to be overheating.

For environmental purposes, batteries should be recycled at the end of their working life. You should store waste batteries safely outside the premises, and protected from the effects of the weather, while awaiting disposal by a specialist contractor or the supplier.

Further guidance

Further guidance can be found in RC 59 Fire Safety when charging electric batteries. This is available to download free from **www.riscauthority.co.uk**

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