

Electric Scooters

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The use, storage and charging of battery powered movement devices is rapidly developing, bringing benefits and challenges to users and business owners.

This Loss Prevention Standard provides guidance to help businesses identify, and mitigate the risks associated with Electric Scooters (E-Scooters).



Introduction

The use of E-Scooters is becoming increasingly prevalent. The move towards more environmentally friendly modes of transport, ease of use, availability and travel cost savings have all contributed to their popularity.

In terms of fire risks, the devices are constructed using numerous plastic components; are usually powered with lithium-ion, or similar rechargeable battery technologies, and require regular recharging. The growth of the domestic consumer market has also greatly increased the potential for poorer quality devices to be in circulation, along with a lack of inspection, testing and

maintenance regimes, and/or the careful disposal of damaged items. E-Scooter batteries are often installed in close to the proximity to the ground, meaning they can repeatedly collide with kerbs etc., and incur damage, damage which can eventually result in fire related events.



The availability of ‘aftermarket’ components and accessories is also of concern with poorly made, or lower standard non-original equipment manufacturer made components along with counterfeit items; incorrectly rated components; ‘booster’ batteries, through to second hand/used markets, batteries, battery chargers or other components further increasing the risk of faults and subsequent fire events.

Whilst many fire incidents occur in homes whilst E-Scooters are under charge, these devices are also increasingly stored and charged in the workplace. In 2022 a [fire at an E-Scooter warehouse in Bristol](#) resulted in the loss of 200 E-Scooters and impacts to trading. In May 2023 a [fire involving an E-Scooter caused significant damage to a hotel in London](#). Further E-scooters and E-unicycles have been banned from Transport for London (TFL) public transport since December 2021, following a fire involving an E-Scooter, and other national public transport services have, and continue to, adopt this position.

This Loss Prevention Standard outlines the main risk exposures in the handling, charging and storage of E-Scooters/E-Scooter batteries and provides general guidance to help reduce the potential for significant loss and impacts to business trading.

This document is one of a series of battery related Loss Prevention Standards. Other documents in the series provide guidance for specific battery applications or settings.

Note: This standard is not intended to address Liability exposures. It focusses on Property loss prevention and related risk management guidance.

Understanding the Risks

The risk of fire involving good quality, undamaged lithium-ion batteries, is low. The fire risk however increases significantly when aged, poorly manufactured, misused, modified, or damaged batteries are used or are paired with incompatible or poor-quality charging equipment. Damaged or faulty batteries can become unstable often resulting in thermal runaway and subsequent ignition. Fires involving lithium-ion batteries can be significant with volatile and widely dispersed **flaming; a ‘domino’ effect as fire spreads** between individual cells within the battery or batteries; potential explosion risks and the potential for reignition from ongoing chemical decomposition after the initial fire. Fires involving a lithium-ion batteries or lithium-ion powered devices can be difficult to extinguish and can reignite days, and sometimes weeks in some cases, due to ongoing chemical decomposition.

The consequences of fire include expensive clean-up operations; impacts to trading and key customer supply during downtime, as well as impacts to Environmental, Social and Governance (ESG) programmes.

General Considerations

The following areas should be fully considered:

- Risk Assessments – Ensure relevant risk assessments including Fire Risk Assessment and where applicable, Explosion/DSEAR Risk Assessment have been reviewed to address the presence of E-Scooters/E-Scooter batteries at the premises and any remedial or corrective actions are implemented.
- Management of Change – Depending on the scale of the activities planned or undertaken, Management of Change protocols may need to be followed to ensure minimal impacts/exposure to the existing site activities and arrangements.
- Inform your Insurer and Broker – Changes to business activities and risk exposures, and risk control installations such as fire barriers, fire resisting structures, automatic fire detection or automatic fire protections should be discussed with your Insurer and Broker, who can provide risk management advice and guidance.
- Site Rules/Standard Operating Procedures – Ensure the Management Policy rules, which are discussed below, on storage, charging, site inspections, authorisation, training, emergency arrangements etc., are recorded within site rules/**Standard Operating Procedures (SOP's) and shared with relevant staff.**
- Self-Inspection – Permitted storage and charging areas should be subject to recorded inspections to help identify issues or rule breaches. At least one weekly inspection is recommended using photographic and thermographic camera equipment to help detect unprecedented changes in temperature, issues, or concerns.
- Emergency Response - an emergency response plan outlining key responsibilities and actions in an emergency incident involving E-Scooters/E-Scooter batteries.
Note - The explosive potential of lithium-ion batteries is increased when enclosed within compartments, particularly when oxygen levels rapidly increase, such as when compartment doors are opened. Access into such compartments during a fire event should ideally be limited to firefighters or other approved persons.
- Impairments – Ensure any impairments relating to fire detection and protection systems in E-Scooters/E-Scooter battery storage or charging areas are reported to your Insurer and Broker. Temporary precautions may be necessary to some arrangements whilst impairments are ongoing.
- Fire and Rescue Service - Local Fire and Rescue Services are often amenable to inspecting premises to evaluate fire risk exposures and offer guidance. This is recommended for high value properties, those in busy city centres or near critical infrastructure, or with significant storage of E-Scooters/E-Scooter batteries. As a minimum any emergency fire information left at the premises for the emergency services should be updated to confirm the presence and location of any E-Scooters/E-Scooter batteries. Fire and Rescue Service access to the storage and charging areas including smoke ventilation and emergency signage should be carefully considered, as should the risks to neighbouring properties including storage in yard areas, and any local environmental features e.g., ponds, lakes etc. from fire, smoke and firefighting water runoff should be assessed and any necessary damage mitigation measures agreed.
- Business Continuity – **Review the site's Business Continuity Plan to ensure disaster recovery and continuity arrangements are adequate.**

Management Policy

Where E-Scooters are permitted, a clear management policy should be introduced detailing the maximum number allowed and the storage and charging arrangements. This policy should be clearly communicated to all users e.g., employees, visitors, tenants etc., along with corresponding rules and protocols as outlined in the Standard Operating, including emergency arrangements.

A maximum number of E-Scooters/E-Scooter batteries should be permitted to be stored and/or charged within dedicated areas, and authorisation procedures should be in place to ensure the permitted thresholds are not exceeded.

Adequate information and training should be provided to users, ensuring they understand the related hazards; the dangers of procuring poor quality E-Scooters, after-market batteries, modifications, second hand or non-OEM batteries or charging devices etc., and to ensure they properly maintain and service their E-Scooters.

Users and other relevant persons should be actively encouraged to report any incidents or evidence involving neglect; use of damaged, aftermarket, recycled or modified E-Scooter batteries, inappropriate handling or poor charging practices including the use of aftermarket charging equipment accessories; charging batteries in common areas, fire escape routes, deskside etc. to a responsible person within the business for review.

The authorisation procedures should also include checks around the use of aftermarket batteries, modifications, age of the equipment/battery end-of-life recommendations etc., and any devices of concern should be prohibited from site. Where the E-Scooter is clearly aged, in poor order, or the owner is uncertain e.g., second hand or borrowed equipment etc., the E-Scooter should be treated as potentially hazardous and prohibited/removed from the premises.

The Management Policy framework should be supported by recorded inspections of general areas to help avoid deliberate or unintentional breaches of site rules, signs of damage, combustible goods being stored in proximity, signs of vandalism etc. by a competent person.

Storage & Charging Locations

Note: It is important that where any consideration is being given to the storage and/or charging of batteries that any additional risks posed must be fully assessed, with consideration given to the use of the building and its layout and be subjected to review within the premises Fire Risk Assessment.

External Storage and Charging

The storage and charging of E-Scooters/E-Scooter batteries at the premises should preferably only be allowed externally in a safe area clear from buildings, valuable assets, and combustible goods, waste, smoking areas etc. This reflects the fire risks associated with home modifications such as installing more powerful or additional 'booster' batteries; use of aftermarket batteries; poor quality and potentially unsafe batteries used in cheap imported goods and the risks of batteries being damaged in accidents or exceeding end of life and lifecycle expectations. In most cases at least 10 metres separation is recommended.

Where adequate separation distances cannot be achieved, the installation of a fire barrier providing a fire resistance rating of at least 60 minutes should be considered between the storage/charging area and the buildings, valuable assets or combustible goods.

Any canopies or enclosures over storage/charging areas should preferably be of non-combustible materials, and no other storage or activities should be undertaken within, and in proximity to such a structure.

Waterproof power outlets/sockets and charging equipment should be mounted at a suitable height and location to protect against rain and flood water ingress including cables.

In summer months or warmer climates, the upper safe operating temperatures of the batteries being charged should also be considered. In uninsulated or exposed charging areas, excessive or prolonged temperatures may have an impact on device batteries and may even initiate the thermal runaway event.

Underground Car Parks

Storage and charging of E-Scooters/E-Scooter batteries within underground car parks should be carefully considered given the potential for fire spread to other vehicles, including electric vehicles, and consequential fire spread into buildings. As such, storage and charging of E-Scooters/E-Scooter batteries in underground car parks should be prohibited if possible.

If unavoidable, storage and charging only be undertaken in a dedicated room or other containment with a defined fire resistance rating of at least 60 minutes. An increased fire resistance rating of 90 to 120 minutes should be considered where significant numbers of E-Scooters/E-Scooter batteries are stored or charged, or other risk features which increase the risk of ignition or fire growth are present, such as the presence of combustible construction elements to the building, plant, or equipment in proximity; waste bin storage; large accumulations of vehicles/electric vehicles; aged or imperfect passive fire protection to car park ceiling; life safety concerns as described in the premises fire risk assessment etc. Further information on fire resistant storage is provided below – see Internal Storage and Charging – Dedicated Room.

Underground storage locations should also be assessed for any impacts from heavy rain accumulations (surface water) or inundation. If exposed and where required, attention should be paid to local drainage and flood protections.

Hired E-Scooters, such as those found for public hire in many city centres, should not be stored on, or in proximity to the premises.

Internal Storage and Charging – Dedicated Room

Storage and charging of E-Scooters, is not recommended within buildings and where possible should be prohibited.

Where necessary and permitted, a dedicated room should be provided, and which should be:

- Of non-combustible construction providing a fire resistance rating, including the ceiling of at least 60 minutes and,
- Fitted with an appropriately tested and accredited fire door, providing at least 60 minutes fire resistance, and kept closed when not in use.
- Fitted with lighting and any necessary electrical fittings with an appropriate explosivity rating to reflect the potential presence of explosive vapours.

Additionally, the store should not feature any other openings, such as windows and deposit/collection slots which open internally unless fitted with fire shutters certificated to LPCB Loss Prevention Standard - LPS 1056: Issue 6.2 Requirements for the LPCB Approval and Listing of Fire Door-sets, Lift Landing Doors, and Shutters, providing at least 60 minutes fire resistance.

External openings, such as windows etc., should be assessed and similarly protected if there is potential for vertical fire spread across the external fascia of the building or fire entering the building via other openings above; valuable and/or combustible infrastructure located directly adjacent; or life safety concerns such as public highways, fire escape routes in proximity, as stipulated in the premises Fire Risk Assessment.

Any openings for cabling and pipework etc. should be adequately fire stopped and/or fitted with intumescent collars to ensure the 60 minutes integrity of the store is maintained in the event of ignition.

Intumescent collars should be used to protect pipework which could collapse or melt in the event of fire filling any voids created and providing a fire barrier.

The installation of fire shutters and fire doors should be completed by a company certificated to LPCB Loss Prevention Standard LPS 1271: Issue 2.3 Requirements for the LPCB Approval and Listing of Companies Installing Fire or Security Doors, Door-sets, Shutters and Active Smoke/Fire Barriers.

Installation of other passive fire protection products such as fire stopping should be completed by a company certificated to LPCB Loss Prevention Standard - LPS 1531: Issue 1.2 Requirements for the LPCB approval and listing of companies installing or applying passive fire protection products.

Maintenance of such protections should be completed by a company certificated to LPCB Loss Prevention Standard - LPS 1197: Issue 4.2 Requirements for the LPCB approval and listing of companies inspecting, repairing, and maintaining fire and security doors, door-sets, shutters, and active smoke/fire barriers. Refer [redbooklive](#) for details of approved contractors.

The store should not be used for any other purpose and a clear distance maintained between the store and its openings of preferably at least five metres is recommended. Marking the flooring to specify clearance distances is recommended where possible.

The maximum storeroom temperatures should be assessed, and cooling/heating systems configured to automatically operate prior to recommended battery temperature thresholds being met. Automatic heating/cooling systems should be suitable for use in potentially explosive environments and be subject to routine testing to ensure safe operation when required.

Depending on the number of E-Scooters/E-Scooter batteries on charge or in store, explosion relief systems may be necessary. This should be assessed by a suitably competent person or consultant within an explosion/DSEAR assessment, and any recommended actions implemented.

Increased fire resistance ratings of 90 to 120 minutes should be considered where significant numbers of E-Scooters/E-Scooter batteries are held in store or charged or other risk features which increase the risk of ignition or fire growth are present, such as the presence of combustible construction elements to the building, critical plant, or equipment in proximity; waste bin storage; life safety concerns as stipulated within the premises Fire Risk Assessment. Guidance should be sought from your Insurer or Broker in this regard.

The storeroom should be dedicated and not be used for other purposes or storage.

Internal Charging – Charging Cabinets

Where the risk is limited to a small number of detachable batteries, a [proprietary storage/charging cabinet](#) should be considered, and which should be:

- Specifically designed for the storage and charging of a small number of batteries,
- Independently tested and approved by a third-party accredited testing organisation and rated to provide a defined fire resistance period of at least 60 minutes. Note: increased fire resistance periods are available if preferred. Cabinets should be in approved to BS EN 14470-1 Fire Safety Storage Cabinets - Part 1: Safety Storage Cabinets for Flammable Liquids.
- **Located in a defined ‘safe’ area of the premises, preferably a separate fire compartment** but otherwise remote from combustible building linings; at least three metres clear of combustible goods, traffic movements and hazardous trading activities. Demarcation using floor hatching to specify clearance distances is recommended where possible. Additional impact protection may be necessary in areas with significant vehicular movements.
- Fitted with overcharge isolation devices.
- Adequately ventilated.
- Subject to appropriate electrical appliance testing of charging equipment.

The use of non-fire resistance rated storage/charging cabinets is not recommended.

Damaged or Faulty Batteries

Damaged or faulty E-Scooter batteries, or E-Scooters featuring such batteries should not be stored at the property or premises longer than is necessary, and a strict rule to this effect should be established within the site/building rules and Standard Operating Procedures, detailing arrangements, and responsibilities for user removal or prompt collection by a reputable waste recycling company. If there is any doubt or concern about damaged/faulty or returned, or recycled batteries, or goods featuring such batteries etc. they should be segregated and quarantined pending removal or collection.

Segregation should be:

- External and as far away from buildings, valuable assets, and combustible goods as possible (in most cases at least 10 metres separation is recommended). If the batteries are contained, this should be within a non-combustible receptacle.
- If external storage is not possible, a dedicated storeroom specifically for the storage of damaged/faulty or returned, or recycled batteries, or goods featuring such batteries etc. should be provided, and which should be of non-combustible construction providing a fire resistance rating, including the ceiling of 90 to 120 minutes.

Daily thermographic camera inspections of damaged or faulty batteries, or goods featuring such batteries are recommended whilst temporarily held in store to help detect unprecedented changes in temperature, issues, or concerns.

The charging of damaged or faulty E-Scooter batteries, or E-Scooters featuring such batteries internally is not recommended.

Ventilation

In addition to preventing the spread of fire, the safe management of smoke and gas emissions resulting from lithium-ion battery combustion, off gassing or thermal runaway should be considered.

To minimise the potential for fire, explosion and/or undue smoke contamination you should arrange for appropriate, mechanical means of ventilating storage or charging rooms to be installed. The potential explosivity of emitted gases should be assessed, and ventilation systems rated as suitable for use in explosive atmospheres as appropriate. This is of additional concern given the production of hydrogen gas that can be generated when firefighting water is applied to lithium-ion battery fires.

The exhaust point of the ventilation system should be to a safe area in the open, and not located in an area where any exhausted smoke could compromise the air intake of the building or that of neighbouring properties.

The ventilation system should be continuous and not actuated or stopped by performance of any fire protections and be subject to a formal inspection and maintenance programme by appropriately qualified and competent personnel.

Charging and Electrical Hazards

Charging places stress on batteries and is one of the main fire related concerns. The increased load on the electrical supply, which if not well maintained or capable of supplying the demand safely, is also a potential source of ignition.

The following guidance can help reduce the risk of electric faults during charging operations.

- In all cases all manufacturers' recommendations and local regulatory requirements should be followed.
- Any fixed charger points should be installed and maintained in accordance with manufacturer's instructions and any electrical installation work undertaken by a competent trained electrician (In the UK - such as those with current NICEIC, ECA, NAPIT accreditation).
- The circuits supplying the charging points should be checked to ensure it has capacity for the proposed additional electrical load.
- Where provided or recommended, Battery Management Systems should be installed, used at all times, and never bypassed. These systems monitor the battery performance, heat output, ensures cells are used within their safe working parameters, detect faults, and isolate the charging equipment if required, reducing the potential for fire related events.
- All chargers should be suitably rated for the devices they are due to charge.
- Surge protection safety devices should be installed and regularly tested.
- Where possible as much of the wiring should be hard wired.
- Routing of cabling should be carefully considered, particularly if multiple cables are running through cable trays, as current draw may cause excessive heating within trays or conduits.
- All chargers should be clearly labelled and if different chargers or chargers with different ratings are proposed to be in use in the same area, the chargers should be grouped to help avoid confusion. Users should ensure the right charger with the correct rating is being used to charge the corresponding battery/device in question.
- The design and layout of the area should ensure charging cables do not become overstretched, tangled, or can be damaged.
- The risk of water damage should be assessed and appropriately IP rated equipment used where equipment is potentially exposed to rain or flood water etc. Charging infrastructure, chargers and cables should be stored and sited at least 150mm from ground level to protect from water ingress in an escape of water, or other water related event.
- All chargers should be arranged with a clearly labelled and readily accessible master isolation switch that is not in the same fire area as the charger itself.
- Depending on the nature of the arrangements and chargers used, these should be considered within all necessary electrical fixed wiring or portable appliance testing.

- If any charging equipment is damaged or faulty it should immediately be removed from use, repaired, or discarded and the charging equipment isolated safely as necessary.
- The use of extension leads and/or multi plug adaptors should be prohibited.
- Thermographic cameras should be routinely used on the batteries and the charging equipment to check for hot spots and overheating components.
- An annual formal infra-red thermographic inspection of the charging infrastructure is also recommended.

Fire Protections

Automatic Fire Detection

Storage and charging of E-Scooters/E-Scooter batteries undertaken internally should be within areas of the premises covered by the buildings automatic fire detection system.

Where not installed, automatic fire detection should be provided in all areas/rooms of the buildings to include the storage/charging areas. In the UK this should ideally be compliant with Category L1 or P1 of BS 5839-1:2017 - Fire detection and fire alarm systems for buildings - Code of practice for design, installation, commissioning, and maintenance of systems in non-domestic premises. This is vital for life safety and early notification to the Fire and Rescue Service. A means of manually raising the fire alarm should also be provided, especially in the storage/charging area if it exposes any other assets.

Any plans to change the existing fire detection system or install a new fire detection system should be discussed with your Insurer and Broker.

Automatic Sprinkler Protection

Where an existing automatic sprinkler system is installed, the design should be adequate for any changes in risk profile. A suitably accredited sprinkler maintenance company, such as one approved to LPCB Loss Prevention Standard LPS 1048: Requirements for the approval of sprinkler system contractors in the UK and Ireland, should be asked to confirm the sprinkler density, water supply demand and water supply duration are likely to be adequate and provide recommendations for enhancing the protection where necessary.

Note: International sprinkler standards have not yet developed clear and specific guidance on protecting against the risk of lithium-ion battery fires in all scenarios, and any recommended solutions are likely to be based on the judgment and experience of the sprinkler company. Any recommendations in relation to automatic fire protections should be discussed with your Insurer and Broker as early as possible for advice and guidance.

Where automatic sprinkler protection is not installed and depending on the numbers of E-Scooters/E-Scooter batteries in store and the size of the charging room, it may be appropriate to provide a safe means of manually drenching any potential fire. For example:

- A series of open sprinkler heads at the roof/ceiling in the storage/charging room.
- Designed to provide 12.2mm/min/m² area.
- Connected to a dry riser arrangement, with a connection outside of the enclosure.

This would allow the Fire and Rescue Service to connect a hose to the dry riser inlet and drench the enclosure internals to assist firefighting efforts.

Note: Residential sprinkler systems, as found in some apartment buildings, are designed to support fire safety escape arrangements, and do not provide recognised property protection. They should not therefore be relied upon to control or extinguish a fire involving E-Scooters/E-Scooter batteries.

Should you wish to consider installing sprinkler or drenching protection at your premises please refer to your Insurer and Broker for advice and guidance.

Alarms

Activations of the automatic fire detection, or automatic fire protection systems should raise a site fire alarm to ensure there is an appropriate emergency response and escalation if needed. If not already in place you may wish to consider connecting the alarm to a constantly attended location or an approved Alarm Receiving Centre. An accredited fire alarm installer can provide further guidance and assistance.

Off-Gassing Detection

These systems provide sensor and gas detection for stationary lithium-ion battery systems such as Battery Energy Storage Systems, data centres and electric vehicles whilst under load. Such systems are unlikely to be suitable for the applications discussed in this document, however an accredited fire alarm installer can provide further guidance and assistance if required.

Interlocks

The use of interlocks may help reduce the potential for E-Scooters batteries to enter thermal runaway. As such, the actuation of any of fire protections and alarms should be interlocked to safely de-energise charging equipment. The interlocks should be tested at least annually and restored following any impairment to the fire protection and alarm systems.

Firefighting Water Supplies

It is important to maintain suitable access for the Fire and Rescue Service and consider the distances and location to the nearest source of fire water or hydrant that they may need use. The location and number of fire hydrants in the proximity of the premises should be documented in an emergency response plan or shown on appropriate drawings.

It is also good risk management practice to know what water supplies are available for the Fire and Rescue Service to use. Therefore, site management should always establish:

- What fire water is available.
- With static pressure, flows and residual pressure test results.
- Whether additional resources, such as a private hydrant system or water storage tanks are necessary.

Fire Extinguishers

Fire extinguishers specified for use in tackling lithium-ion battery fires are available, however whilst potentially providing some benefit require very early application and, may not fully extinguish a developing fire involving larger lithium-ion battery arrangements or prevent the batteries reigniting. The volatility of lithium-ion battery fires and their explosive characteristics also presents significant injury risks to persons tackling such a fire in proximity, and as such their use should be carefully considered within the premises Fire Risk Assessment.

Security

A security assessment of the storage/charging arrangements should be undertaken, and appropriate protections installed. The following should be considered, depending on whether external or internal storage and charging facilities are provided:

- Good quality perimeter security e.g., fences, walls.
- Secure compounds.
- Video Surveillance Systems (VSS). Note: Use of thermal VSS camera technology can help identify excessive heat during charging activities or whilst in storage.
- Guarding.
- Alarm provision.
- Security lighting etc.
- Good quality chains and padlocks to compounds.

Key Action Steps

- Ensure appropriate Risk Assessments have been reviewed to include use and charging of E-Scooters/E-Scooter batteries.
- Produce and share a management policy and rules/Standard Operating Procedures.
- Ensure safe storage and charging measures are in place to minimise the risk of fire damage or fire spread in the event of ignition. Contain any internal storage and charging within fire resistance rated enclosures e.g., cabinets and compartments.
- Prohibit the use of aftermarket, modified, aged, non-OEM equipment.
- Complete regular self-inspections to ensure:
 - Equipment and charging locations are in good order (Use thermographic camera where appropriate).
 - Fire detection and fire protections are in normal working order.
 - Housekeeping arrangements are satisfactory.
- Isolate damaged or faulty batteries and arrange for urgent removal by the user or collection by reputable waste handler.
- Introduce emergency procedures and provide appropriate training to relevant stakeholders.
- Ensure fire detection systems and other fire protections are appropriate.
- Review Disaster Recovery and Business Continuity plans.

Checklist

A generic [Electric Bicycles and Electric Scooters Checklist](#) is available, which can be tailored to organisation's needs.

Specialist Partner Solutions

Aviva Risk Management Solutions can offer access to a wide range of risk management products and services at preferential rates via our network of Specialist Partners, including:

- Fire risk assessment: [Cardinus Risk Management](#)
- Explosion/DSEAR Risk Assessments: [Bureau Veritas](#)
- Charging cabinets: [Denios](#)
- Thermographic imaging and PAT testing: [PASS](#)
- Automatic fire detection and portable extinguishers: [SECOM](#)
- Business continuity: [Horizonscan](#)
- Security marking: [Selectamark](#)

For more information please visit: [Aviva Risk Management Solutions – Specialist Partners](#)

Sources and Useful Links

- [The Dangerous Substances and Explosive Atmospheres Regulations 2002.](#)
- [The Regulatory Reform \(Fire Safety\) Order 2005.](#)
- [The Fire Safety \(Scotland\) Regulations 2006.](#)
- [The Fire \(Scotland\) Act 2005.](#)
- [The Fire and Rescue Services \(Northern Ireland\) Order 2006.](#)
- [Fire Safety Guidance Note: GN103 Guidance and principles for the charging and storage for electric powered personal vehicles.](#)
- [BS 5839-1:2017 - Fire detection and fire alarm systems for buildings - Code of practice for design, installation, commissioning, and maintenance of systems in non-domestic premises.](#)
- [LPS 1056: Issue 6.2 Requirements for the LPCB Approval and Listing of Fire Doorsets, Lift Landing Doors and Shutters.](#)
- [LPS 1271: Issue 2.3 Requirements for the LPCB Approval and Listing of Companies Installing Fire or Security Doors, Door-sets, Shutters and Active Smoke/Fire Barriers.](#)
- [LPS 1531: Issue 1.2 Requirements for the LPCB approval and listing of companies installing or applying passive fire protection products.](#)
- [LPS 1197: Issue 4.2 Requirements for the LPCB approval and listing of companies inspecting, repairing, and maintaining fire and security doors, door-sets, shutters, and active smoke/fire barriers.](#)
- [LPS 1048 approved sprinkler contractors - UK and Ireland.](#)
- [LPS 1048: Issue 5.0 Requirements for the approval of sprinkler system contractors in the UK and Ireland.](#)
- [INDG139 Using electric storage batteries safely.](#)
- [Sold Secure.](#)
- [BS EN 14470-1:2023 - Fire safety storage cabinets - Safety storage cabinets for flammable liquids.](#)
- [Redbooklive.](#)

Note: Whilst UK standards and legislation are referenced in this document, other international standards and legislation should be referenced where applicable.

Additional Information

Relevant Loss Prevention Standards include:

- [Business Continuity](#)
- [Contamination Following a Fire](#)
- [Control and Management of Combustible Waste Materials](#)
- [Electrical Installations - Inspection and Testing](#)
- [External and Internal Third-Party Exposures - Property Protection](#)
- [External Building Areas - Usage and Safety](#)
- [Fire Compartmentation](#)
- [Fire Doors, Fire Shutters & Fire Dampers](#)
- [Fire Safety Inspections](#)
- [Fire Safety Legislation](#)
- [Heat and Smoke Venting Systems](#)
- [Housekeeping - Fire Prevention](#)
- [Managing Change - Property](#)
- [Manual Fire Fighting Water Supplies](#)
- [Smoke Contamination](#)
- [Thermographic Surveys](#)

To find out more, please visit [Aviva Risk Management Solutions](#) or speak to one of our advisors.

Email us at riskadvice@aviva.com or call 0345 366 6666.*

*The cost of calls to 03 prefixed numbers are charged at national call rates (charges may vary dependent on your network provider) and are usually included in inclusive minute plans from landlines and mobiles. For our joint protection telephone calls may be recorded and/or monitored.

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