

Outdoor Equipment and Machinery risk review report

Business Sector Risk Review Reports are created for each and every occupancy category held within the FPA/ RISCAuthority Large Loss Fire database where sufficient records exist for meaningful analysis and are updated annually. They are designed to highlight the loss history in each business sector to help inform insurance and risk control choices, and provide brief bespoke best-practice guidance.

This data is best appreciated in association with local information on F&RS response, AFA policy, and firefighting water availability data which is available to RISCAuthority members via the website (www.RISCAuthority.co.uk). The data presented here spans the two years January 2012 to December 2013; the complete database and analytical tools may be accessed by members via the RISCAuthority website.

Other Outdoor Equipment and Machinery

Sub category



Outdoor Equipment and Machinery fires account for **0.4%** of all large loss fires.

Fires involving **Other Outdoor Equipment and Machinery** account for **0.3%** of all large loss fires and **58.3%** of all **Outdoor Equipment and Machinery** fires.

Causation	Accidental	Deliberate	Unknown
Outdoor Equipment and Machinery	9%	27%	64%
Other Outdoor Equipment and Machinery	14%	29%	57%

Time of fire	Midnight - 6am	6am - midday	Midday - 6pm	6pm - midnight
Outdoor Equipment and Machinery	30%		10%	60%
Other Outdoor Equipment and Machinery	33%		17%	50%

Impedances	Access	Acetylene	Inadequate water supply	Resources
Outdoor Equipment and Machinery	67%	33%		
Other Outdoor Equipment and Machinery	50%	50%		

3 Outdoor Equipment and Machinery fires of **12** had impedances, **0** of these had more than one impedance.

2 Other Outdoor Equipment and Machinery fires of **7** had impedances, **0** of these had more than one impedance.

Cost of fire

Outdoor Equipment and Machinery fires account for **0%** of all large loss financial loss, with a mean average cost of **£386,020** per fire.

Other Outdoor Equipment and Machinery fires account for **47%** of all **Outdoor Equipment and Machinery** loss, with a mean average cost of **£285,371** per fire.

Insurance component	Material damage	Business interruption	Contents	Resources	Machine and plant	Stock	Other
Outdoor Equipment and Machinery	20%	7%	12%	0%	17%	4%	39%
Other Outdoor Equipment and Machinery	40%	5%	4%	0%	36%	8%	7%

These statistics are based upon information supplied by loss adjusters to the FPA on a voluntary basis and not all insurers conducting business in the UK contribute to this dataset. They represent only sums paid out where the total loss is in excess of £100K and are deficient of losses under £100K, deductibles, under-insurance, uninsured, self-insured and captively insured components, which may be significant. In a year, total losses captured typically account for 50% of the ABI declared annual fire loss figure - which is similarly deficient of the same components (except the £100K threshold).

FPA BUSINESS SECTOR RISK REVIEW REPORT FOR OUTDOOR EQUIPMENT AND MACHINERY – OTHER

Fire safety legislation

Fire risk assessments should be undertaken for outdoor equipment which forms a workplace or part of a workplace in compliance with the Regulatory Reform (Fire Safety) Regulations 2005 (or equivalent legislation in Scotland and Northern Ireland). It should be noted, however, that a vehicle, trailer or semi-trailer for which a licence is in force is exempt from this requirement. In some instances an assessment may also need to be undertaken in accordance with the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR).

Fire hazards

There are numerous fire hazards associated with outdoor equipment and machinery; these include:

- Deliberate fire setting.
- Sparks produced as a result of welding and cutting of metal using oxyacetylene, oxygen/propane or electric arc welding, and also from grinding discs and other hot work processes.
- Heating from friction as a result of the use of machinery or of hand tools for processes such as drilling, boring and reaming.
- Heat produced as a result of poorly maintained machinery and lack of lubrication.
- Electrical fire hazards from poorly maintained generators, equipment and installations.
- Static electrical charges accumulating from poor bonding and earthing of conductors.
- Storage of fuel for engines and generators.
- Grassland and wildfires caused accidentally or from deliberate ignition.
- Accumulation of combustible and flammable waste materials.

Risk control recommendations

The following risk mitigation measures should be considered to eliminate or reduce the risk of fires involving outdoor equipment and machinery:

- Give careful consideration to the likelihood of deliberate fire raising at the time of the fire risk assessment. Suitable security measures should be implemented to reduce the incidence of fire setting; these may include providing upgraded security systems for vehicles, installing security lighting and introducing a high quality CCTV system.
- Review the fire risk assessment periodically and whenever there are significant changes to the process for which the equipment is used, or changes to the potential sources of ignition and combustible materials present.
- Identify appropriate hazard zones in the DSEAR assessment (where undertaken) and train staff in the implications of these in the context of the materials being handled and the operations being carried out.
- Observe the guidance set out in the *Joint code of practice for fire safety on construction sites* where construction, refurbishment or demolition work is involved.

- Avoid hot work wherever possible. Where there is no practicable alternative to the use of acetylene, minimise the time that acetylene cylinders are held on site.
- Wherever practicable carry out hot work processes in a purpose designed area; control work undertaken outside of this by a hot work permit system.
- Engage competent engineers to maintain plant, vehicles and equipment in accordance with the manufacturers' instructions so as to eliminate potential sources of ignition. Keep suitable records of maintenance and servicing.
- Earth all electrical circuits in accordance with the requirements of BS 7671; extraneous conducting materials should also be bonded and earthed. This is particularly important where volumes of liquids are being transferred between containers. The bonding and earthing should be subject to a programme of inspection and testing as determined by a risk assessment. The results should be recorded.
- Ensure that electrical installations are designed, installed and periodically tested by a competent electrician in accordance with the current edition of BS 7671 (the IET Wiring Regulations). Inspections should be carried out on a risk assessed basis as recommended in the Periodic Inspection Report.
- Provide power tools and other items of portable electrical equipment that are suitable for use outside and arrange for them to be inspected and tested at least in accordance with HS(G) 107 and/or the IET *Code of practice for in-service inspection and testing of electrical equipment*. A risk assessment should be used to determine the actual programme of inspection and testing.
- Replace highly flammable and flammable solvents with non-flammable alternatives wherever possible. Where this is not practicable replace low flash point solvents with those with a higher flashpoint.
- Store cans and drums of flammable solvents and fuels in accordance with RISC Authority Recommendations RC20-2.
- Store all gas cylinders in suitably signed facilities designed for this purpose in accordance with RISC Authority Recommendations RC8.
- Minimise the spread of fire by storing hazardous materials and combustible waste at least 10m from each other and from outdoor plant, equipment or vehicles wherever possible.
- Cut down undergrowth regularly; do not treat it with proprietary chlorate based weedkillers.
- Establish a means of giving warning of fire. On outdoor sites the fire risk assessment may indicate that whistles, klaxons or manually operated sounders may be suitable provided they are clearly audible above background noises in all parts of the workplace and can be readily identified as being a fire alarm.
- Where appropriate, and following a risk assessment, consider installing an automatic fire suppression system designed in accordance with a recognised standard to protect critical plant and equipment.
- Ensure that water supplies in the area are adequate for firefighting purposes; liaise with the local fire and rescue service where appropriate.
- Ensure that access is readily available to the fire and rescue service.
- Have an effective emergency plan in place to ensure the resilience of the business. One way of approaching this is to complete the ROBUST business continuity and incident management planning software available free from <https://robust.riscauthority.co.uk/>

Further information

1. Regulatory Reform (Fire Safety) Order 2005, SI 2005 No 1541, TSO.
2. The Fire (Scotland) Act 2005, asp 5, TSO.
3. Fire Safety (Scotland) Regulations 2006, Scottish SI 2006 No 456, TSO.
4. Fire and Rescue Services (Northern Ireland) Order 2006, SI 2006 No 1254 (NI9), TSO.
5. Fire Safety Regulations (Northern Ireland) 2010, SI 2010 No 325 (NI), TSO.
6. Dangerous Substances and Explosive Atmospheres Regulations (DSEAR), 2002, SI 2002 No 2776, TSO.
7. *RC7 Recommendations for hot work*, 2012, FPA.
8. *RC8 Recommendations for the storage, use and handling of common industrial gases in cylinders including LPG*, 2012, FPA.
9. *RC20 Recommendations for fire safety in the storage and use of highly flammable and flammable liquids: Part 1: General principles*, 2006, FPA.
10. *RC20 Recommendations for fire safety in the storage and use of highly flammable and flammable liquids: Part 2: Storage in drums, cans and containers other than external fixed tanks*, 2007, FPA.
11. *RC49 Recommendations for reducing business interruption, Part 1: Acetylene cylinders involved in fires*, 2007, FPA.
12. *Business resilience: A guide to protecting your business and its people*, 2005, FPA.
13. ROBUST software (Resilient Business Software Toolkit): <https://robust.riscauthority.co.uk>
14. *Joint code of practice for fire safety on construction sites. Eighth edition*, 2012, FPA.
15. BS 5839-1: *Fire detection and fire alarm systems for buildings: Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises*, 2013, BSI.
16. *LPC Rules for automatic sprinkler installations incorporating BS EN 12845: (Fixed firefighting systems. Automatic sprinkler systems. Design, installation and maintenance, BSI)*, 2009, FPA.
17. *Fire safety risk assessment: Factories and Warehouses*, 2006, DCLG.

Case histories

1. Firefighters were called to tackle a blaze at a sweet factory after a waste unit caught fire. Crews from the fire and rescue service were called to the factory at 07:15 on Sunday morning. A spokesman said the fire started in the waste compactor unit. Two crews used a hose jet to dampen the blaze and remained at the scene for about two hours.
2. Two fire engines were despatched after a report of a dumper truck on fire. Upon arrival crews found the dumper truck well alight and set to work using two sets of breathing apparatus and one hose reel jet. The fire left the truck severely damaged.
3. An inquiry over a suspected arson attack on three tankers at a fuel depot has been closed by police. The fire on 16 November caused £500,000 of damage and led to the arrest of a 20-year-old man on suspicion of arson. He has since been released from bail. The police service said there were no active lines of inquiry and it would re-open the case if new information emerged. About 35,750 litres of fuel were destroyed in the fire, with flames rising up to 50ft (15m) in the air. Residents in the area were warned to stay indoors and a nearby main road closed to traffic while the fire was put under control.