Fire Protection Association
Fire and Risk Services

RISCAuthority

Non Residential - Misc. **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.

Vehicle Repair

Sub category

Non Residential - Misc. fires account for **10.5%** of all large loss fires.
Fires involving **Vehicle Repair** account for **2.6%** of all large loss fires and **25.1%** of all **Non Residential - Misc.** fires.

Causation	*Accidental*	*Deliberate*	*Unknown*
Non Residential - Misc.	43%	27%	30%
Vehicle Repair	53%	26%	22%

Time of fire	*Midnight - 6am*	*6am - midday*	*Midday - 6pm*	*6pm - midnight*
Non Residential - Misc.	32%	14%	20%	34%
Vehicle Repair	25%	12%	32%	32%

Impedances	*Access*	*Acetylene*	*Inadequate water supply*	*Resources*
Non Residential - Misc.	35%	37%	21%	6%
Vehicle Repair	24%	64%	12%	

54 Non Residential - Misc. fires of **295** had impedances, **6** of these had more than one impedance.
22 Vehicle Repair fires of **74** had impedances, **3** of these had more than one impedance.

Cost of fire

Non Residential - Misc. fires account for **13%** of all large loss financial loss, with a mean average cost of **£946,074** per fire.
Vehicle Repair fires account for **11%** of all **Non Residential - Misc.** loss, with a mean average cost of **£427,825** per fire.

Insurance component	*Material damage*	*Business interruption*	*Contents*	*Resources*	*Machine and plant*	*Stock*	*Other*
Non Residential - Misc.	78%	7%	3%	6%	2%	1%	2%
Vehicle Repair	46%	18%	3%	2%	6%	2%	8%

*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, underinsurance, 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 NON RESIDENTIAL MISCELLANEOUS – VEHICLE REPAIR

Fire safety legislation

In common with virtually all businesses, a fire risk assessment should be undertaken in compliance with the Regulatory Reform (Fire Safety) Order 2005 (or equivalent legislation in Scotland and Northern Ireland) for all vehicle repair workshops and similar premises. In many cases assessments may also be required in accordance with the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR).

The Petroleum Consolidation Act 1928 (as amended by DSEAR) should also be observed if the business involves the operation of a petrol filling station. In these cases a licence should be issued by the local Petroleum Licensing Authority.

Fire hazards

In addition to the potential ignition sources present in most businesses, there are a number of additional hazards that may be associated with vehicle repair workshops. These may include:

- Cylinders of acetylene stored on the premises.
- Bulk supplies of diesel fuel, petroleum and LPG on the premises.
- Fuelling of vehicles and draining of fuel tanks during maintenance or repair.
- The presence of workshop pits in which flammable vapours may accumulate.
- Bodywork spray booths or other designated areas set aside for this purpose
- Poor access arrangements for firefighters and firefighting vehicles.
- Breaches of the fire compartmentation of the building.
- Combustible materials and waste (including waste oil) stored outside.

In all cases, fire hazards may include:

- Hot surfaces of engines, exhaust pipes and catalytic converters.
- Sparks produced as a result of welding and cutting of metal using oxyacetylene, oxygen/propane, electric arc welding and other hot work processes.
- Deliberate fire raising.
- Lighting equipment.
- Space heating equipment.
- Electrical fire hazards from poorly maintained equipment and installations.

Risk control recommendations

The following risk mitigation measures should be considered to eliminate or reduce the risk of fire in vehicle repair workshops:

- Ensure that measures identified in the fire risk and DSEAR assessments are implemented effectively by competent persons.
- At the time of the risk assessments give careful consideration to the likelihood of deliberate fire setting and the implementation of suitable measures to maintain the security of the workshops and any associated buildings, especially during hours of darkness.
- Review the risk assessments whenever there are significant changes to the number of staff working in the facility, the layout of the premises or the nature of the work being undertaken.
- Employ the 'VICES' acronym when undertaking the DSEAR assessment on the site. (Ventilation, Ignition, Containment, Exchange and Separation.)
- Identify appropriate hazard zones in the DSEAR assessment and train staff in the implications of these in the context of the materials being handled and the operations being carried out.
- Eliminate hot work wherever possible. When hot work cannot be avoided, eliminate the use of acetylene by using other forms of welding and cutting if practicable. Control the work by use of a hot work permit system.
- Eliminate the use of acetylene on the premises if possible. If not, minimise the number of acetylene cylinders held on site.
- Store gas cylinders outside the premises in accordance with the requirements of RISCAuthority Recommendations RC8. Where this is not possible, store gas cylinders in a proprietary cabinet providing at least 60-minutes' fire resistance.
- Store flammable liquids in proprietary cabinets designed for this purpose and which will provide at least 60-minutes' fire resistance.
- Avoid draining fuel tanks in the workshop. When the draining of tanks is unavoidable, ensure that the work is carefully planned and well supervised.
- Provide materials to clean up spillages of fuel and train staff to use them promptly and effectively. Store contaminated cleaning agents outside the premises in a metal container with a metal lid.
- Minimise the storage of combustible waste outside the premises. Wherever practicable, it should be stored in metal skips or bins sited at least 10m clear of all buildings and 2m away from boundary walls or fences.
- Minimise the spread of fire by effective fire compartmentation between workshop areas and those used for other purposes.
- Following any work that requires breaching the fire compartmentation ensure that suitable fire stopping is undertaken in accordance with the *FPA Design guide* to maintain the designed fire rating of the structural elements concerned.
- Protect the facility by installing space heating in accordance with RISCAuthority Recommendations RC18.
- 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.
- Arrange for portable electrical equipment 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. The period between successive inspections and tests should be determined by a risk assessment.
- Ensure that electrical equipment provided in hazard zones identified in the DSEAR assessment (such as lighting in workshop pits) is appropriate for the zone in which it is installed. (Further information is set out in BS EN 60079-10).
- Replace flammable paints used in spray booths with those of reduced flammability or water based systems where possible. Manage spray painting processes in accordance with RISCAuthority Recommendations RC31.
- Protect the building by an automatic fire detection and alarm system designed to take into account the need for property protection. The system should be installed by an organisation certificated by an independent UKAS accredited third party certification body. The installation should be to a recognised category of installation in accordance with BS 5839-1 as determined by a risk assessment and in consultation with the insurer.
- Monitor the automatic fire detection and alarm system either on-site or by an off-site alarm receiving centre certificated by an independent UKAS accredited third party certification body, and operating in accordance with a Category II facility as defined in BS 5979.
- Give serious consideration to the installation of an automatic fire suppression system, such as water sprinklers, when the facility is at the design stage. Sprinkler systems should be designed, installed, commissioned and maintained in accordance with the *LPC Sprinkler Rules incorporating BS EN 12845* by a company certificated by an independent UKAS accredited third party certification body.
- Provide a suitable number of appropriate portable fire extinguishers which are immediately accessible in the case of a fire. Portable extinguishers should be approved and certificated by an independent, third party certification body and be installed in accordance with BS 5306-8 and inspected and maintained in compliance with BS 5306-3. Designated staff should be trained in their use.
- Liaise with the local fire and rescue service to ensure that water supplies are adequate for the sprinkler installation and for firefighting purposes. Also ensure that access to the site and to hydrants is kept clear at all times.
- Display appropriate hazardous material warning signs where necessary at the entrance to the site.
- 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. Petroleum Consolidation Act 1928, 18 & 19 Geo.5. Ch 32, TSO.
8. BS 5839-1: 2013: *Fire detection and fire alarm systems for buildings. Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises*, BSI.
9. BS 5306-3: 2009: *Fire extinguishing installations and equipment on premises. Commissioning and maintenance of portable fire extinguishers. Code of practice*, BSI.
10. BS 5306-8: 2012: *Fire extinguishing installations and equipment on premises. Selection and positioning of portable fire extinguishers. Code of practice*, BSI.
11. BS 5979: 2007: *Remote centres receiving signals from fire and security systems. Code of practice*, BSI.
12. BS 7671: 2008 +A1: 2011 +A2: 2013: *Requirements for electrical installations (IET Wiring Regulations)*, BSI.
13. BS EN 14470-1: 2004: *Fire safety storage cabinets. Safety storage cabinets for flammable liquids*, BSI.
14. BS EN 14470-2: 2006: *Fire safety storage cabinets. Safety cabinets for pressurised gas cylinders*, BSI.
15. BS EN 60079-10: 2003: *Electrical apparatus for explosive gas atmospheres: Classification of hazardous atmospheres*, BSI.
16. RC7 *Recommendations for hot work*, 2012, FPA.
17. RC8 *Recommendations for the storage, use and handling of common industrial gases in cylinders including LPG*, 2012.
18. RC31 *Recommendations for fire safety in automotive refinishing and paint spraying processes*, 2008, FPA.
19. RC49 *Recommendations for reducing business interruption, Part 1: Acetylene cylinders involved in fires*, 2007, FPA.
20. *Business resilience: A guide to protecting your business and its people*, 2005, FPA.
21. ROBUST software (Resilient Business Software Toolkit): https://robust.riscauthority.co.uk
22. *LPC Rules for automatic sprinkler installations incorporating BS EN 12845: (Fixed firefighting systems. Automatic sprinkler systems. Design, installation and maintenance, BSI)*, 2009, FPA.
23. *FPA Design guide: The protection of buildings: Core document: Protection of openings and service penetrations from fire*, 2005, FPA.
24. HS(G) 107: *Maintaining portable and transportable electrical equipment*, 2004, HSE.
25. *Code of Practice for in-service inspection and testing of electrical equipment*, 2012, Institution of Engineering and Technology (IET).
26. *Fire safety risk assessment: Transport premises and facilities*, 2006, DCLG.

Case histories

1. Four fire engines responded to multiple calls about a blaze at a vehicle workshop, firefighting crews arrived and found a total of 13 cars well alight at the back of the property. Four firefighters wearing breathing apparatus used two jets to put out the flames. A 69-year-old man, who lives nearby, needed medical treatment after reporting breathing difficulties as a result of the incident. An expert fire investigator attended the scene the morning after the fire to conduct an examination of the scene and confirmed that the fire was started deliberately.