Loss Prevention Standards – Asset Classes

Material Damage Risk Assessment

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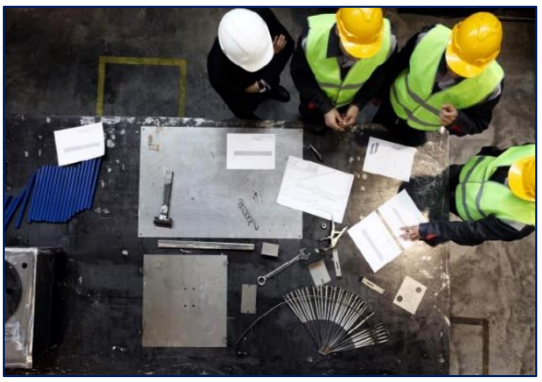
Standard fire risk assessments primarily focus on protecting life, but it is also important for businesses to identify and assess the range of risks that can impact and/or interrupt an organisation.

This Loss Prevention Standard discusses the main risk concerns and provides guidance on conducting material damage risk assessments.

AVIVA

Material Damage Risk Assessment

Introduction



Material Damage Risk Assessments (MDRA) are critical for safeguarding assets, ensuring business continuity, and protecting the financial health of organisations. This Loss Prevention Standard provides guidance for evaluating property risks, encompassing factors that impact the safety, security, and resilience of buildings and their contents.

MDRAs systematically identify, analyse, and address potential hazards, significantly reducing vulnerability to losses from fire, natural disasters, security breaches, and other perils. Failure to identify risks can lead to unnecessary long-term business interruption and serious financial loss.

Note: The focus in this Loss Prevention Standard is towards property loss prevention and related risk management guidance and is not intended to address liability exposures. The presumption is that all regulatory requirements, such as Fire Risk Assessments, have been met.

Objectives of MDRA

The primary objectives of an MDRA are to:

- Systematically identify and evaluate potential risks to property and assets.
- Assess the effectiveness of existing risk control measures.
- Recommend practical improvements to enhance property protection and business resilience.

By addressing these objectives, organisations can proactively safeguard their physical assets, reduce the likelihood of loss or damage, and ensure continuity of operations in the event of an incident.

Assessing the Risk of Potential Impacts

Whilst a fire risk assessment is mandatory, in England and Wales under the Regulatory Reform (Fire Safety) Order 2005, in Scotland under the Fire (Scotland) Act 2005 supported by the Fire Safety (Scotland) Regulations 2006 and in Northern Ireland the Fire and Rescue Services (Northern Ireland) Order 2006 supported by the Fire Safety Regulations (Northern Ireland) 2010, these regulations primarily focus on life safety, whereas MDRAs encompass a broader scope of property protection.

A crucial aspect of MDRA is evaluating the potential impacts of identified hazards on properties and assets. This process involves a comprehensive analysis of various risk factors and their potential consequences. Assessors must consider both the likelihood and severity of potential incidents, ranging from minor damage to catastrophic loss. This evaluation encompasses direct physical damage to structures and contents, as well as indirect impacts such as business interruption and reputational damage.

The assessment should utilise a data-driven approach, incorporating historical loss data, property-specific information (such as location, construction materials, and occupancy type), and advanced predictive analytics. Risk quantification techniques, scenarios, provide a structured framework for understanding potential impacts. These assessments guide property managers / owners in prioritising risk mitigation efforts and capital expenditures.

Conducting a Material Damage Risk Assessment

The primary objective of a MDRA is to systematically identify and evaluate potential risks to property and assets, ensuring that all vulnerabilities are thoroughly understood. This process involves assessing the effectiveness of existing risk control measures to determine whether they adequately mitigate identified hazards or require enhancement. Additionally, the assessment aims to recommend practical improvements that enhance property protection and support business resilience. By addressing these objectives, organisations can proactively safeguard their physical assets, reduce the likelihood of loss or damage, and ensure continuity of operations in the event of an incident. This comprehensive approach not only minimises financial and operational disruptions but also strengthens overall risk management strategies.

This assessment should cover all aspects of the property, including:

- Construction and building materials.
- Occupancy hazards.
- Maintenance regimes.
- Utilities.
- Fire detection and protection systems.
- Security measures.
- Natural and man-made perils.

Assessment Process

Understanding the key assets and activities of your site.

Begin by identifying and documenting the key assets and activities at the site, including:

- Buildings and structures.
- Critical equipment and machinery.
- Inventory and stock.
- Utilities and infrastructure.
- Key business processes and operations.

This step provides a foundation for understanding what needs to be protected and the potential impacts and loss estimates of various risks.

Identifying Potential Threats and Impacts

Consider likely threats and their potential impacts on the identified assets and activities. These may include:

- Fire and its effects (smoke, acid gases).
- External exposures (proximity to other buildings, combustible material storage).
- Security risks (theft, vandalism, terrorism).
- Maintenance activities and contractor-related hazards.
- Natural perils (flood, wind, freezing).
- Escape of fluids.
- Impact from third parties.

For each threat, assess both the likelihood and severity of potential incidents, ranging from minor damage to catastrophic loss. Consider direct physical damage as well as indirect impacts such as business interruption and reputational damage.

Conducting the Assessment

The assessment should:

- Challenge existing arrangements, precautions, and management systems.
- Highlight weaknesses in current risk control measures.
- Develop additional precautions or protection solutions.
- Suggest improvements to existing procedures and controls.

Assessor qualifications are crucial. The person(s) responsible for carrying out or leading the assessment should:

- Be suitably trained in risk assessment techniques.
- Have good hazard/risk awareness.
- Possess detailed knowledge of the site.
- Understand or have access to individuals who understand business operations.

Documenting Findings and Recommendations

Prepare a comprehensive report that includes:

- Detailed description of identified risks.
- Assessment of relevant risk factors.
- Overall risk evaluation.
- Appraisal of existing protection systems.
- Cost-effective measures for risk mitigation.

Key Areas of Assessment

Construction and Building Materials

- Evaluate the structural integrity, fire resistance ratings, and compliance with building regulations, standards and codes.
- Assess fire compartmentation, including fire barriers, doors, and penetration seals.
- Consider the impact of modern building techniques and materials on fire safety.

Occupancy Hazards

- Evaluate risks associated with specific building uses and occupancies.
- Assess storage practices for combustible materials and hazardous substances.
- In industrial settings, evaluate process risks, including dust explosion hazards.

Fire Detection and Protection Systems

- Assess the adequacy of fire detection systems, including coverage and maintenance.
- Evaluate fire suppression systems, such as sprinklers and gaseous systems.
- Review fire alarm and evacuation procedures.

Security Measures

- Evaluate physical security measures, including perimeter security and access control.
- Assess the effectiveness of security systems like CCTV and intruder alarms.
- Review procedures for managing valuable or sensitive assets.

Maintenance Regimes

- Review maintenance schedules for critical equipment and systems.
- Evaluate preventive maintenance programs and condition monitoring techniques.
- Assess contractor management and control procedures.

Utilities

- Evaluate the reliability and redundancy of power supplies.
- Assess electrical systems for fire risks and maintenance issues.
- Review gas and water supply systems, including emergency isolation procedures.

Natural and Man-made Perils

- Assess flood risks, considering both river and surface water flooding.
- Evaluate wind risks, focusing on building design, age, and condition.
- Where relevant, consider earthquake risks and seismic retrofitting measures.
- Assess risks from neighbouring properties and transportation routes.

Regular Review

- MDRAs should be considered a 'live process' and regularly reviewed, especially when there are changes to the:
  - ✓ Site.
  - ✓ Activities.
  - ✓ Management or key personnel.

Additionally, link your MDRA to a forward-looking strategic development plan, projecting one, three, and five years into the future. This enables your business to implement strategies that are robust for both present and future needs.

Additional Information

Whilst this LPS focuses primarily on property and MDRA, it's important to note the relationship between this process and Business Impact Analysis (BIA). A BIA complements MDRA by predicting the consequences of business disruptions and gathering information needed to develop recovery strategies. Organisations should consider conducting a separate BIA to fully understand the operational and financial impacts of potential incidents on their business continuity.

By implementing a comprehensive MDRA process, organisations can significantly enhance their ability to protect assets, minimise potential losses, and ensure business resilience in the face of various threats and hazards.

Checklist

A generic **Material Damage Risk Assessment - Checklist**, which should be tailored to your own organisation's needs, is presented in Appendix One.

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For more information please visit:

Aviva Risk Management Solutions – Specialist Partners

Sources and Useful Links

NFPA 80A – recommended practice for protection of buildings from exterior fire exposures

Building Risk Evaluation Tool | Fire Protection Association

Fire prevention plans: environmental permits - GOV.UK

ISO 31000:2018 - Risk management — Guidelines

Additional Information

Relevant Loss Prevention Standards include:

- **Escape of Water and Other Fluids**
- **Fire Compartmentation**
- **Fire Doors, Fire Dampers and Fire Shutters**
- **Fire Safety Inspections**
- **Fire Safety Legislation**
- **Flood Guidance and Mitigation (UK)**
- **Flood Guidance and Mitigation (Global)**
- **Smoke Contamination**
- **Business Impact Analysis**
- **Business Continuity management**

To find out more, speak to our advisors or visit Aviva Risk Management Solutions.

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.

Material Damage Risk Assessment – Checklist

Location	
Date	
Completed by (name and signature)	

	Risk Identification and Assessment	Y/N	Comments
1.	• Has a comprehensive risk assessment been conducted to identify potential material damage hazards and control of occupancy fire hazard? • Has a Business Impact Assessment been undertaken?		
2.	• What is the material of construction? • Please refer to LPCB book volume 1 – list of approved fire and security products and services		
3.	Have all critical assets and their vulnerabilities been identified and documented?		
4.	Has the likelihood and severity of each identified risk been evaluated using a risk matrix?		
5.	Have historical loss data and incident reports been reviewed to inform the risk assessment?		
6.	Is there a plan for rapid response and recovery following a material damage incident?		
7.	Are staff trained in emergency procedures related to material damage risks?		
8.	Is there a system in place to regularly review and update risk assessments? E.g. DSEAR assessment, Fire Risk Assessment Have all action points raised within the assessments been undertaken and closed out?		
9.	Has the asbestos register been reviewed and updated to reflect the current status?		

	Fire Safety Measures	Y/N	Comments
10.	Is there a fully operational fire detection system installed throughout the premises?		
11.	Does the fire alarm system conform to BS 5839-1 and is it regularly maintained?		
12.	• Are flammable materials and combustibles properly stored and managed? • Is waste regularly cleared to an external skip, kept 10m from the property?		
13.	Have fire compartmentation measures been inspected and maintained?		
14.	Are any automatic fire shutters operational and maintained?		
15.	Are there hydrants in the vicinity? Have they been assessed for adequacy?		
16.	Is the location of the nearest fire service satisfactory?		
17.	Is smoking and vaping prohibited within the building? Is there a designated smoking area on site?		
18.	Fire extinguishers in place and been maintained within the last year?		

	Environmental and Natural Hazards	Y/N	Comments
19.	Has the risk of flooding been assessed and mitigated where necessary?		
20.	Are measures in place to protect against storm damage?		
21.	Is the building structure regularly inspected for signs of wear or damage?		
22.	Are drainage systems and gutters regularly maintained?		

	Security Measures	Y/N	Comments
23.	Is there a fully operational intruder alarm system with remote monitoring?		
24.	Are all entry points (doors, windows, skylights) adequately secured?		
25.	Is there a functional CCTV system covering vulnerable areas?		
26.	Are access control measures in place for authorised personnel?		
27.	Is external lighting sufficient to deter intruders?		
28.	Have metal fixtures been treated with forensic marking compounds?		
29.	Are warning notices or window stickers displayed stating that items are security marked?		
30.	Have photographs been taken of any valuable or historic items left on the premises?		
31.	If key boxes are used, are they tested and certified to LPS 1175 Security Rating Level 1 or higher?		
32.	Are valuable or sensitive items stored securely?		
33.	Is the site secure e.g. fencing around the property?		

	Elements of a Site - Supporting Information	Y/N	Comments
34.	• Electrical supply: ✓ Mains? ✓ Backup? ✓ Emergency? ✓ Uninterruptible? • Are electrical systems regularly inspected and tested by qualified professionals? • Have the electrics been inspected and tested by a competent electrical contractor? • Have portable appliance testing been undertaken? • Are there any exposed or damaged live electrical wiring that needs to be addressed?		
35.	• Gas supply: ✓ Mains? ✓ Site stored? • Has the gas supply been regularly inspected and tested by qualified professionals? • Is the gas supply linked to the fire alarm, so it automatically shuts off the supply in the event of activation?		
36.	Water supplies?		
37.	Telephone networks?		
38.	• IT infrastructure: ✓ Internet-based activities ✓ Intranet-based activities ✓ Data storage and server rooms		
39.	Heating and ventilation, including physical location of any air intakes in place and regularly tested?		
40.	Boilers, steam and hot water?		
41.	Chilling systems?		
42.	Compressed air?		
43.	Other utilities?		

44.	Control rooms and control systems?		
45.	Raw materials storage?		
46.	Process lines?		
47.	Packing lines?		
48.	Finished goods storage?		
49.	Receiving, unloading and dispatch?		
50.	Raw materials supply chain?		
51.	Finished goods customers ?		
52.	Research and development, including laboratories?		
53.	Quality control, quality assurance including samples, archives?		
54.	Canteen/support services?		
55.	Contractor controls in place e.g. hot work permit, RAMS, Insurance		
56.	• Is there a maintenance schedule for critical machinery and equipment? • Are backup power systems in place and regularly tested? • Have thermographic scanning been undertaken?		

	Storage and Handling of Goods	Y/N	Comments
57.	Is there a system in place for proper handling and storage of hazardous materials?		
58.	Are storage areas organised to minimize the risk of damage to goods?		
59.	Is there adequate protection against water damage for stored items?		
60.	Are critical documents and data backed up and stored securely off-site?		

	Business Continuity and Recovery	Y/N	Comments
61.	Is there a system in place for proper handling and storage of hazardous materials?		
62.	Are storage areas organised to minimize the risk of damage to goods?		
63.	Is there adequate protection against water damage for stored items?		
	Additional comments:		

Please Note

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