

Loss prevention standards

Balcony and Terrace Safety: Residential Buildings

Raising risk awareness and providing loss prevention guidance associated with residential balconies and terraces.



Balcony and Terrace Safety: Residential Buildings



Introduction

Residential balconies, terraces and roof top terraces continue to generate a number of claims each year, with incidents ranging from fire to structural collapse. Fires attributable to smoking, barbecues and arson on balconies and terraces are a regular occurrence, and can lead to significant property damage, interruption as well as additional costs, such as the need of alternative accommodation for residents.

This document is aimed at residential building owners and persons responsible for managing residential buildings. It provides guidance to reduce the potential for property damage and risks to life.

The document and links contained within are designed to provide information and guidance and is not intended to be and should not be relied on as specific advice.



High-Rise Living

The number of high-rise residential buildings increases year on year and is set to increase further, with large numbers of high-rise residential properties under construction and planned, in order to meet housing needs and demand for high-rise living.

The desire for private outside space in multi-storey properties in the form of balconies and terraces brings with it a host of risks and increased exposures. It is essential that these are identified and that appropriate control measures are implemented, managed and monitored going forward to prevent property damage and/or loss of life.

Government action has been taken (Building Regulations - Regulation 7(2)) to address the risk of external fire spread requiring elements of walls including balconies to be of a non-combustible construction on new buildings of 18 metres and above, and for all other multi-storey residential buildings regardless of height, to be assessed for the risk of external fire spread. This together with clear advice from the fire brigade not to use barbecues and avoid smoking goes some way to reducing the risk of balcony and terrace fires/external fire spread.

Main Causes of Fire and Aviva Guidance

BRE Global (Building Research Establishment), published the report: [Fire Safety Issues with Balconies \(2016\)](#), which investigated fires that had started on balconies. The report found that balcony fires are increasing in frequency and identified the main causes to be:

- Careless disposal of smoking material
- Barbecue misuse
- Arson

Aviva Guidance

Guidance for the prevention of fires on balconies and terraces, along with the prevention of fire spread include:

- Smoking to be prohibited;
- Barbecues/cooking appliances, forms of heating and use of candles/naked flames to be prohibited;
- Arson prevention measures need to be taken;
- Avoidance of combustible storage/combustible furniture on the balcony or terrace;
- Construction elements including decking to be of non-combustible materials.

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Hazards and Exposures

Balcony and terrace design, construction materials, age, maintenance along with residents' use introduce a wide range of hazards and exposures. These include:

- Construction
 - Combustible materials may be used in balconies and terraces and adjoining wall or roofing systems. These bring the potential for rapid fire spread across the external building façade both horizontally and vertically involving multiple balconies (balcony fire jumping), compromising internal compartmentation;
 - Fire may spread internally, into apartments;
 - Fire may spread externally to the roof and within the roof void. This risk is exacerbated where there are combustible elements of building construction beneath roof top terraces, including roof frame, deck, waterproof covering and insulation as well as terrace decking materials;
 - Oversized gaps between decking, allowing combustible matter to fall between them, providing a source of dry, easily-ignited combustible material (e.g. a dropped cigarette);
 - Collapse of the balcony can occur due to poor design/installation or being over weighted, or using inappropriate materials of construction (e.g. unsuitable for wind loads or corrosion in coastal locations);
 - Decorative balconies not intended for persons use (sitting/standing), particularly in older properties.

- Condition

The condition of the balcony or terrace may deteriorate, in particular;

 - It may lose structural integrity, e.g. frame, joists, decking and balustrades;
 - It may become damaged due to wear and tear, age and corrosion;
 - There may be damage to external wall systems close to balconies, exposing combustible insulation and cavities;
 - The fire-retardant coating of combustible elements may deteriorate and require retreatment.

- Fire Inception

The following are fire inception hazards commonly associated with fires on or involving balconies/terraces:

 - Smoking, causing ignition of combustibles. This includes unsafe disposal of smoking materials which can cause ignition of combustibles beneath decking (leaves, waste, insulation), items on balconies below, waste, dry vegetation and woodchip bark;
 - Barbeques and cooking appliances;
 - Candles, oil/paraffin lamps and incense;
 - Patio heaters (electric/gas), firepits and chiminea;
 - Festive lights and external lighting;
 - Fireworks and Chinese lanterns (both use of and landing on);
 - Electrical appliances, circuit overload and trailing cables;
 - Battery charging, including mobile phones;
 - Arson/malicious ignition/horseplay;
 - Hot works operations during maintenance.

- Fire Load
The fire load on a balcony/terrace often contributes significantly to the severity of the fire with the following features adding to the fire load:
 - Combustible balcony/terrace construction: decking, joists, cassettes, soffits and insulation;
 - Furniture: excessive combustible furniture/items: wicker/soft cushions/blankets;
 - Storage of non-balcony/terrace related items;
 - Storage facilities: chests/sheds;
 - Fuel for barbeques and firepits, etc. (gas cylinders/charcoal/timber & highly flammable fuels);
 - Waste storage;
 - Privacy partitions and screens (bamboo/fabric/plastic, etc.);
 - Living walls/dry vegetation/plants and combustible plant pots.

Construction Materials

Walls including balconies

Aviva recommends the use of non-combustible materials in the construction of all buildings, including balconies and terraces, and the substitution of combustible elements where present to reduce the potential for fire, fire spread and extensive property damage.

Government action has been taken to address the risk of external fire spread for life safety purposes, requiring elements of walls including balconies to be of a non-combustible construction.

Revisions to Building Regulations (Regulation 7(2)) introduced in December 2018, require all elements of walls including balconies on new buildings of 18 metres and above in height (11 metres in Scotland effective 01.10.2020) to be constructed of a non-combustible material (classified as A1 or A2-s1, d0).

Existing buildings of all heights may however have balconies constructed using combustible materials.

In accordance with the functional Requirement B4 of Schedule 1 to the Building Regulations, “*external walls of buildings, of any height, should not assist the spread of fire over the walls*”. Balconies constructed with combustible materials may therefore not meet an appropriate standard of safety and could pose a risk to the health and safety of residents and other building users.

[Approved Document B Volume 2: Buildings other than dwellings – B4 paragraph 12.1](#) also sets out that “*The external wall of a building should not provide a medium for fire spread if that is likely to be a risk to health and safety.*”

To address concerns that balconies including combustible materials may assist the spread of fire over the walls and may not meet an appropriate standard of safety, posing a risk to the health and safety of residents and other building users, the ‘Ministry of Housing, Communities and Local Government’ in January 2020 issued: [Advice for Building Owners of Multi-storey, Multi-occupied Residential Buildings](#). This advice applies to all multi-storey and multi-occupied residential buildings, the height of which is immaterial.

Balcony specific advice contained within ‘Section 7 – Balconies’, provides guidance to building owners and persons responsible, to:

- Understand the materials used in the construction of balconies
Enables a better understanding of the associated risk of external fire spread, to take appropriate action.
- Remove and replace combustible material used in balcony construction
This being the clearest way to prevent external fire spread from balconies and therefore to meet the intention of building regulation requirements. This should occur as soon as practical.

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- Seek professional advice where there is doubt over the materials used, or risk presented. Where combustible materials have been used and it is assessed that there is a notable risk of fire spread as a result, professional advice should be sought, and appropriate action taken to address that risk.
- Check adequate and appropriate measures are in place to manage fire safety of external wall systems. Risks arising from balconies are to be considered as part of the fire risk assessment and information be provided to residents.
- Be mindful of potential fire risk associated with fires on balconies from their incorporation into the building, as concluded within BRE report 'Fire Safety issues with Balconies (2016)'.

Management and Controls

Risk Assessments

It is a legal requirement for a responsible person (as defined within the [Regulatory Reform \(Fire Safety\) Order 2005](#)) to have an up to date fire risk assessment and to take precautions for buildings within the scope of the safety order. Fire risk assessments should take into account the principles set out in the ['Advice for Fire Safety in Purpose-Built Blocks of Flats Guidance'](#) published by the Local Government Association.

Any fire risk assessment should also take account of the presence, use, condition and combustibility of balconies and terraces which may result in a fire and assist fire spread. The likely fire performance of external walls and roofs should also be taken into account. All features are to be considered together and not in isolation.

Assessing Risks

A full understanding and appreciation of risks associated with balconies and terraces is required to undertake a comprehensive risk assessment.

In addition to the hazards and exposures listed, consideration should also be given to:

- Main causes of balcony fires (barbeques, smoking and arson) and how these can be addressed;
- Stronger wind speeds at high level. How this may affect candles, smoking materials, heaters & barbeques;
- Proximity of ignition sources to combustibles;
- Risk of leaving potential ignition sources unattended;
- Safe disposal arrangements of smoking materials;
- Proximity of communal waste storage facilities to nearest balconies and waste storage arrangements;
- Balconies and terraces as an additional means of escape;
- Modification to original design;
- Specific balcony and terrace construction features, risks presented and how these need to be managed to prevent damage/structural failure;
- Risks associated with balcony/terrace and component replacement, ensuring a planned replacement procedure is in place with **appropriate controls, including 'hot works' procedures** where required.

Rules/Leases and Enforcement

Local property rules and obligations of owners and occupants, in addition to those contained within leases are to be fully understood and implemented. Where local rules do not exist, consideration should be given to formally drawing up rules, communicated to residents and incorporating within a welcome pack to all new residents.

Responsibility does not end there, compliance needs to be enforced with regular inspections undertaken. Leases often strictly prohibit use of barbeques along with smoking on balconies and terraces. Where this is omitted, inclusion of use of barbeques and **smoking within 'Prohibited Activities'** of local rules, along with heaters and candles should be considered.

Inspections

Regular inspections of balconies and terraces should be undertaken to ensure existing rules and control measures are being adhered to as well as identifying other potential hazards. The use of a formal balcony and terrace checklist is advised.

Education

Residents should be informed of the risks associated with balcony and terrace usage, by way of clearly displayed information on a notice board within individual buildings along with regular flyers/reminders, particularly in the run-up to and during warmer periods and Bank Holidays where there will be a greater desire to use outside space. This should state local rules, reminders of constraints within lease agreements and a means of notification of balcony and terrace misuse.

Fire brigade advice “Never use a **barbeque on a balcony**” should be clearly stated.

Loss Prevention Guidance

Where risk features are identified as posing a risk to the property and associated business activities, health & safety of residents and other building users, appropriate control measures should be implemented at the earliest opportunity and be monitored.

Residents should be informed and regularly reminded of the risks presented and of the duty they have, to prevent property damage and to the safety of others.

With an increasing number of properties containing balconies/terraces and the main cause of balcony fires identified as being barbeque use, smoking and arson, consideration should be given to the implementation of a specific fire strategy to prevent and reduce the frequency of fire related incidents occurring.

Use of barbeques on balconies and terraces should be prohibited and this rule should be strictly enforced, supporting fire brigade advice. All other forms of cooking, heating and use of candles/naked flames should also be prohibited.

Where possible, smoking should be prohibited and this rule enforced, otherwise advice should be provided to residents to avoid accidental ignition along with careless disposal which can lead to fire.

The exposure to arson and fire spread, by the reduction/removal/substitution of combustibles and furniture should also be addressed. For example, consider replacing timber and composite decking with aluminium decking/materials certified to A1 or A2-s1, d0.

Providing automatic sprinkler systems within apartments is an effective means of helping to prevent fire spread from balconies and terraces into apartments whilst maintaining integrity of internal fire compartments, despite possible external vertical fire spread as highlighted in the case study below.

Consider the installation of automatic sprinkler systems within apartments of new buildings and retrofitting in existing buildings when the opportunity arises, such as when reviews and upgrading of fire protection systems are carried out and refurbishments undertaken. If automatic sprinklers are provided within apartments, then further consideration **and Aviva's recommendation is to extend this automatic** sprinkler protection to associated balconies and terraces, thereby helping to suppress/extinguish fire at its origin and prevent fire spread.

Loss Examples

- Fire
 - *07/2018 – Careless disposal of smoking material - West Hampstead Square, London.*
Cigarette butt placed into a plant pot on the 3rd floor external balcony, fire spreading vertically to balconies up to the top 6th floor apartment along with damage to apartment below from falling debris. The combustible balcony elements involved included composite decking and plastic soffits. Otherwise the building was steel framed with aluminium fascia and toughened balustrade glazing and brick walls. Sprinkler protection within apartments prevented fire spread into five separate fire compartments over five floors. Apartments internally suffered mainly smoke damage. See Case Study: [London Fire Brigade - Case Study - AFSS Activation - West Hampstead Square \(2018\)](#)
 - *06/2019 – Use of Barbeque - Samuel Garside House, Barking, London.*
Fire reported to have started from use of a barbecue on a 4th floor balcony of a modern purpose built six storey residential apartment block, resulting in 20 destroyed and 10 damaged apartments. Fire spread rapidly vertically and horizontally engulfing balcony decking, joists, soffits, slatted balustrades and vertical sections of the full building height, all constructed of timber.
- Collapse
 - *08/2019 – Rusted metal balcony floor - Brighton.* Women falls 10ft sustaining broken leg.
 - *11/2016 – Old Decorative 1st floor balcony gave way - Brighton.* 4 persons fell 2 storeys, sustaining injury.
 - *11/2014 – Iron Railings of 1st floor decorative balcony gives way - Knightsbridge, London.*
Two fatalities. Removal men carrying sofa into apartment.

Checklist

A generic Balcony and Terrace Safety: Residential Buildings Checklist is presented in Appendix 1 which can be tailored to your own organisation

Specialist Partner Solutions

Aviva Risk Management Solutions can offer access to a wide range of risk management products and services via our network of Specialist Partners who are reputable companies offering agreed discounted rates for Aviva customers.

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

Sources and Useful Links

- [London Fire Brigade - Home Fire Safety Guide for Purpose-Built Flats and Maisonettes \(2018\)](#)
- [London Fire Brigade - Barbeque Safety - Leaflet](#)
- [London Fire Brigade - Case Study - AFSS Activation - West Hampstead Square \(2018\)](#)
- [BRE Global \(Building Research Establishment\) - Fire Safety Issues with Balconies \(2016\)](#)
- [Local Government Association - Fire Safety in Purpose Built Blocks of Flats](#)
- [Ministry of Housing, Communities and Local Government - Advice for Building Owners of Multi-storey Multi Occupied Residential Buildings](#)

Additional Information

Relevant Loss Prevention Standards include:

- [Arson Prevention](#)
- [Smoking and the Workplace](#)
- [Hot Work Operations](#)
- [Managing Change - Property](#)
- [External Wall Insulation Systems](#)
- [Windstorm – Protection of Buildings](#)

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.*

*Calls may be recorded and/or monitored for our joint protection.

Appendix 1 – Balcony and Terrace Safety: Residential Buildings



Location	
Date	
Completed by (name and signature)	

	Construction/ Management of Hazards and Controls	Y/N	Comments
1.	<p>Are all materials of construction for the building known and documented? Are any materials of construction combustible? Is the location of any combustible materials of construction clearly identified on drawings and documentation?</p>		
2.	<p>Are the balconies and terraces located adjacent to, above or below combustible building construction features highlighted in question 1 above? Consider:</p> <ul style="list-style-type: none"> • Walls, external cladding and wall insulation • Wall coverings, such as living walls • Other building features, such as gutters, downpipes, fascia boards, soffits and roof overhangs • Combustible roofs and living roofs 		
3.	<p>Are the balconies/terraces themselves constructed containing combustible materials? Consider:</p> <ul style="list-style-type: none"> • Decking, frame, joists, cassettes, soffits, balustrades and handrails, etc. <p>If unknown, seek professional advice.</p>		
4.	<p>Has a fire risk assessment been undertaken which takes into account all construction materials and includes the construction materials of the balconies and terraces?</p>		

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5.	<p>Has the risk of external fire spread been assessed?</p> <p>Consider:</p> <ul style="list-style-type: none"> • Direct vertical fire spread from balcony to balcony • Vertical fire spread, aided by combustible wall elements, cladding or fascia's, etc. • Horizontal fire spread on balconies/terraces, walls and on roof top terraces 		
6.	<p>Do elements of balcony and terrace construction present an increased risk of property damage, and/or pose a risk to the health and safety of residents and other building users?</p>		
7.	<p>Have steps been taken to remove/replace any elements of construction considered to present an increased risk of property damage and/or to life safety?</p> <p>Has this work actually been undertaken?</p>		
8.	<p>Are there up to date:</p> <ul style="list-style-type: none"> • Fire risk assessment and • Health & safety risk assessment(s) <p>Both of which that take into account the presence, location, construction, condition and use of balconies and terraces?</p>		
9.	<p>Have any action points generated from all risk assessments completed been:</p> <ul style="list-style-type: none"> • Identified? • Prioritised? • Tracked? • Completed? 		
10.	<p>Do local rules and terms of leases exist that manage and present restrictions on the way residents can use balconies and terraces?</p>		

11.	<p>Do local rules/restrictions prohibit the following high fire risk activities on balconies and terraces:</p> <ul style="list-style-type: none"> • Barbeques? • All forms of cooking? • Heaters/chimineas? • Firepits? • Smoking? • Candles and related items, e.g. oil lamps? <p>Note: Aviva recommends all these activities should be prohibited.</p>		
12.	<p>Are local rules and restrictions in usage of balconies and terraces being observed by residents and strictly enforced? Is this via recorded inspections and patrols?</p>		
13.	<p>Are regular formal documented inspections under taken of balconies and terraces to check on the presence of: Barbeques, firepits, chimineas, heaters, candles, lanterns, excessive storage/combustible furniture, combustible privacy screens, highly flammable substances (fuel/firelighters), dry vegetation (plants) and presence of combustible matter collecting beneath decking, etc?</p>		
14.	<p>Are prohibited items and activities, e.g. barbeques, heaters, candles, fuel, etc. removed, and removal enforced/reinforced when identified?</p>		
15.	<p>Are all residents, including new residents, informed of balcony and terrace usage restrictions with regular reminders? Is clearly evident signage used and in place?</p>		
16.	<p>Are residents provided with the clear advice from the fire brigade to: “Never use a barbeque on a balcony”? Is clearly evident signage used and in place?</p>		
17.	<p>Are residents provided with clear advice on safe balcony and terrace usage, including the risks of smoking and careless disposal of smoking materials? Note: In most cases Aviva recommends smoking be prohibited on balconies.</p>		

18.	Is there a 'means of notification' reporting procedure for any balcony and terrace misuse, so that residents can alert property managers?		
19.	<p>Are regular formal documented inspections undertaken of balconies and terraces, to check on such things as:</p> <ul style="list-style-type: none"> • Condition of the base, frame, decking, soffits, balustrade & handrails, etc.? • Damage, cracks, corrosion, fatigue and wear and tear? • Suitability of construction materials for the environment? • Potential for decking slips/trips and falls from height? • Height and design of balustrades (1.10 metre minimum), with maximum spacing gap (100mm sphere)? • Ease of climbing balustrades, etc.? 		
20.	<p>Is the weight capacity of balconies known and recorded?</p> <ul style="list-style-type: none"> • Is this sufficient for the expected loading? • If required is this exposure managed with residents? 		
21.	<p>Are any decorative balconies present (such as those found on older properties with metal railings)?</p> <p>Where present are these considered suitable or unsuitable for use?</p> <p>If required, is access restricted, managed and arranged with clearly visible signage prohibiting use?</p>		
22.	<p>Are any items present that pose a risk of falling, such as plant pots, gym equipment, etc. that could cause injury and/or damage?</p> <p>Is there guidance for these exposures?</p> <p>Are these exposures managed?</p>		
23.	Additional comments:		

Please Note

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