

PART B

Weldale Street, Reading

Materials and Components for Terraces - Design Note

1 Introduction

1.1 General

PartB Group Ltd. has been appointed by BECT to advise on the fire safety aspects for the proposed development on Weldale Street in Reading. This is the second phase of the project comprising a car park, Lower Ground Floor, Ground Floor and above Ground Floor levels from 1st to 9th Floor.

This design note has been prepared to specifically address the external areas located at Upper Ground Floor level, as indicated below in Figure 1, in terms of requirements for materials and components.



Figure 1: Weldale Street Development / external areas indication (Source: AWW)

2 Recommendations

2.1 Terminology

BS 8579 – Guide to the design of balconies and terraces provides the following relevant definitions:

- Access Deck – Exterior passage affording access and escape to unit(s) of accommodation above ground level.
- Balcony – Accessible external amenity platform above ground level exterior to and with direct access from a building.
 - *Note: A balcony is formed above an external space that is not a habitable room.*
- Terrace – External accessible surface above an internal space above ground level exterior to and with direct access from a building to occupants for purposes other than exclusively maintenance.

Based on the above, the most appropriate classification for the external areas indicated in Figure 1 would be 'terrace', based on them being located above the car park and also being raised above ground level.

2.2 Guidance from design codes

2.2.1 BS 9991:2024

BS 9991 recommends that all balconies, terraces and roof gardens (whether private or communal) should be designed in accordance with the recommendations provided within its Annex E. BS 9991 also makes reference to BS 8579 for general guidance on balconies and terraces.

In terms of external fire spread, BS 9991 Section 24.6.3 recommends that all terraces, including decking, should have a B_{ROOF}(t4) classification.

However, Section E.4 provides the following further guidance:

'For communal terraces and roof gardens, the roof should be constructed as a compartment floor.

Either:

- a) The upper surface should have a B_{ROOF}(t4) classification; or
- b) Areas such as green roofs, planters, and soft surfaces to playgrounds that do not achieve B_{ROOF}(t4) should be isolated:
 - 1) 3 m away from any vertical building façade above the terrace surface; and
 - 2) 0.5 m from other perimeters of the terrace (e.g. lift overruns) and from roof lights, ventilation openings or other penetrations of the roof.

Any fire risk or roofed structure on a terrace, such as barbecue stations and enclosed buildings, should be erected on a slab of class A1 material that also extends at least 1.2 m from the edges of such feature.

Planting structures should be constructed of class A1 materials.

For buildings with a storey 11 m or more above ground level, any perimeter construction that forms part of an external wall, such as parapets or balustrading, should be constructed of class 'A2-s1, d0' or better materials.'

2.2.2 BS 8579:2020

BS 8579 recommends that a balcony or terrace should not give rise to additional fire risk to a building or adjacent building by virtue of its existence. It is therefore vital to consider balcony arrangement, details and materials to reduce fire risk to a minimum.

The components of balconies, terraces and walkways, when exposed to fire, including from below, e.g. from a window or other openings, should:

- Not be composed of materials or designed such that they provide a medium for undue fire spread over the external envelope of the building;
- Not propagate fire downwards, e.g. not produce falling brands or flaming/molten droplets or debris capable of initiating fire below;
- Be designed to minimize the risk of becoming detached from the face of the building and present a hazard to persons below, e.g. firefighters or the public; and
- Be designed to minimize the risk of prejudicing the stability of the building when undergoing large deformations resulting from fire exposure.

The design code continues to provide the following guidance on materials and components for terraces in respect to fire:

A roof terrace should be designed so as not to support the spread of fire:

- a) Onto the terrace;
- b) Across the terrace to an adjacent structure or building; and
- c) Across the terrace to an adjacent compartment in the same building.

This may be achieved by one of the following:

1) A terrace (being an occupied roof) performs the function of a floor, therefore a terrace or access terrace as part of a building with an occupied floor over 11 m above the lowest ground level build-up within 3 m of an extensive vertical facade above may be limited to classification B_{ROOF}(t4) in accordance with BS EN 13501-5:2016;

2) A terrace containing planting may be divided by narrower strips of material achieving minimum classification B_{ROOF}(t4) in accordance with BS EN 13501-5:2016 in different orientations; or

3) A terrace containing planting may be divided by walls of fire-resisting construction in different orientations.

BS 8579 also provides the following diagram to support the above recommendations:

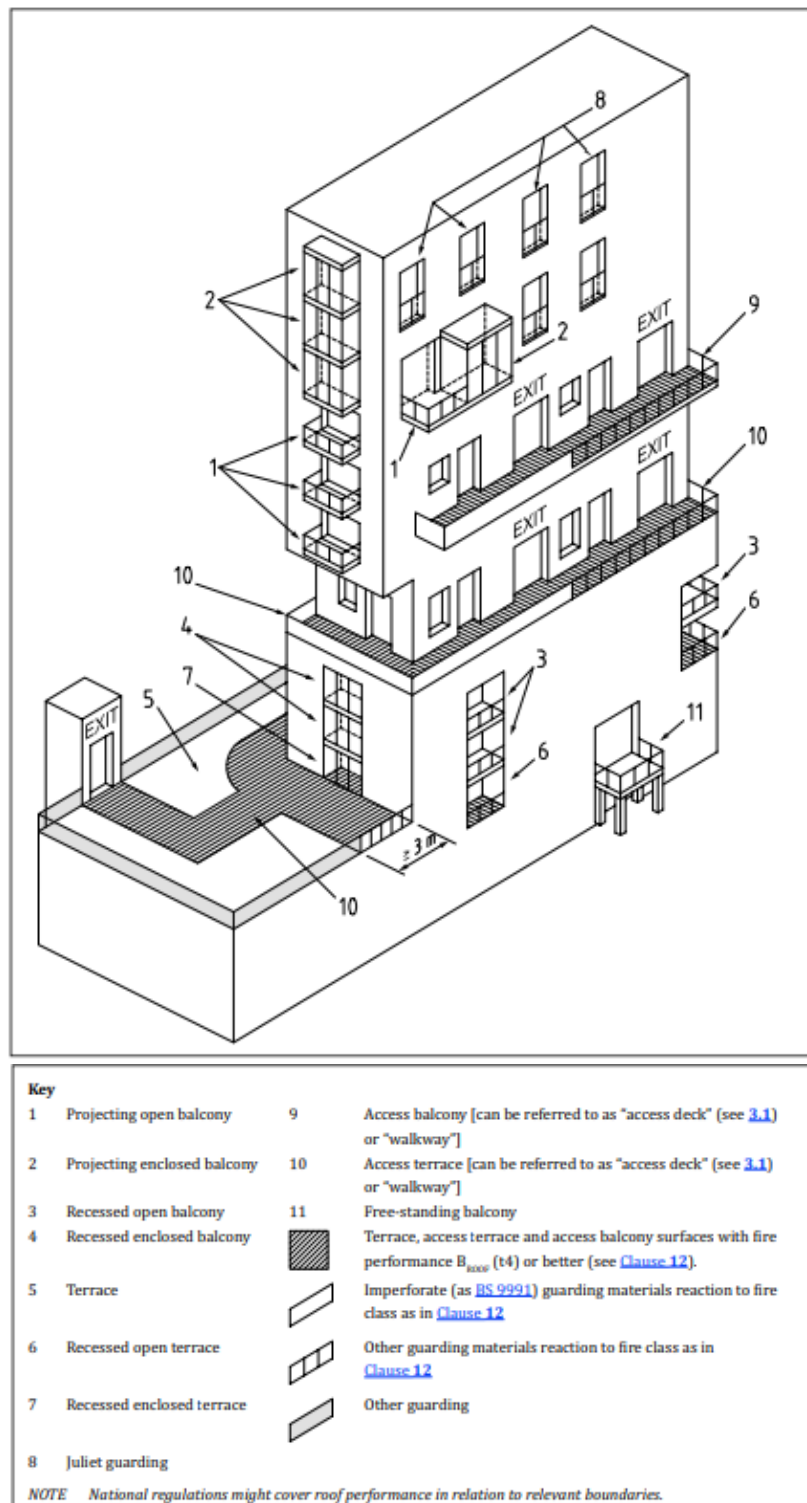


Figure 2: Balconies and terraces (Source: BS 8579)

2.3 Summary

Based on the previous Sections of this report, PartB would summarise / recommend the following:

- The external areas are best classified as a communal terraces;
- Recommendations from BS 9991 and BS 8579, by way of reference within BS 9991, would apply;
- Any combustible furnishings should be located at least 3m from any vertical façade above the terrace and 0.5m from other perimeters of the terrace;
- Any fire risk or roofed structure on a terrace should be erected on a slab of class A1 material that also extends at least 1.2m from the edges of such feature;
- Planting structures should be constructed of class A1 materials;
- Any perimeter construction that forms part of an external wall should be constructed of class 'A2-s1, d0' or better materials; and
- Any part of the terrace within 3m of an extensive vertical facade above should be limited to classification B_{ROOF}(t4).