

Timber Decking

Building Regulations and British Standards.

Timber decks for residential installation are not as such referenced in current UK Building Regulations. However as the regulations state that stairs and balustrades should be designed and installed for the safe movement in or about buildings it can be assumed that they do apply especially with regards to balustrades.

The TDA (Timber Decking Association) technical bulletin on the design and construction of deck parapets details two types of deck, low level and high level. A low level deck is any deck up to 300mm above ground level with high level referring to all other decks higher than 300mm.

For low level residential decks the balustrade should be set at a minimum height of 900mm on both stairs and landings and resist a minimum horizontal uniformly distributed line load of 0.36kN/m, a uniformly distributed load applied to the infill of 0.5kN/m² and a point load applied to part of the infill of 0.25kN.

High level residential and commercial decks in public areas used to move people through and not susceptible to overcrowding including stairs, landings, corridors, external balconies and ramps should have the balustrade set at a minimum height of 900mm on stairs and 1100mm on landings and resist a minimum horizontal uniformly distributed line load of 0.74kN/m, a uniformly distributed load applied to the infill of 1.0kN/m² and a point load applied to part of the infill of 0.5kN.

Additionally balustrades in commercial areas with tables or fixed seating where people may congregate and are susceptible to overcrowding should have the balustrade set at 900mm on stairs and 1100mm for landings and horizontal guarding. Balustrades for these environments should resist a minimum horizontal uniformly distributed line load of 1.5kN/m, a uniformly distributed load applied to the infill of 1.5kN/m² and a point load applied to part of the infill of 1.5kN.

The balustrade should be designed so that it is not easily climbable and not allow the passage of a 100mm sphere.

Document K: Building Regulations 1992

This regulation details that stairs should be designed, constructed and installed so that they are safe for people to use when moving between different levels in buildings. Key points include;

Twice the rise plus the going (2R+G) should be between 550 and 700mm. Handrails should be provided to at least one side if the stairs is less than 1 metre wide.

For stairs wider than 1 metre handrails should be provided to both sides.

There is no need for handrail beside the bottom 2 steps of a stairs.

For domestic situations the handrail should be set at a minimum height of 900mm on both stairs and landings.

For public situations the handrail should be set at a minimum height of 900mm on stairs and 1100mm on landings

There should be no opening in the balustrade that would allow the passage of a 100mm sphere.

The "guarding" should be able to resist a horizontal loading of 0.36kN per metre run for domestic stairs, 0.74kN per metre for public stairs not susceptible to overcrowding and 1.5kN for all other public stairs.

The maximum pitch for a domestic stairs is 42° and between 33° and 38° for a public stairs depending on its use.

Private stairs are defined as those used for only one dwelling using any rise between 155mm and 220mm with any going between 245mm and 260mm or alternatively any rise between 165mm and 200mm used with any going between 223mm and 300mm. A stairs that serves a building where a substantial group of people gather is defined as 'Institutional & Assembly' using any rise between 135mm and 180mm with any going between 280mm and 340mm.

Stairs for all other buildings are defined as 'Other' with the rise described as 150mm and 190mm used with any going between 250mm and 320mm.

When calculating the relationship between the rise and going the dimensions should be 'Twice the rise plus the going (2R+G) must be between 550mm and 700mm'.

British Standards

British Standards relevant to using wood externally that have relevance to designing and constructing decks and external balustrades include;

BS 585 Part 1 1989: Wood stairs. Specification for stairs with closed risers for domestic use, including straight and winder flights and quarter or half landings.

This document covers the specifications for stairs with closed risers for domestic use, including straight and winder flights and quarter or half landings.

Appendix A of this standard gives details for the site fixing of stairs and Appendix B guidance for the design of stairs with winders. Other sections of this standard cover the recommendations for treads and risers, strings, newels, construction, handrails and balustrades.

BS 585 Part 2 1985: Wood stairs. Specification for performance requirements for domestic stairs constructed of wood-based materials.

Specifies the performance requirements for domestic straight flight stairs including those with quarter and half landings constructed from wood based materials.

Appendix B of this standard includes details for test methods used to establish stair and tread deflection and balustrade static load and impact tests.

BS 5395-1:2000: Stairs, Ladders and Walkways. Code of practice for the design, construction and maintenance of straight stairs and winders.

Gives recommendations for the design, construction and maintenance of straight flight stairs including landings and winders in a number of materials and for all types of buildings. Table 1 of this document gives recommended sizes for private, public and assembly stairs and Figure 4 the relationship between the rise, going and pitch. This document also covers recommendations and guidance on safety including accidents on stairs, handrails, steps, rise, going, treads, pitch headroom and stair width. Section 10 gives details on the materials used to construct stairs including, timber, concrete, steel and aluminium.

BS 5395 Part 2 1984: Stairs, ladders and walkways. Code of practice for the design of helical and spiral stairs.

Scope covers recommendations for the design of both helical and spiral stairs used internally and externally in all types of buildings. This standard covers all stairs, which are circular on plan. Table 2 details the sizes of stairs for small private, private, small-semi public, semi-public and public use.

BS 6399 Part 1 1996: Loadings for buildings. Code of practice for dead and imposed loads.

Gives recommended dead and imposed loads for use in designing new buildings and structures, alterations to existing buildings and the change of use to an existing construction. Section 10 and Table 4 covers parapets, barriers and balustrades and the minimum horizontal imposed loads.