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What Are the Structural Load Implications of Introducing Luxura in Balcony Remediation Projects?



Executive Summary

Replacing 25mm softwood with Luxura on a 6m² balcony adds circa 65kg, equivalent to 1 person standing on the balcony. This increases design loads on balcony anchors by 2-4%.

If replacing wood plastic composite or hardwood, the impact is much smaller.

Balcony Design Loads

The following are two different types of loads in balcony design:

1. **Dead load:** the weight of the materials themselves including the decking.
2. **Live load:** the weight of people or furniture.

According to BS EN 1991-1-1 (Eurocode) and BS 6180:2011, all balconies must be designed to take a 2.5 kN/m² live load for residential balconies (Category A). Factors of safety then add circa. 40% so the design load requirement is circa. 3.5 kN/m².

Historically, the live load requirements were 1.5 kN/m² for residential balconies so if the information is not available for an existing building when undertaking remediation, it is sometimes not clear what loads the balconies are designed for.

The overall weight of a steel frame balcony is, on average, 100-200 kg/m². A 6m² steel frame balcony is therefore, on average, 600kg or circa. 6 kN.

Decking Weights

The combustible decking on existing balconies is typically either hardwood or wood plastic composite, sometimes with timber joists substructure. The following table shows the typical weights of these boards alongside the non-combustible alternatives:

Decking Type	Typical Weight
Softwood 25mm (wet)	13 - 18 kg/m ²
Hardwood 25mm (wet)	25 - 30 kg/m ²
Typical solid wood plastic composite (WPC)	20 - 25 kg/m ²
Typical hollow wood plastic composite (WPC)	15-20 kg/m ²
Aluminium decking	9 - 14 kg/m ²
MyDek Luxura decking (mineral composite)	29 kg/m ²

Substructure Weights

Timber joists would typically be at 250 mm – 350 mm centers. The size of these joists would likely be 145 mm x 45 mm x 3.6 m, weighing on average 12 - 20 kg per joist, allowing for moisture absorption.

MyDek's average aluminium box rail (joist) is 60 mm x 40 mm x 3600 mm and weighs circa. 6 kg. These would be installed at 450 mm centers for Luxura or 600 – 900 mm centers for aluminium.



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Worked Examples


Scenario 1 – Light	Scenario 2 – Heavy	
600 kg	1000 kg	6m ² balcony weight (dead load)
900 kg	1500 kg	Floor load (live load)
360 kg	600 kg	40% safety factor
1860 kg	3100 kg	Total load
65 kg	65 kg	Extra weight (Luxura vs softwood)
3.5%	2%	% change compared to total load

In addition to the workings above, if the existing balcony has timber substructure elements like in the photos below, the weight of these will be offset with the replacement of lighter weight aluminium joists.


Timber:



Luxura:



Another example with timber substructure that MyDek replaced with aluminium joists:

For more information, book a consultation by calling **03300 94 94 11**, emailing sales@mydek.com or by visiting our website at www.mydek.com.

Please note: The opinions incorporated herein are given in good faith, but readers should make their own investigations and should not rely solely on the document in any decisions they may make.



About MyDek®

The MyDek team harnesses a huge range of experience, creativity, passion and drive to make balconies and terraces safe places to be. Drawn from different areas of the construction industry our team brings together extensive knowledge of specification, technical compliance and outstanding innovation to create a non-combustible decking system that delivers on our mantra of Safe. Smart. Sustainable. **So relax, you're in safe hands.**

Safe. Smart. Sustainable.

Our ethos runs through everything we do. We're passionate to ensure that our products reflect these values and make a significant contribution to residential balconies and terraces as safe and enjoyable places.

Our core principals



Safe.

- To deliver fully compliant, high performance products with no compromise of safety and quality standards.
- To keep our promises and operate with honesty and integrity.



Smart.

- To deliver well designed products which facilitate the designer and installer in their respective tasks.
- To operate efficiently and effectively with minimum waste.



Sustainable.

- To focus on long term successful relationships and responsible business growth.
- To create an ethical and scalable supply chain that facilitates growth and respects the environment.

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Non-combustible decking systems

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