



20mm Luxura Test Report

Date:

21-26/04/23

Test Description:

Number of tests to ensure the 20x200mm Luxura meets expectations and requirements for sale.

Testing Personnel:

Bryn Norman

Testing Location:

Reading

Summary of Test

This report covers 3 span break tests and 2 cantilever break tests. More testing was planned, but current stocks of 20x200mm Luxura didn't allow.

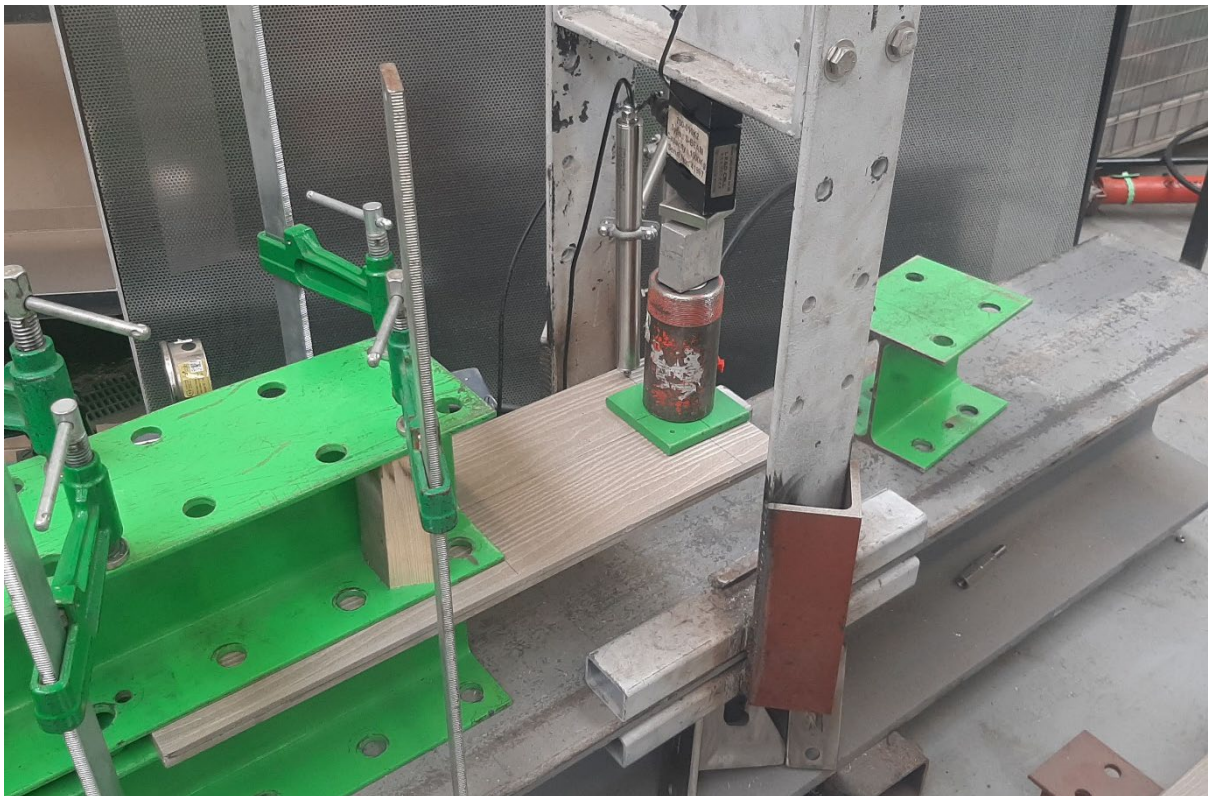
The first span tests were a 400mm span break test applied as a point load through a 100x100mm plate. The load is applied in the middle of the span with a hydraulic ram, a load cell was used to measure applied load while a probe measured deflection also in the middle of the span (See test setup below). The second span test is identical to the first but with a 550mm span. A 460mm test was also carried out later.



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The Cantilever break tests are with both 250mm and 300mm overhangs applied as point loads. Load is applied to the end of the overhang with the full 100x100mm plate on the board, load is again measured with a load cell and deflection is taken with a probe on the edge of the board level with the middle of the plate (50mm from the end). The remainder of the 600mm (350mm and 300mm respectively) board is held between 2 steel beams, clamped down to the arm tester (test setup below).

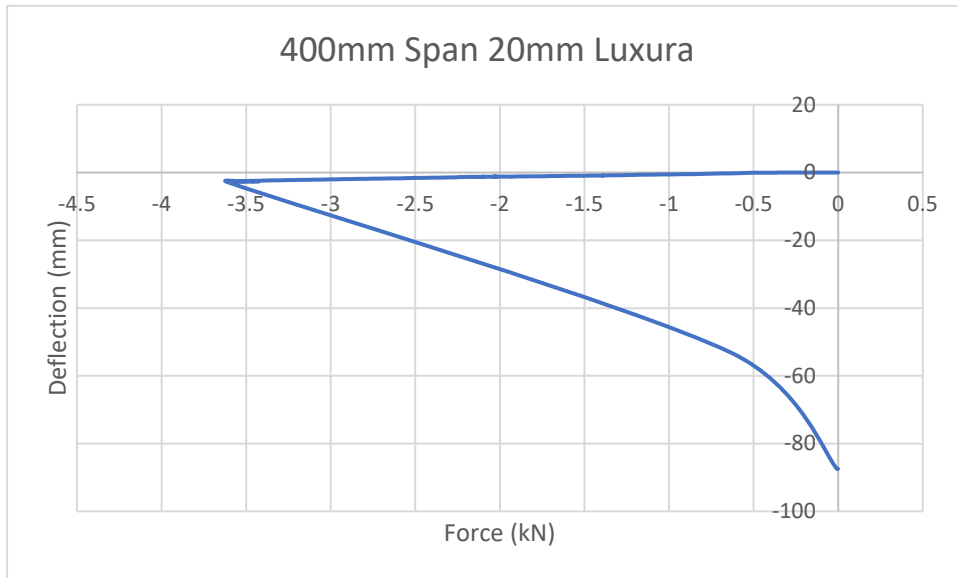




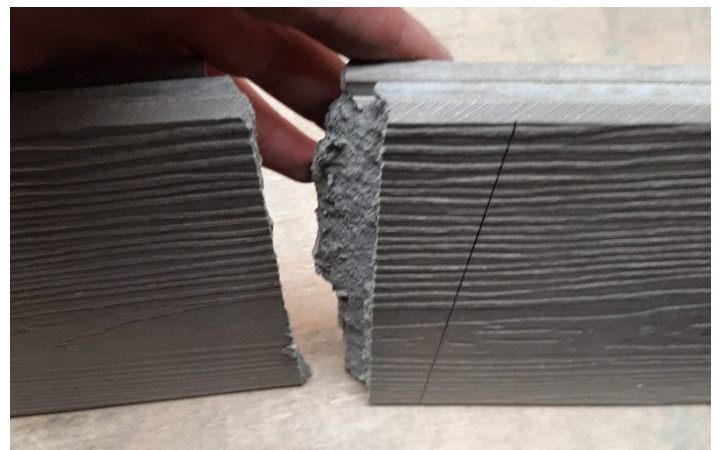
400mm Span Break test

[400mm Span Test Video](#)

Deflection at 2kN = 1.2mm



Failure Load (kN)	Deflection at Failure (mm)
-3.616	-2.71

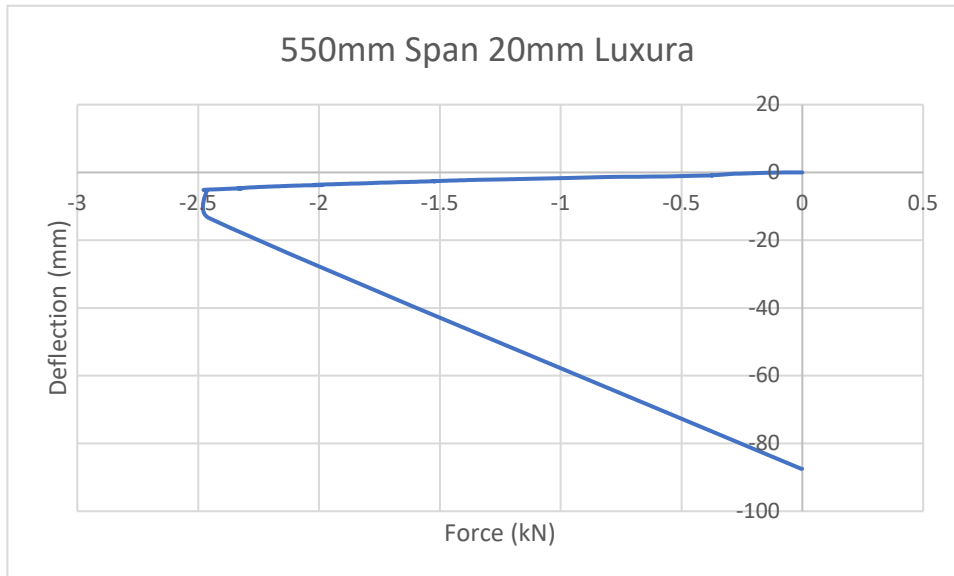




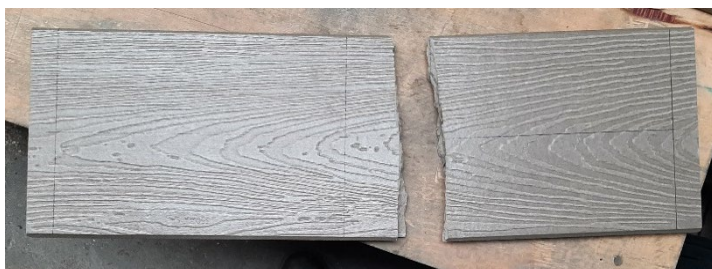
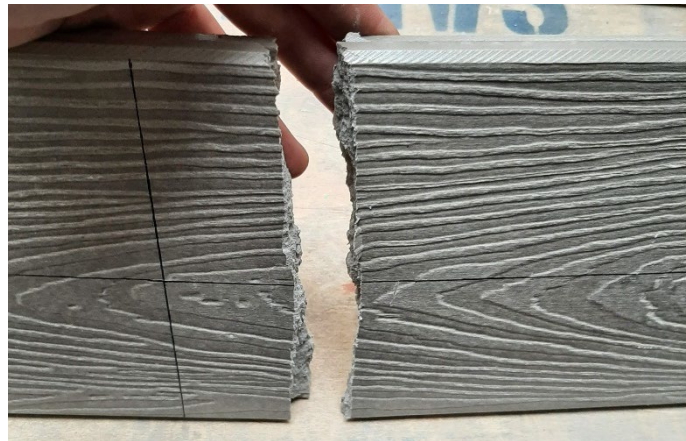
550mm Span Break Test

[550mm Span Test Video](#)

Deflection at 2kN = 3.73mm



Failure Load (kN)	Deflection at Failure (mm)
-2.463	-5.25

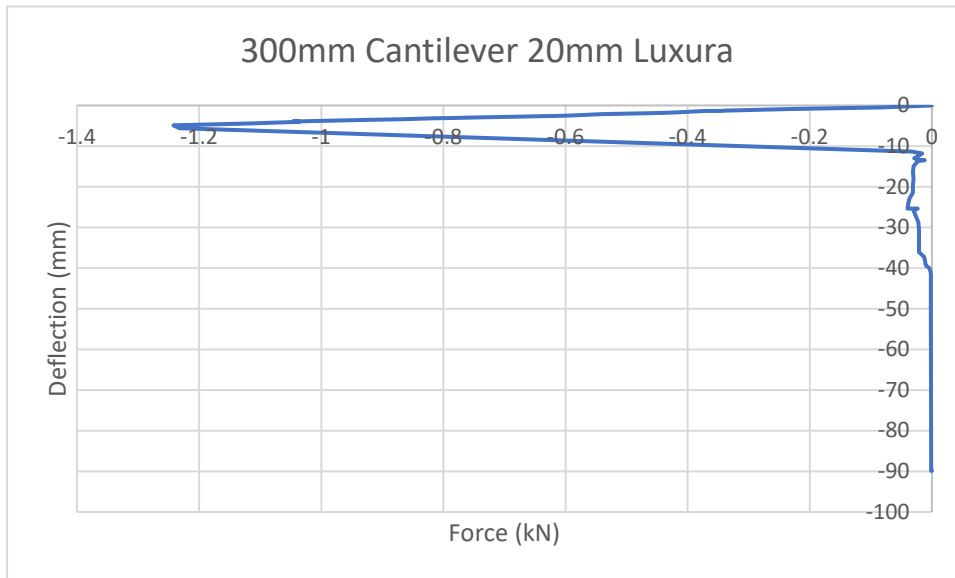




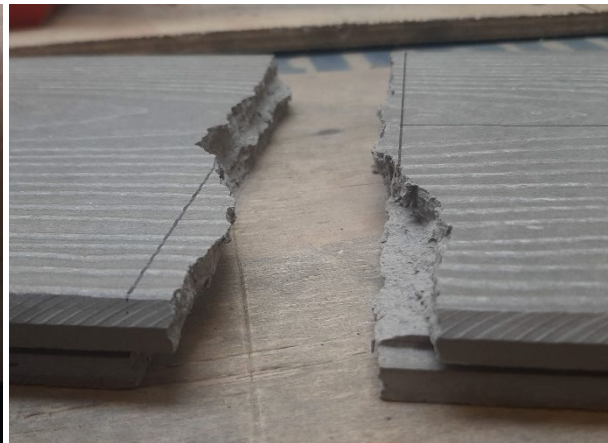
300mm Cantilever Test

[300mm Cantilever Test Video](#)

Deflection at 2kN = N/A didn't reach 2kN



Failure Load (kN)	Deflection at Failure (mm)
-1.046	-3.96



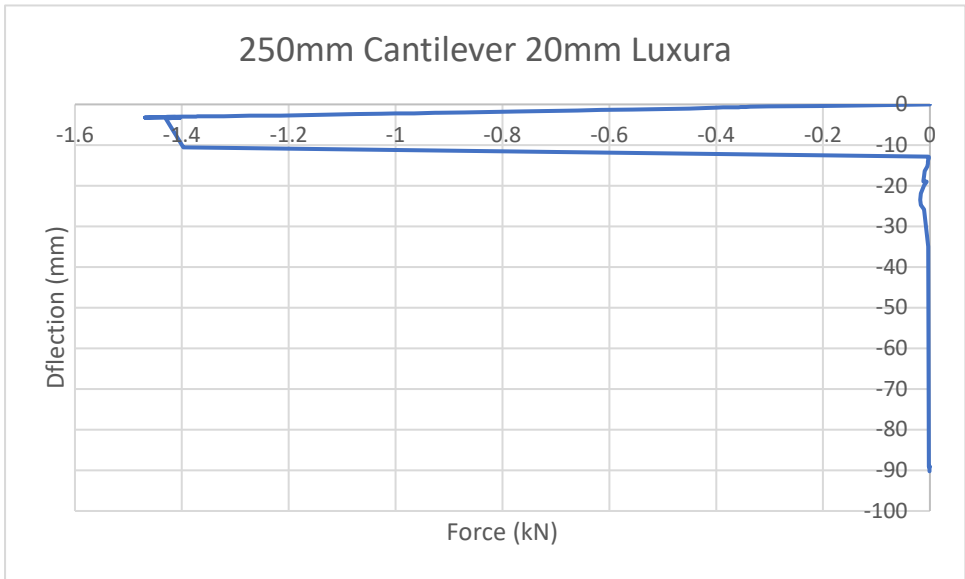


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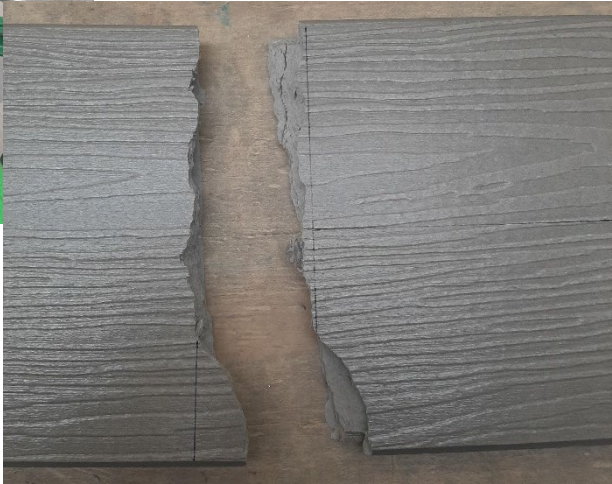
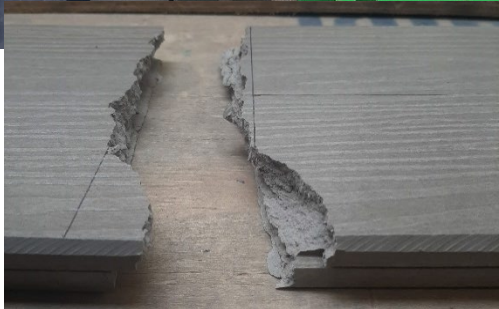
250mm Cantilever Test

[250mm Cantilever Test Video](#)

Deflection at 2kN = N/A didn't reach 2kN



Failure Load (kN)	Deflection at Failure (mm)
-1.469	-3.26



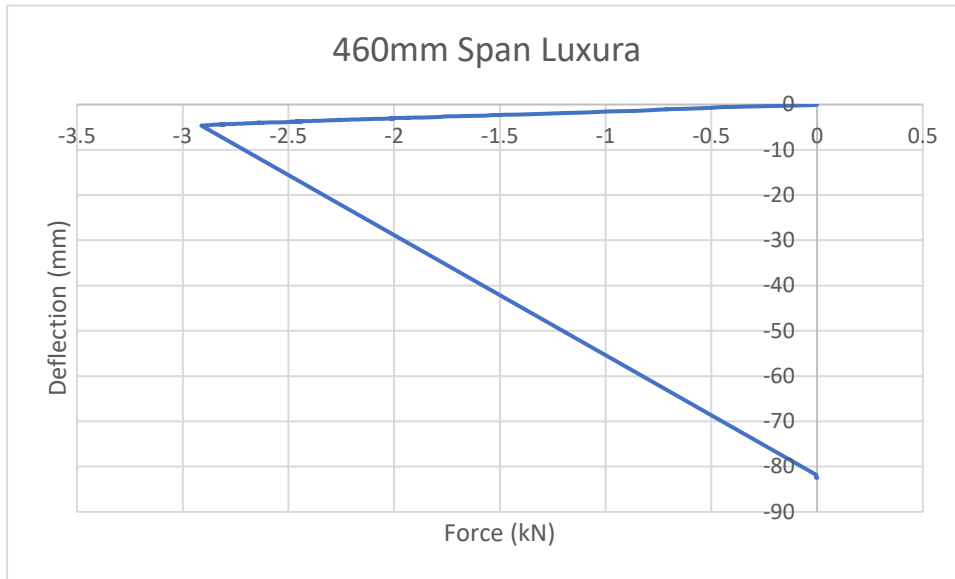


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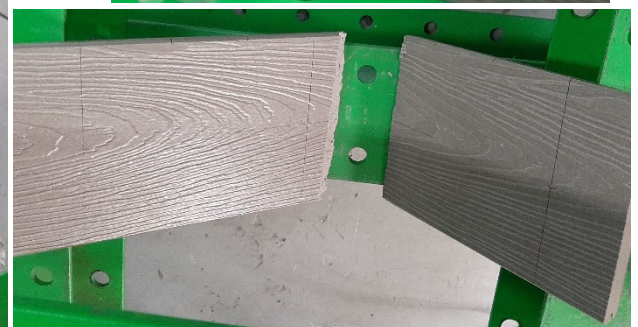
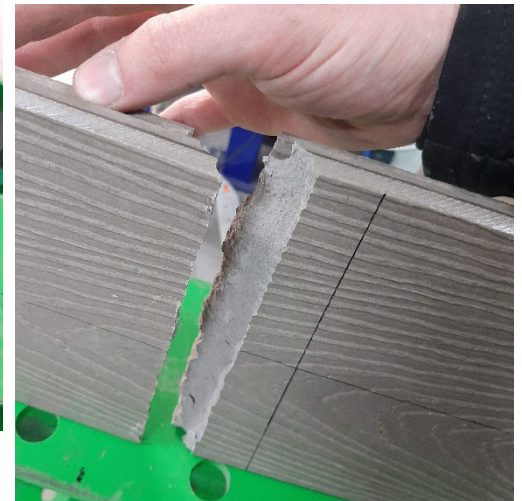
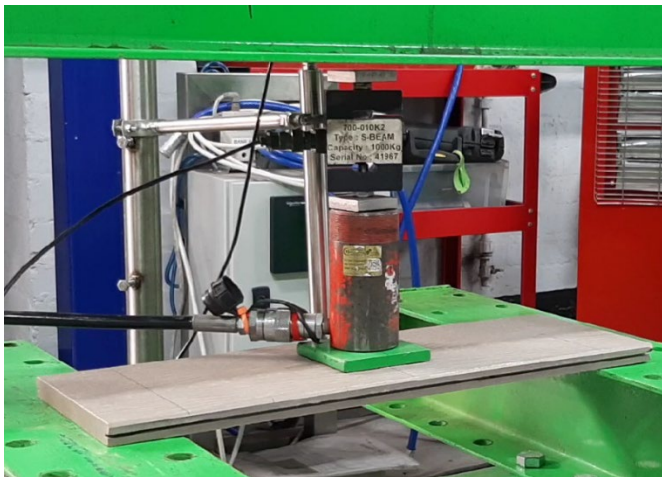
460mm Span Test

[460mm Span Test Video](#)

Deflection at 2kN = 2.98mm



Failure Load (kN)	Deflection at Failure (mm)
-2.912	-4.67

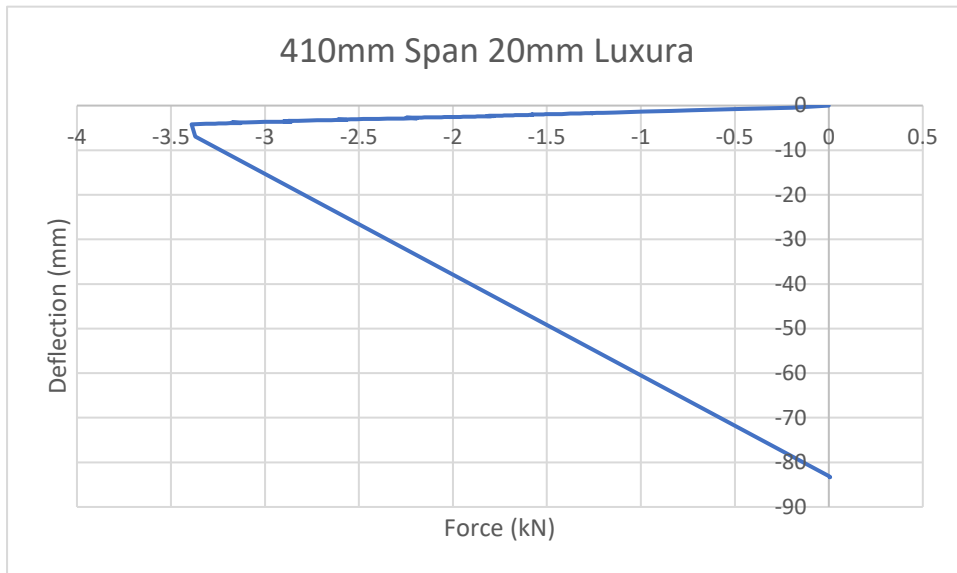




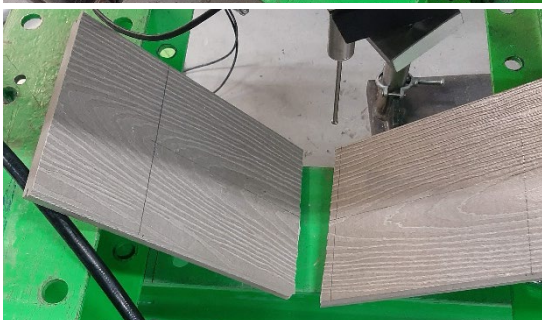
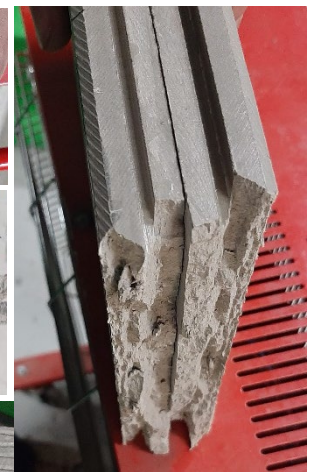
410mm Span Test

[410mm Span Test Video](#)

Deflection at 2kN = 2.55mm



Failure Load (kN)	Deflection at failure (mm)
-3.390	-4.22





Conclusion

In conclusion, as expected 20mm Luxura with a width of 200mm performs much better than 20mm boards with a width of 144mm, although generally worse than 25mm thick boards at a width of 144mm. The 20x200mm wide board passes the 410mm span test easily, breaking at 3.37kN- these results are seen in bold. The 20x200mm wide board also passes the 550mm span deflection test whilst the 20x144mm fails.

Below is an extract from the overall comparison table showing the differences in performance (Rounded to two decimal places) and the board that performed the best in **green**.

Please note that 460mm span testing is not included on this table as previously it was carried out to boards ripped down to 120mm wide.

For full details on the previous testing done in 2021-2023, please go to:

https://sapphirebalustrades.sharepoint.com/:b:/s/ATWInnovationsLtd/EWfi_36w2IVes_uhbmJpjcB-8sO9bZDgxxAQJoWH7n7Zg?e=QXrrOw for the test report.

	Luxura (2021)	Luxura 144x20mm	Luxura 200x20mm
Span Break Test			
Deflection at 2kN (400mm)	1.26mm	1.48mm	1.20mm
Failure Point (400mm)	3.80kN, 2.48mm Deflection	2.59kN, 2.05mm Deflection	3.62kN, 2.71mm Deflection
NEW: Deflection at 2kN (410mm)	N/A	N/A	2.55mm
NEW: Failure Point (410mm)	N/A	N/A	3.39kN, 4.22mm Deflection
Deflection at 2kN (550mm)	3.24mm	Fail	3.73mm
Failure Point (500mm)	2.74kN, 4.38mm Deflection	1.60kN, 3.45mm Deflection	2.46kN, 5.25mm Deflection
Cantilever Break Test (300mm)	1.74kN	0.76kN	1.05kN
Cantilever Break Test (250mm)	N/A	N/A	1.47kN