

Aluminium Balustrade System

Compliance & Load Data Sheet — DIY self-install guarding for domestic use

This aluminium balustrade system is designed in line with BS 6180:2011, the British Standard for barriers in and around buildings. Manufacturer load testing shows it resists a horizontal line load of 0.36 kN/m, the figure BS EN 1991-1-1 sets for single-family dwellings. Installed to the conditions in Section 4, it gives a finished guarding height of 1100 mm with an infill that prevents a 100 mm sphere passing through.

Suitable for drops over 600 mm. This is a full guarding system. UK building regulations require guarding wherever there is a drop of more than 600 mm, and this system is built for that job — unlike our wire balustrade range, which is supplied for drops below 600 mm only.

01 PRODUCT & MATERIAL SPECIFICATION

System type	Modular guarding — posts with horizontal rail kits and vertical pickets
Material / grade	Aluminium alloy 6005
Finish	Powder-coated matt black, RAL 9017 (durability tested — see Section 7)
Post	75 × 75 mm square · 1140 mm to cap · base plate 120 mm square
Finished guarding height	1100 mm
Rail kit length	1829 mm (the only length supplied)
Maximum post span	1829 mm centre to centre
Infill / picket spacing	Vertical pickets at 96.5 mm — a 100 mm sphere cannot pass
Gate	1168 mm overall (approximately 1190 mm opening)
Fixings	Fixing bolts not supplied — substrate-appropriate fixings by installer

02 APPLICABLE STANDARD & SCOPE

BS 6180:2011 — Barriers in and about buildings, Code of practice. Governs the design geometry and the horizontal imposed loads a barrier must resist. Horizontal design loads are those given in BS EN 1991-1-1 and its UK National Annex, applied by use class.

Tested use: domestic and single-family dwellings — private houses, private balconies and domestic decking. Higher use classes (communal, commercial, crowd areas) are not covered by the current test.

Not covered by this sheet: the adequacy of the supporting structure (deck, wall, slab) or the substrate fixings, which are the responsibility of the installer or building designer.

03 LOAD PERFORMANCE

BS 6180 and BS EN 1991-1-1 set a required horizontal line load applied at the top of the guarding, by use class. The class covered by test report AR210 is marked below.

USE CLASS (BS EN 1991-1-1)	REQUIRED LINE LOAD	STATUS
Single-family dwellings — private houses, balconies, domestic decking and stairs	0.36 kN/m	Tested — pass
Other residential, office or communal, not prone to overcrowding	0.74 kN/m	Not tested
Areas prone to overcrowding (assembly, retail)	1.5 kN/m	Not tested
Areas susceptible to large crowds	3.0 kN/m	Not tested

Infill was tested separately: a 0.25 kN point load and a 0.5 kN/m² area load applied to the pickets, both passed. The tested performance is valid for the tested configuration and for the sold configuration within the limits in Section 4.

04 CONDITIONS OF COMPLIANCE — INSTALLATION

- **Maximum post span 1829 mm centre to centre — do not exceed.** The system was tested at a wider 2438 mm span, so the 1829 mm sold span is the more conservative figure.
- Posts fixed to a sound, load-capable substrate using fixings rated for the applied load and base material — timber, concrete or steel. Fixing bolts are not supplied.
- Finished guarding height maintained at 1100 mm above the finished floor or nosing line.
- Infill and picket spacing left unmodified so a 100 mm sphere cannot pass.
- Installed in accordance with the supplied installation instructions.
- **Domestic use only.** For communal, commercial or crowd areas, refer to a building designer — the current testing does not extend to those classes.

05 TEST & ENGINEERING EVIDENCE

Structural test report	AR21020190724 — "The Outdoor Look Aluminium Railing AR210" · Order 190613
Test date / report date	22 July 2019 / 24 July 2019
Reported / reviewed by	Hou Yongjian / Joanna Ren — manufacturer test report
Tested configuration	Level railing 1067 mm high × 2438 mm span · pickets 98 mm · post HPD1082 · bracket and screw 8-3/4
Horizontal line load 0.36 kN/m	0.87 kN applied over 2.438 m, held over 1 minute, no obvious deformation — PASS
Infill point load 0.25 kN	Held over 1 minute, no obvious deformation — PASS
Infill area load 0.5 kN/m ²	Held over 1 minute, no obvious deformation — PASS
Overall conclusion	PASS
Current-product cross-check	Sold configuration (1829 mm span · 1100 mm height · 96.5 mm pickets) confirmed as covered — the sold span is shorter, and therefore more conservative, than the 2438 mm tested span

This is a manufacturer test report. It demonstrates performance against the load figures BS 6180:2011 and BS EN 1991-1-1 require for domestic use; it is not third-party certification to the standard, and this sheet does not claim to be.

06 FINISH DURABILITY, WARRANTY & SUITABILITY

- Powder-coat finish independently batch-tested — coating report by Delta Aluminum (Thailand), 22 June 2023: film thickness 60–120 µm, with cross-hatch adhesion, impact resistance, hardness, hydrochloric-acid resistance and boiling-water resistance all passing.
- **10-year warranty** against material and finish defects — see full warranty terms.
- Suitable for domestic single-family use per the test evidence in Section 3, when installed to Section 4.
- Where a project's loading, structure or use falls outside the tested domestic configuration, the building designer should confirm suitability.

This data sheet describes the aluminium guarding system only. Responsibility for the supporting structure, substrate fixings, and confirming the correct use class for a given project rests with the installer or building designer. Required loads are the values set by BS 6180:2011 and BS EN 1991-1-1; the system's tested performance (0.36 kN/m, domestic) is on the basis of manufacturer test report AR210 (2019) referenced in Section 6. Finish-durability results are from the Delta Aluminum coating test (2023).