



ENGINEERING

Architectural, Glazing & Structural
Metalwork Specialists

ALUMINIUM DECKING SYSTEMS

STEADEK range

Precision-engineered aluminium decking for balconies & terraces

ENGINEERED TO BS EN 1990–1999
50-YEAR DESIGN LIFE
DESIGNED AND MANUFACTURED IN UK

Calculation Report Ref. 25100-SLL-00-XX-CR-S-0001 · Product Brochure

STEADEK ALUMINIUM DECKING – D&A Engineering



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Why STEADEK

STEADEK is D&A Engineering's own aluminium decking system — designed, extruded and structurally calculated in-house for balconies and terraces on residential and commercial developments. Every span in this brochure is backed by an independent structural calculation report, checked against the Eurocodes.



Engineered & Verified

Every board, rail and cleat is sized and checked against BS EN 1990–1999 by qualified structural engineers, with a full calculation report available for every project.



Built to Last

A 50-year design life to BS EN 1990 Table NA.2.1, with a corrosion protection system providing a minimum of 25 years to first major maintenance.



Light, Yet Strong

Grade 6082-T6 aluminium keeps board weight to 9.15–13.4 kg/m², reducing load on the substructure without giving up strength or stiffness.



Low-Maintenance & Recyclable

Won't rot, warp or splinter like timber, and needs none of the sealing or staining composite decking demands. Aluminium is also fully recyclable.

50

YEARS DESIGN LIFE

250

MPa PROOF STRESS

100%

RECYCLABLE ALUMINIUM



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The STEADEK Range

Two board profiles, one shared rail and cleat support system — specify the combination that fits the application.

STEADEK 150



Board size: 144mm wide · 20mm deep ·
150mm module

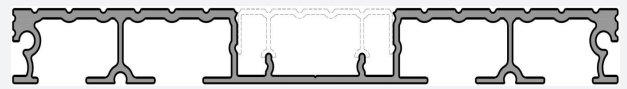
Weight: 9.15 kg/m²

BEST SUITED TO

Residential balconies (Cat. A5) and hotel balconies (Cat. A7).

Aluminium 6082-T6

STEADEK 200



Board size: 194mm wide · 20mm deep ·
200mm module

Weight: 13.4 kg/m² (incl. top cover)

BEST SUITED TO

All load categories — including institutional areas with crowds or wheeled loads (Cat. C31/C34).

Aluminium 6082-T6

Both boards are extruded from Aluminium 6082-T6 and fix to a common box-rail and adjustable cleat substructure — detailed on the following pages.



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STEADEK 150 — Technical Datasheet

BOARD PROFILE



SPECIFICATION

Board width × depth	144 × 20 mm (150mm module)
Cross-section area	508.17 mm ²
Weight	9.15 kg/m ²
Material	Aluminium 6082 T6

SPAN TABLE (rails on rigid substrate)

Load Category	UDL	Point	Max span A	Cleat sp. C
A5 — single-family balconies	2.5 kN/m ²	2 kN	500 mm	1200 mm
A7 — hotel balconies	4 kN/m ²	2 kN	500 mm	1200 mm



STEADEK 150 is not recommended for institutional categories C31/C34 at standard flange thickness. Specify STEADEK 200 for these applications, or ask us about the reinforced-flange option.

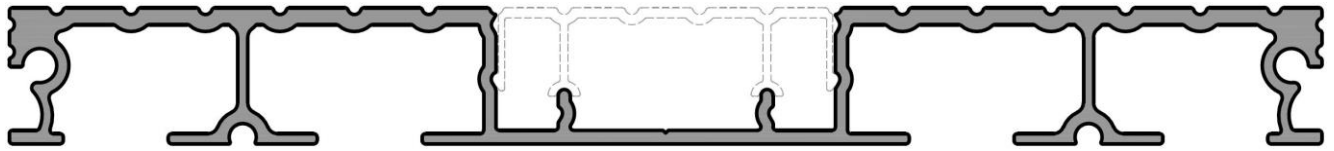


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STEADEK 200 — Technical Datasheet

BOARD PROFILE



SPECIFICATION

Board width × depth	194 × 20 mm (200mm module)
Cross-section area (incl. top cover)	992.67 mm ²
Weight	13.4 kg/m ²
Material	Aluminium 6082 T6

SPAN TABLE (rails on rigid substrate)

Load Category	UDL	Point	Max span A	Cleat sp. C
A5 — single-family balconies	2.5 kN/m ²	2 kN	600 mm	1200 mm
A7 — hotel balconies	4 kN/m ²	2 kN	600 mm	1200 mm
C31 — institutional, no crowds	3 kN/m ²	4.5 kN	400 mm	600 mm
C34 — institutional, crowds/wheeled	5 kN/m ²	4.5 kN	400 mm	600 mm



Suitable across all four standard load categories — from single-family balconies to institutional areas with crowds or wheeled loads — making STEADEK 200 the specification-ready choice for mixed-use and commercial schemes.



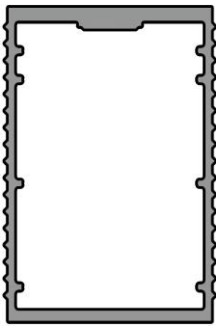
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Complete Support System

STEADEK boards fix to a shared box-rail and adjustable cleat system, engineered for rigid or insulated substrates.

Box Rails



SECTION

40 × 60 × 3mm RHS

WEIGHT

1.52 kg/m

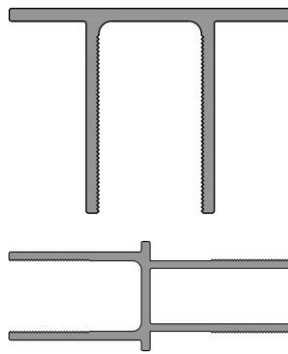
MAX SPAN

1200 mm

MATERIAL

Aluminium 6082 T6

Support Cleats



CLEAT SIZE

110 × 100 × 80 mm

EXTENSION

100 × 160 mm

TYPE

Adjustable, spreading plate

MATERIAL

Aluminium 6082 T6

Fixings



BOARDS → RAILS

SS fixing clips + 5.5×20 CSK screws

RAILS → CLEATS

SS 5.5×20 hex-head screws

MAX TORQUE

2 Nm — no impact drivers

On waterproofing membranes or brittle finishes, an additional metal spreader and rubber protection mat is recommended under each cleat.



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Engineered to Eurocode Standards

DESIGNED IN ACCORDANCE WITH

- BS EN 1990 — Basis of structural design
- BS EN 1991 — Actions on structures
- BS EN 1993 — Design of steel structures
- BS EN 1999 — Design of aluminium structures
- BS 8579:2020 — Guide to the design of balconies and terraces
- UK Building Regulations

MATERIAL PROPERTIES — ALLOY 6082-T6

Density	2.70 g/cm ³
Modulus of Elasticity	69.5 GPa
Proof Stress	250 MPa min
Tensile Strength	310 MPa min
Melting Point	655 °C

L / 250

DEAD + LIVE LOAD DEFLECTION LIMIT

L / 360

LIVE LOAD DEFLECTION LIMIT (IF LOWER)



50-year design life (BS EN 1990, Table NA.2.1). Corrosion protection provides a minimum of 25 years to first major maintenance, specified by the project architect.



Fire Protection. STEADEK boards are manufactured from non-combustible aluminium. The overall fire protection strategy for each project must be specified by the project architect in accordance with Building Regulations and the agreed Fire Strategy.



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Load & Span Reference

Preliminary spans for rails bearing on a rigid substrate. Deflection limit span/250, stress limit 250 MPa, maximum rail span 1200mm.

Application (Load Category)	UDL	Point Load	STEADEK 150 span	STEADEK 200 span
Single-family balconies (A5)	2.5 kN/m ²	2 kN	500 mm	600 mm
Hotel balconies (A7)	4 kN/m ²	2 kN	500 mm	600 mm
Institutional, no crowds (C31)	3 kN/m ²	4.5 kN	<i>Not recommended †</i>	400 mm
Institutional, crowds/wheeled (C34)	5 kN/m ²	4.5 kN	<i>Not recommended †</i>	400 mm

† Increasing the top-flange thickness to 2mm extends STEADEK 150 to a 400mm span for C31/C34 — ask us for project-specific advice.

INDICATIVE ULS BEARING REACTIONS — STEADEK 200

Load Cat.	Span A	Cleat sp. C	Reaction (UDL)	Reaction (Point)
A5	600 mm	1200 mm	2.9 kN	3.14 kN
A7	600 mm	1200 mm	4.5 kN	3.14 kN
C31	400 mm	600 mm	1.2 kN	6.9 kN
C34	400 mm	600 mm	1.9 kN	6.9 kN

These figures are preliminary and project-specific. A full calculation report — including cleat spacing, rail overhang and bearing reactions for insulated substrates — is issued for every STEADEK installation.



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Simple, Secure Installation

STEADEK is designed for fast, tool-light installation on site — no welding, and no impact drivers.



STEP 1

Position rails & cleats

Set out box rails at the design spacing, keeping board cantilever within the calculated limit.
Space adjustable cleats to suit, allowing for rail overhang.



STEP 2

Level & fix cleats

Clip and level the first and last cleat at each end, adding intermediate feet as needed. Add a metal spreader and rubber mat on waterproofing or brittle finishes.



STEP 3

Fix rails to cleats

Secure with self-drilling stainless steel screws at a maximum torque of 2 Nm — never with impact drivers.



STEP 4

Fit the decking boards

Clip STEADEK 150 boards progressively, tightening each row as the next is placed; fix STEADEK 200 boards through the middle width and tap the infill channel home.

Full step-by-step installation guidance, including fixing torque and screw schedules, is issued with every project.



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Standard Colour Range

STEADEK boards are available in a durable, weather-resistant powder-coated finish with a slip-resistant textured surface, tested for safe use outdoors.



Anti-Slip Textured Finish. Every STEADEK board is manufactured with a durable, slip-resistant textured coating, tested to reduce the risk of slipping in wet or high-traffic outdoor areas.

RAL **7016**
Anthracite Grey

RAL **7037**
Dusty Grey

RAL **7039**
Quartz Grey

RAL **7040**
Window Grey

RAL **8014**
Sepia Brown

RAL **8019**
Grey Brown

Note: colours shown are a representation only; variations may occur due to printing and screen display. Physical colour samples are available on request, and special or bespoke colours can also be produced to order.

[Contact us to request your free sample pack](#)



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About D&A Engineering

D&A Engineering is an architectural metalwork specialist, delivering in-house design, manufacture and installation of aluminium systems for residential, commercial and mixed-use developments.

Alongside STEADEK decking, our in-house product range includes aluminium balustrades, Juliet balconies and louvres — engineered, extruded and quality-controlled from our own facility, with full project management and H&S documentation provided for every project.



In-house Design & Manufacture

From CAD to extrusion, fabricated and quality-controlled at our own facility.



Full Project Documentation

Method Statements, Risk Assessments and Project Plans provided in-house.



Complete Aluminium Systems

Balustrades, Juliet balconies, Decking, Cladding and Louvres from one specialist.

ACCREDITED & CERTIFIED





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LT'S TALK STEADEK

Specify STEADEK on Your Next Project

For samples, CAD files, or a project-specific calculation report, get in touch with our technical team.



020 8573 7684



Unit 59-63 Bury Mead Rd, Hitchin, SG5 1RT



Monday – Friday, 7.30am – 5pm

<https://daengineering.co.uk>

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