






Class A Aluminium Box Rail - Technical Datasheet



The Wallbarn Aluminium Box Rails are made from high grade extruded aluminium. They were designed by Wallbarn and made here in the United Kingdom. They are suited to both paving and decking applications and work seamlessly with our plastic and non-combustible pedestals.

PHYSICAL AND CHEMICAL PROPERTIES

	15mm	20mm	25mm
Profile			
Material	Aluminium 6063 T6	Aluminium 6063 T6	Aluminium 6063 T6
Weight	0.90kg/m	0.99kg/m	1.99kg/m
Height	15mm	20mm	25mm
Width	60mm	60mm	60mm
Length	2,500mm	2,500mm	2,500mm
Fire Classification	Class A1 BS EN 13501-1 2018		



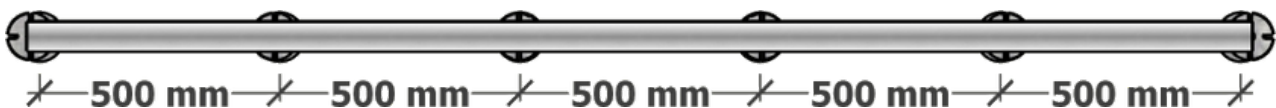
Recommended Pedestal Placement - Box Rail

Wallbarn Aluminium Box Rails/Joists are designed to achieve large spans despite their minimal height and lightweight. These products were independently tested for weight tolerance by Specialist Technical Services (U.K) Limited ([STS- Group](#)). See the Test Certificate : [Appendix A](#)

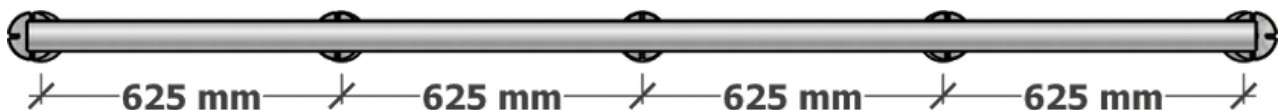
The testing was conducted in accordance with BS 8579:2020, using the test standard method BS 8527:2020, targeting a load resulting in a 5mm deflection. The recommended spacings provided ensure even distribution of the pedestals along the chosen rail, effectively distributing the weight and reducing point loading.

Rail/Joist Height	Recommended maximum distance between pedestals	Tested maximum distance between pedestals
15mm	500mm	600mm
20mm	625mm	800mm
25mm	625mm	1,000mm

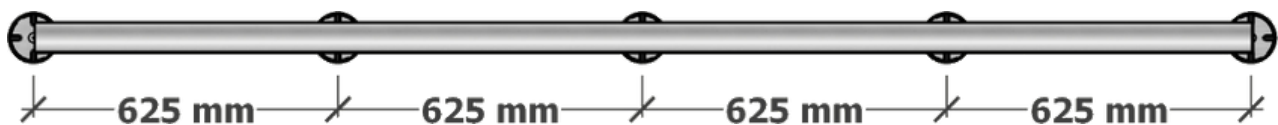
15mm Box Rail/Joist



20mm Box Rail/Joist



25mm Box Rail/Joist





Load Testing - Box Rail

Wallbarn Aluminium Box Rails/Joists have been independently tested by Specialist Technical Services (U.K) Limited to determine destructive load possible. 2 metre lengths of each rail were clamped on each end and a vertical compressive load was applied to the centre. See the Test Certificate : Appendix B

Starting with a 1.05kN force (approximately 107Kg), the rails bent to over 64mm without breaking. It was observed by the tester, that not only did the rails not break under this force, but also regained their original shape after test had finished.

Test Product	STS UK Test - Load Obtained (kN)	STS UK Test - Maximum Displacement (mm)
15mm	1.05 (Approx. 107Kg)	68.77
20mm	1.06 (Approx. 108Kg)	65.87
25mm	1.58 (Approx. 161Kg)	64.63

** 1 Kilonewton (kN) is equal to 101.9716213 kilograms



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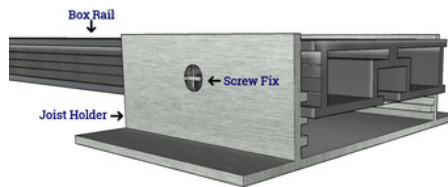
Wallbarn - Technical Datasheet

Compatible Pedestals & Components

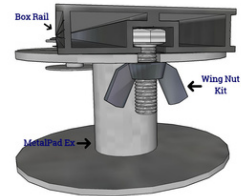
Mega Balance Non-Fire Rated Pedestal



Class A Joist Holder



Class A MetalPad Ex Pedestal



Connecting Brackets

Stainless Steel Straight Brackets

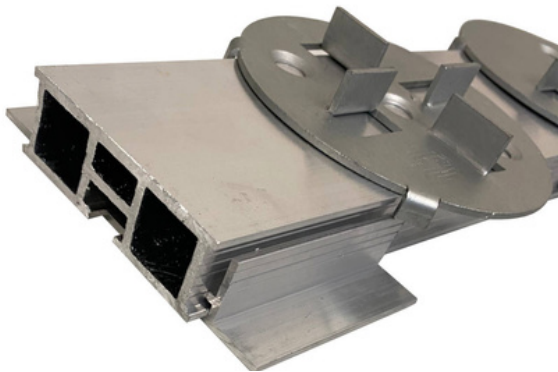


Stainless Steel Right Angle Brackets

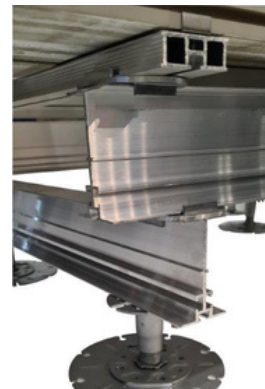


Headpieces

Paving Headpiece



Rail to Rail Headpiece



Appendix A:
TEST CERTIFICATE
LOAD TESTING IN ACCORDANCE WITH
BS 8579:2020



On Wallbarn Limited,
 3 Hagley Court North, The Waterfront, Dudley, West Midlands, DY5 1XF

PROOF LOAD TESTING
STS LABORATORY

TEST DESCRIPTION: A weight tolerance test was conducted on various aluminium rails fitted to steel pedestals, increasing in 100mm spans from the centre of the rail. Testing was completed using a jack to apply a vertical compressive load centre to the product, to confirm structural performance. Loading results obtained were recorded at the limit of 5mm deflection. All testing was carried out in accordance with the client's specification.

REF NO.: DR-5744 **DATE TESTED:** 15th May 2024
JOB NO.: P10259 **CERTIFICATE DATE:** 24th May 2024
CERTIFICATE NO.: IC11716 **SUPPLIER/SOURCE:** Client


TEST DETAILS:
Product Tested: Aluminium Rail with Steel Pedestal **Item Condition:** New
Target Loads: 5mm Deflection **Ambient Temperature:** 18°C
Test Location: STS Laboratory **Procedure or Method:** BS 8527:2020

TEST RESULTS:

Test Product	Load Achieved (kN)											
	100mm from Centre	200mm from Centre	300mm from Centre	400mm from Centre	500mm from Centre	600mm from Centre	700mm from Centre	800mm from Centre	900mm from Centre	1000mm from Centre	1100mm from Centre	1200mm from Centre
15mm Rail	2.04	2.08	2.01	1.13								
20mm Rail	2.02		2.03	1.98								
50mm Rail			2.10	1.54	1.43	1.40	1.28					
75mm Rail			2.26	2.03	2.01	1.97	1.90	1.88	1.78	1.28		
100mm Rail			2.02	2.05	2.05	2.05	2.05	2.02	2.00	2.05	2.02	1.90

ANALYSIS:

Testing was completed with each individual rail obtaining various loads before reaching 5mm deflection. The 15mm & 20mm rail reached a 400mm span before the maximum deflection was obtained, with the 100mm rail reaching a span of 1200mm from the centre, before obtaining maximum permissible deflection. All testing was completed within the BS 8572:2020.

For Specialist Technical Services (U.K) Limited			The results found on this Certificate relate only to the product[s] tested as described above This Test Certificate shall <u>not</u> be reproduced except in full QC: TC001 – Test Certificate – v4.0 Page 1 of 1
Approved By:	Andrew Gore		
Position:	Technical Director		
Signature:			

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Appendix B:

TEST CERTIFICATE LOAD TESTING IN ACCORDANCE WITH THE CLIENT'S SPECIFICATION



On Wallbarn Limited,
3 Hagley Court North, The Waterfront, Dudley, West Midlands, DY5 1XF

PROOF LOAD TESTING STS LABORATORY

TEST DESCRIPTION: A weight tolerance test was conducted on various aluminium rails to determine the destructive load obtainable. Testing was completed using a jack to apply a vertical compressive load centre to the product, to confirm structural performance and determine load failure limit. All testing was carried out in accordance with the client's specification.

REF NO.:	DR-5744	DATE TESTED:	15 th May 2024
JOB NO.:	P10259	CERTIFICATE DATE:	24 th May 2024
CERTIFICATE NO.:	IC11717	SUPPLIER/SOURCE:	Client


TEST DETAILS:			
Product Tested:	Aluminium Rail	Item Condition:	New
Target Loads:	Failure	Ambient Temperature:	18°C
Test Location:	STS Laboratory	Procedure or Method:	Client's Specification

TEST RESULTS:

Test Product	Load Obtained (kN)	Maximum Displacement (mm)
15mm Rail	1.05	68.77
20mm Rail	1.06	65.87
25mm Rail	1.58	64.63
50mm Rail	4.08	44.96
75mm Rail	6.58	32.65
100mm Rail	8.10	27.86

ANALYSIS:

Testing was completed with each individual rail obtaining various loads before reaching failure. The 15mm rail obtained the lowest load (1.05kN) along with the highest displacement (68.77mm), with the 100mm obtaining the highest loading (8.10kN) along with the lowest recorded displacement (27.86mm). All testing was completed within the client's specification.

For Specialist Technical Services (U.K) Limited			The results found on this Certificate relate only to the product[s] tested as described above This Test Certificate shall <u>not</u> be reproduced except in full QC: TC001 – Test Certificate – v4.0 Page 1 of 1
Approved By:	Andrew Gore		
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Signature:			

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