



Aluminium Ultra Shields Compliance and Certification

Introduction

The Mabey Aluminium Ultra Shield range is a shoring product manufactured by Lite Guard Industries in Australia. Mabey PTY Australia are a distributor of Lite Guard Industries Products to the Australian and New Zealand Construction Market. Mabey have requested local engineering compliance sign-off for the Aluminium Versa Shields Range.

Statement

As requested,

Lite Guard Industries company documentation has been reviewed by a qualified Australian structural engineer. The information supplied has been examined for compliance with relevant Australian Standards (see page 2).

Please find below as follows:

- Shoring has been designed by local chartered structural engineers.
- Design is in accordance with Australian, UK, EU, and USA standards. International standards are greater than or equivalent to local standard, AS 4744 – “Steel shoring and trench lining equipment, Part 1: Design”. AS 4744:1 is based on the European Standard EN 13333:1.
- Factory testing to verify product capacity under equivalent site loading has been conducted.
- Lite Guard Equipment has an established reputable history of supplying shoring equipment to the global construction industry for over 20 years.
- The product has demonstrated its performance in a range of conditions throughout the US, Australia and New Zealand.
- The panels and components are maintained in accordance with manufacturers specifications.
- The Mabey Product User Guide which contains further details, including installation and extraction methodologies etc. is available online.

Please find design certification as per page 2.

Regards

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Design Certification of:

Mabey Aluminium Ultra Shields Range

This document certifies the capacity of the Mabey Hire PTY LTD Aluminium Ultra Shield Range when used in accordance with relevant standards and Mabey Product User Guides. It includes all panel and strut configurations as per table below¹:

Panel Type (mm)	Panel Length (mm)	Panel Height (mm)	Panel Thickness (mm)	Min. Width (mm) ²	Max. Width (mm) ²	Strut Size 0m >3.0m (mm)	Strut Size 3.1m >4.0m (mm)	Working Load Limit (kPa)
Standard Base	2400	1200	56	600	1800	WIND OUT ACROW STRUT		20-50

Manhole Base	2000	2000	56	2000	2000	1m (L) 100 x 100 x 9 ONLY		30
Manhole Base	2400	2400	90	2000	4000	1m>3m (L) 100 x 100 x 9 ONLY		50

Lower ³	1800	2000	90	600	4000	100 x 100 x 9	150 x 100 x 9	50
Extension ³	1800	1600	90	600	4000	100 x 100 x 9	150 x 100 x 9	50
Lower ³	3100	2000	90	600	4000	100 x 100 x 9	150 x 100 x 9	50
Extension ³	3100	2000	90	600	4000	100 x 100 x 9	150 x 100 x 9	50
Lower ³	3600	2400	90	600	4000	100 x 100 x 9	150 x 100 x 9	36
Extension ³	3600	2000	90	600	4000	100 x 100 x 9	150 x 100 x 9	36
Lower ³	4000	2400	150	600	4000	100 x 100 x 9	150 x 100 x 9	70
Extension ³	4000	2000	150	600	4000	100 x 100 x 9	150 x 100 x 9	70
Lower ³	6000	2400	150	600	4000	100 x 100 x 9	150 x 100 x 9	45
Extension ³	6000	2400	150	600	4000	100 x 100 x 9	150 x 100 x 9	45
Lower ³	7200	2400	150	600	4000	100 x 100 x 9	150 x 100 x 9	36
Extension ³	7200	2400	150	600	4000	100 x 100 x 9	150 x 100 x 9	36

All the above panels (except standard base and manhole base) are adaptable with the High Clear Arch Strut Configuration Setup. These range from a minimum width of 2.1m to a maximum width of 4.0m (internal of panels). The Panel SWL remains the same when using High Clear Arch Struts.

The Aluminium Versa Shield range is compliant with the following standards:

- AS 4744.1: 2000 – Steel Shoring and Trench Lining Systems – Part 1 - Design⁴
- AS4100: 1998 – Steel Structures
- AS/NZS 1664.1: 1997 – Aluminium Structures

Signed

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¹ Also includes all nominated pins and clips etc.

² Widths stated are internal of panel to internal of panel.

³ If the panel is to be used as an end panel at the end of a trench box or manhole box, the above kPa SWL is suitable providing a minimum 100mm bearing is allowed for at either end.

⁴ Part 1.4 (New Designs and Innovations) within AS 4744.1:2000 states that "This Standard is not intended to preclude novel materials, designs and the like, which do not comply with this Standard or are not mentioned in it but can be shown to give equivalent or superior results". Aluminium components therefor fall under novel materials and designs. As the versa shields range has aluminium panels and steel struts the appropriate material standards have been used to comply with AS 4744.1:2000



Design Certification of:

Lifting Points

This Document Certifies the capacity of the lifting points on all the box panels detailed on page 2.

The minimum WLL of a single lifting point on any box panel is 3.0T (FOS of 3) or 12T for 4 no. lifting points. This rated capacity is for any angle between vertical and 60° from vertical.

It is the user's responsibility to determine all relevant safety matters regards lifting, transporting, installing and extracting of shoring components. A minimum of 2 chains must always be used when lifting box panels. A minimum of 4 chains must always be used when lifting built up box systems. Additional care must be used if using a single chain to pull on lifting points where a trench box system is held tightly in the ground.

Signed

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Appendix A: Strut Designation

Introduction

AS 4744.1:2000, Section 3.2 gives guidance on supporting componentry designation. Mabey have in stock over 20,000 individual Strut members in various lengths and sizes. Considering this number of strut members, it is not always practical or possible to ensure all members have this information displayed.

The below gives details on the strut designation of Ultra Shield Struts if this information is not displayed:

Strut Size	Strut Length (mm)	Strut Designation
Acrow Strut Size 1 (Adjustable)	600 to 900	Strut AS 4744 – 30 (kN) / 30 (kN)-0.6m to 0.9m-10kg
Acrow Strut Size 2 (Adjustable)	900 to 1800	Strut AS 4744 – 30 (kN) / 30 (kN)-0.9m to 1.8m-13kg

 100 x 100 x 9 SHS	600	Strut AS 4744 – 600 (kN) / 605 (kN)-0.6m -15.0kg
	700	Strut AS 4744 – 593 (kN) / 605 (kN)-0.7m -17.5kg
	800	Strut AS 4744 – 588 (kN) / 605 (kN)-0.8m -20.0kg
	900	Strut AS 4744 – 581 (kN) / 605 (kN)-0.9m -22.5kg
	1000	Strut AS 4744 – 575 (kN) / 605 (kN)-1.0m -25.0kg
	1100	Strut AS 4744 – 567 (kN) / 605 (kN)-1.1m -27.5kg
	1200	Strut AS 4744 – 559 (kN) / 605 (kN)-1.2m -30.0kg
	1300	Strut AS 4744 – 551 (kN) / 605 (kN)-1.3m -32.5kg
	1400	Strut AS 4744 – 543 (kN) / 605 (kN)-1.4m -35.0kg
	1500	Strut AS 4744 – 535 (kN) / 605 (kN)-1.5m -37.5kg
	1600	Strut AS 4744 – 523 (kN) / 605 (kN)-1.6m -40.0kg
	1700	Strut AS 4744 – 511 (kN) / 605 (kN)-1.7m -42.5kg
	1800	Strut AS 4744 – 499 (kN) / 605 (kN)-1.8m -45.0kg
	1900	Strut AS 4744 – 487 (kN) / 605 (kN)-1.9m -47.5kg
	2000	Strut AS 4744 – 475 (kN) / 605 (kN)-2.0m -50.0kg
	2100	Strut AS 4744 – 459 (kN) / 605 (kN)-2.1m -52.5kg
	2200	Strut AS 4744 – 443 (kN) / 605 (kN)-2.2m -55.0kg
	2300	Strut AS 4744 – 427 (kN) / 605 (kN)-2.3m -57.5kg
	2400	Strut AS 4744 – 411 (kN) / 605 (kN)-2.4m -60.0kg
	2500	Strut AS 4744 – 396 (kN) / 605 (kN)-2.5m -62.5kg
2600	Strut AS 4744 – 380 (kN) / 605 (kN)-2.6m -65.0kg	
2700	Strut AS 4744 – 364 (kN) / 605 (kN)-2.7m -67.5kg	
2800	Strut AS 4744 – 348 (kN) / 605 (kN)-2.8m -70.0kg	
2900	Strut AS 4744 – 332 (kN) / 605 (kN)-2.9m -72.5kg	
3000	Strut AS 4744 – 315 (kN) / 605 (kN)-3.0m -75.0kg	

150 x 100 x 9 SHS	3100	Strut AS 4744 – 445 (kN) / 790 (kN)-3.1m -99.2kg
	3200	Strut AS 4744 – 423 (kN) / 790 (kN)-3.2m -102.4kg
	3300	Strut AS 4744 – 401 (kN) / 790 (kN)-3.3m -105.6kg
	3400	Strut AS 4744 – 379 (kN) / 790 (kN)-3.4m -108.8kg
	3500	Strut AS 4744 – 356 (kN) / 790 (kN)-3.5m -112.0kg
	3600	Strut AS 4744 – 342 (kN) / 790 (kN)-3.6m -115.2kg
	3700	Strut AS 4744 – 328 (kN) / 790 (kN)-3.7m -118.4kg
	3800	Strut AS 4744 – 314 (kN) / 790 (kN)-3.8m -121.6kg
	3900	Strut AS 4744 – 300 (kN) / 790 (kN)-3.9m -124.8kg
	4000	Strut AS 4744 – 283 (kN) / 790 (kN)-4.0m -128.0kg

High clear Bars (Adjustable)	2100 to 4000	Strut AS 4744 - 600(kN) / 605 (kN)-2.1m to 4.0m-500kg
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