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|-------------------------------|---|
| <b>Material Specification</b> | Grade 6082 T6 Aluminium Alloy   |
| <b>Loading Specification</b>  | For simply supported single Ladder Beams to Eurocode EN 1991-1/BS EN 8118.<br>All load values are working loads.<br>All load values are based on the compression chords restrained at 1.0m centres. |

## Overall Graded Results for Allowable Working Loads

Compression chord restraint at 1.0m intervals

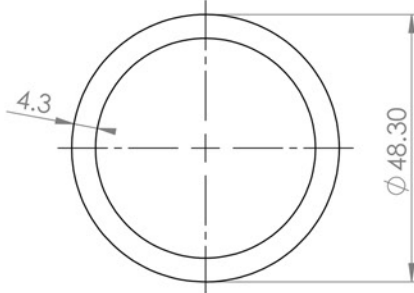


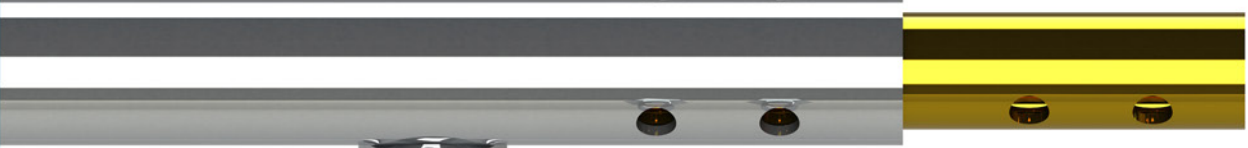

|                                    |      | Span (m) |     |      |      |
|------------------------------------|------|----------|-----|------|------|
|                                    |      | 3        | 6   | 9    | 12   |
| Allowable Bending Moment           | kN/m | 5.0      | 9.0 | 12.1 | 14.4 |
| Allowable Shear (Load on vertical) | kN   | 5.6      | 5.2 | 5.5  | 5.4  |

|                |                                     |
|----------------|-------------------------------------|
| Weight         | 4.5kg/m                             |
| Area           | 1188mm <sup>2</sup>                 |
| I <sub>x</sub> | 2.8x10 <sup>7</sup> mm <sup>4</sup> |
| I <sub>y</sub> | 2.9x10 <sup>9</sup> mm <sup>4</sup> |
| C <sub>x</sub> | 353mm                               |
| C <sub>y</sub> | 24.15mm                             |
| E              | 7x10 <sup>4</sup> N/mm <sup>2</sup> |

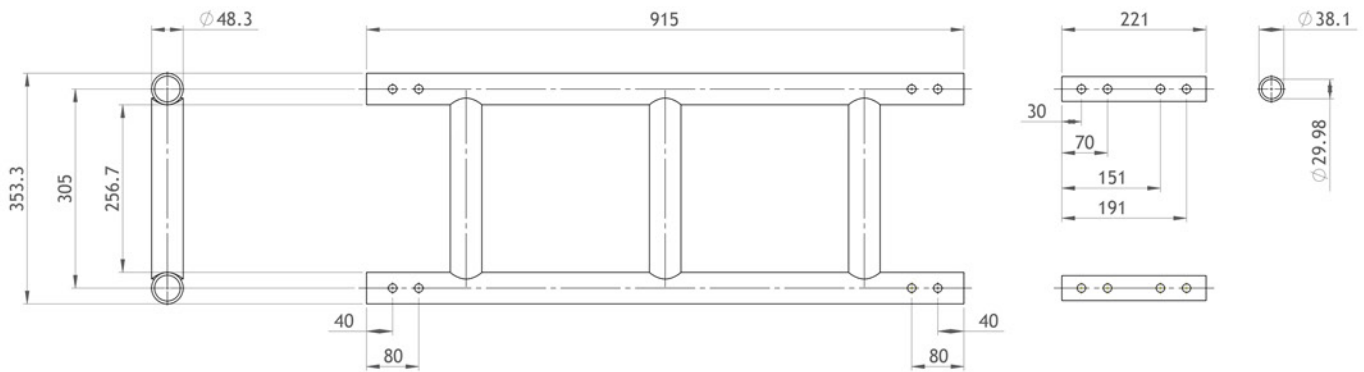
| Type of Loading            |         | Span (m) |      |      |      |      |      |      |      |      |      |     |
|----------------------------|---------|----------|------|------|------|------|------|------|------|------|------|-----|
|                            |         | 2        | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12  |
| Uniformly distributed load | kN/m    | 5.6      | 3.7  | 2.6  | 2.1  | 1.7  | 1.5  | 1.4  | 1.2  | 1.0  | 1.0  | 0.8 |
| Total UDL                  | kN      | 11.2     | 11.2 | 10.4 | 10.4 | 10.4 | 10.3 | 11.0 | 10.8 | 10.7 | 10.5 | 9.6 |
| Single point load          | kN      | 10.0     | 9.5  | 9.0  | 7.2  | 6.0  | 5.1  | 6.1  | 5.4  | 4.8  | 5.2  | 4.8 |
| Two point loads            | Each kN | 5.6      | 5.0  | 5.2  | 5.2  | 4.5  | 3.9  | 4.5  | 4.0  | 3.6  | 3.9  | 3.6 |
| Three point loads          | Each kN | 3.7      | 3.3  | 3.5  | 3.5  | 3.0  | 2.6  | 3.0  | 2.7  | 2.4  | 2.6  | 2.4 |

- Notes:**
- Above allowable loads can be increased by 1.11 for wind load only cases.
  - The tables above for single and two point locations assume all loads are applied at beam node points.
  - The tables above for UDL and three point load conditions make an allowance for local bending.
  - If the restraint of the beam compression chords does not comply with 1.0m centres, further design checks are required.
  - Allowable loads take into account the self weight of the beam.
  - The tables above are based on the support conditions for the beams to occur at a beam node point.  
All beams are assumed simply supported.
  - Supporting calculations are based on BS EN 1999-1-2 A2.
  - Maximum single point load 10kN (to be positioned as close to the node as possible).
  - Factor of Safety 1.65.
  - Permissible loads calculated in accordance with EN 1999-1-1:2007 and obtained through physical testing to EN 12811 Part 3.
  - Restraint point must support both top and bottom booms at restraint point.

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| <b>Additional Information</b> | Our welders are qualified to: EN 287-1 AS/NZS 1665 2004 BS EN 9606-2 2004 ISO 5817 2007<br>Welding and material test certs available on request.<br>Apollo Scaffold Services are accredited to EN 1090-1:2009+A1:2011 - Execution of steel structures and aluminium structures (0086-CPR-637568). The manufacture (including welding) of structural work in steel and aluminium up to and including Execution Class 2 (EXC 2) as defined in EN 1090-2 and EN 1090-3.<br>Full set of calculations available on Apollo Scaffold Services website: <a href="http://apolloscaffoldservices.co.uk">apolloscaffoldservices.co.uk</a> |
| <b>Disclaimer</b>             | <b>Apollo Scaffold Services Ltd. advise on using a qualified structural engineer to design any project using aluminium beams.</b>  |

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|--|---|
| Material Specification   | Grade 6082 T6 Aluminium Alloy   |
| Dimension Specification  | Tube: 48.3mm dia. x 4.2-4.4mm wall thickness  |
| <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p><b>Main Boom &amp; Verticals</b></p> </div> <div style="text-align: center;"> <p style="color: red;"><b>If the Made In Britain hologram sticker is not present, then specification is invalid.</b></p>  <p>1. Serial number</p> </div> </div> |   |
| Fixing Specification   | M12x65 Grade 8.8 Zinc Plated Bolts and Nyloc Nuts   |
| <div style="text-align: center;"> <p>Grade 8.8 Zinc Plated Nyloc Nuts</p>   <p>Spigot</p>  <p>M12x65 Grade 8.8 Zinc Bolts</p> </div>  |   |
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|                              |   |
|------------------------------|---|
| <b>Key Dimensions</b>        | <b>Dimensions of Beam and Spigot Connection</b>   |
| <b>Standard Beam Lengths</b> | 915mm (3ft) / 1220mm (4ft) / 1525mm (5ft) / 1830mm (6ft) / 2135mm (7ft) / 2440mm (8ft) / 2745mm (9ft) / 3050mm (10ft) / 3355mm (11ft) / 3660mm (12ft) / 3965mm (13ft) / 4270mm (14ft) / 4575mm (15ft) / 4880mm (16ft) / 5185mm (17ft) / 5490mm (18ft) / 5795mm (19ft) / 6100mm (20ft) / 6405mm (21ft) / 6710mm (22ft) / 7015mm (23ft) / 7320mm (24ft) / 7625mm (25ft) / 7930mm (26ft) |



Spigot connections can be introduced at any location in a beam span and don't impact on the beam capacities quoted

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