

Technical data

TD2405-



<ELB> ladder beam

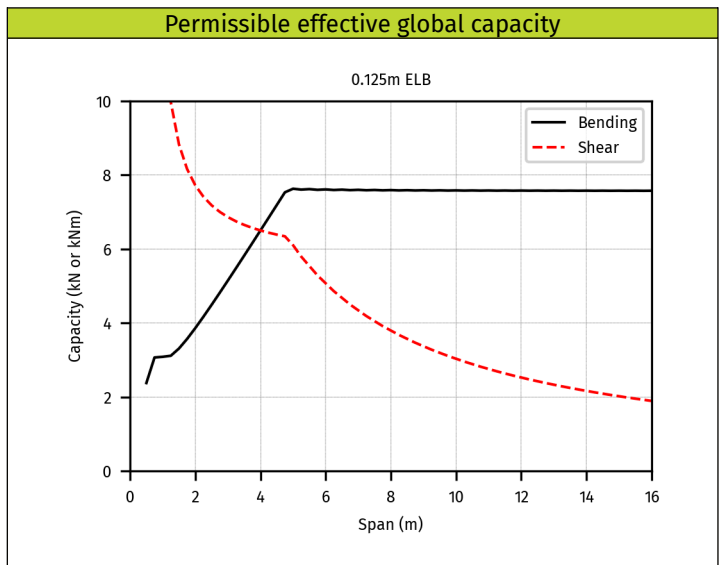
Part	Detail	Description	Weight (kg)
ELB1000		1.0m 0.125m aluminium ladder beam	4.0
ELB1500		1.5m 0.125m aluminium ladder beam	6.0
ELB2000		2.0m 0.125m aluminium ladder beam	8.0
ELB3000		3.0m 0.125m aluminium ladder beam	12.0
ELB4000		4.0m 0.125m aluminium ladder beam	16.0
LVS0001		6-hole LV series steel spigot	1.4
LFX0001		Q/R Pin M12x60	-

Cross section properties	Puncheon locations
<p> $A = 1230 \text{ mm}^2$ $I_{zz} = 5104000 \text{ mm}^4$ $I_{yy} = 298300 \text{ mm}^4$ </p> <p>Stated parameters are based on chords only to allow for equivalent global member analysis</p>	<p>Puncheon fitted to both top and bottom chords as shown</p>

Splice detail
<p>All splices made with Lev3 spigots and Q/R pins ensuring all are fitted and secure. Connection can also be achieved with M12x60 G8.8 bolts</p>

Permissible moment capacity	Permissible shear capacity
1m c/c restraints: 7.2 kNm	6.1 kN

Permissible local member properties					
Property	Symbol	CHS 48.3x4.47	Chord HAZ	Post HAZ	Units
Geometry					
Area	A	615.1	452.9	307.5	mm ²
Second moment of area y-direction	I _{yy}	149143.4	109849.2	73996.0	mm ⁴
Second moment of area z-direction	I _{zz}	149143.4	101703.2	73996.0	mm ⁴
Tension	N _{t,Rd}	93.2	77.1	60.9	kN
Compression	N _{c,Rd}	67.3	57.0	61.0	kN
Shear y-direction	V _{y,Rd}	32.3	20.8	13.5	kN
Shear z-direction	V _{z,Rd}	32.3	16.1	13.5	kN
Moment y-direction	M _{y,Rd}	0.96	0.88	0.63	kNm
Moment z-direction	M _{z,Rd}	0.96	0.71	0.63	kNm



Safe span graph																																																				
<div><p>0.125m ELB</p><table border="1"><caption>Approximate data points from the Safe span graph</caption><thead><tr><th>Span (m)</th><th>UDL (kN/m)</th><th>1P (kN)</th><th>2P (kN)</th><th>3P (kN)</th></tr></thead><tbody><tr><td>0</td><td>-</td><td>-</td><td>10</td><td>10</td></tr><tr><td>2</td><td>10</td><td>8</td><td>6</td><td>4</td></tr><tr><td>4</td><td>4</td><td>7</td><td>5</td><td>3.5</td></tr><tr><td>6</td><td>2</td><td>5.5</td><td>4</td><td>2.5</td></tr><tr><td>8</td><td>1</td><td>4.5</td><td>3</td><td>2</td></tr><tr><td>10</td><td>0.5</td><td>3.5</td><td>2.5</td><td>1.5</td></tr><tr><td>12</td><td>0.3</td><td>3</td><td>2</td><td>1.2</td></tr><tr><td>14</td><td>0.2</td><td>2.5</td><td>1.5</td><td>1</td></tr><tr><td>16</td><td>0.1</td><td>2</td><td>1.2</td><td>0.8</td></tr></tbody></table></div>	Span (m)	UDL (kN/m)	1P (kN)	2P (kN)	3P (kN)	0	-	-	10	10	2	10	8	6	4	4	4	7	5	3.5	6	2	5.5	4	2.5	8	1	4.5	3	2	10	0.5	3.5	2.5	1.5	12	0.3	3	2	1.2	14	0.2	2.5	1.5	1	16	0.1	2	1.2	0.8	<div><p>Uniformly distributed load (UDL)</p>$V_{max} = \frac{wL}{2} \quad M_{max} = \frac{wL^2}{8}$</div>	<div><p>Single midspan point load (1P)</p>$V_{max} = \frac{P}{2} \quad M_{max} = \frac{PL}{4}$</div>
	Span (m)	UDL (kN/m)	1P (kN)	2P (kN)	3P (kN)																																															
0	-	-	10	10																																																
2	10	8	6	4																																																
4	4	7	5	3.5																																																
6	2	5.5	4	2.5																																																
8	1	4.5	3	2																																																
10	0.5	3.5	2.5	1.5																																																
12	0.3	3	2	1.2																																																
14	0.2	2.5	1.5	1																																																
16	0.1	2	1.2	0.8																																																
	<div><p>Two point loads at thirds (2P)</p>$V_{max} = P \quad M_{max} = Pa$</div>	<div><p>Three point loads at quarters (3P)</p>$V_{max} = \frac{3P}{2} \quad M_{max} = \frac{5PL}{12}$</div>																																																		

Notes

- The data provided is calculated following guidance given in BS EN 1999-1-1:2007+A2:2013 and supported by physical testing to BS EN 12811-3:2002.
 - Local member capacities are provided for users who wish to analyse as a frame, this is recommended in high shear applications because of the Vierendeel frame effects.
 - The Effective global capacity data was generated from a series of frame analysis using a uniformly distributed load, it is recommended that this graph NOT be used for short spans.
 - The safe span graphs shown assume pinned supports, are for guidance only and should be considered in conjunction with effective permissible moment and shear values provided.
 - Data provided requires spliced beams connected using all three pin holes each side using Lev3 Q/R pins or at least grade 8.8 bolts and nuts.
 - Lacing and bracing restraints should be checked as effective and have a 1.0m maximum spacing.
 - Bracing can be complete with Lev3 system bracing, or using EN 39 steel scaffold tube and EN74 Class B Right angle couplers.
 - If insufficient bracing is provided further design checks are required and advice from Lev3 should be sought.
 - For applications where span is higher than 5m and high capacity is required see Lev3's QLB, LV or LX beam ranges.
- The information provided is based on prevailing legislation and testing. Lev3 Products Ltd reserves the right to make technical changes, users should ensure that only current revisions of this Technical data sheet are used. Published data refers to original genuine Lev3 material only. © Lev3 Products Ltd. No unauthorised use, copy or disclosure is to be made.

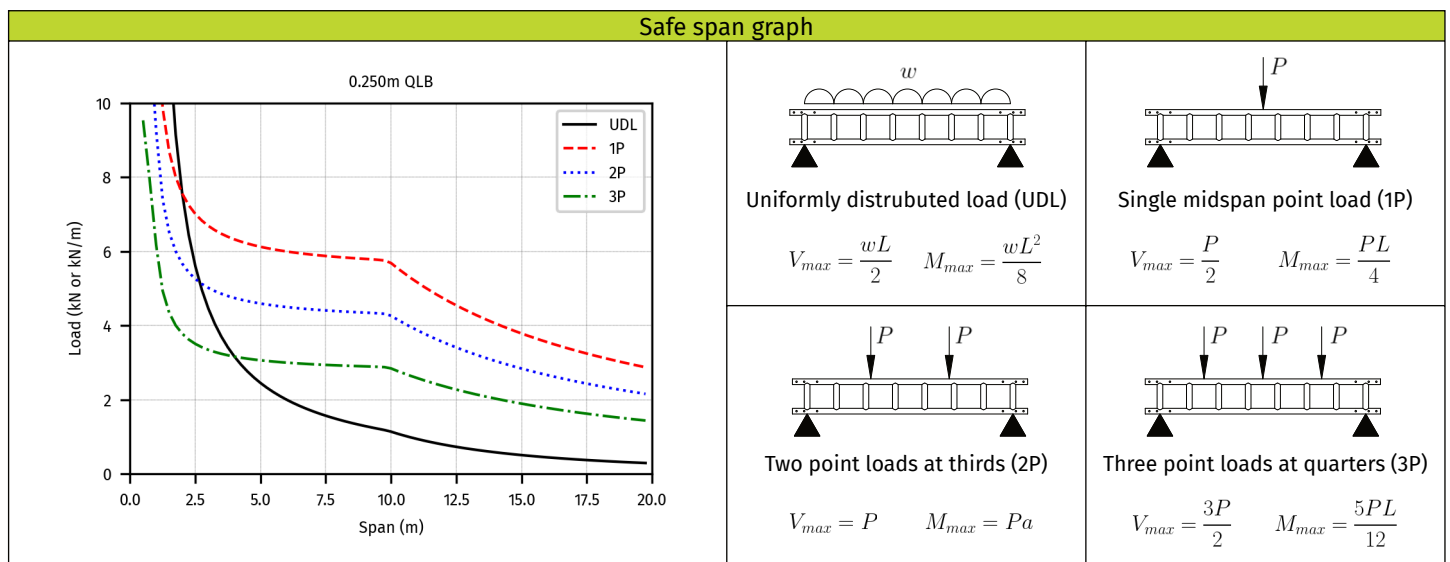
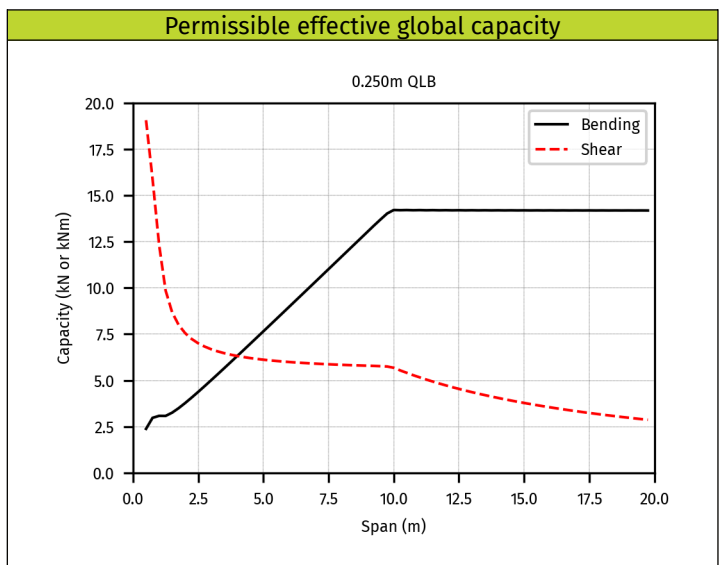
Part	Detail	Description	Weight (kg)
QLB1000		1.0m 0.250m aluminium ladder beam	4.7
QLB1500		1.5m 0.250m aluminium ladder beam	7.1
QLB2000		2.0m 0.250m aluminium ladder beam	9.4
QLB3000		3.0m 0.250m aluminium ladder beam	14.1
QLB4000		4.0m 0.250m aluminium ladder beam	18.9
LVS0001		6-hole LV series steel spigot	1.4
LFX0001		Q/R Pin M12x60	-

Cross section properties	Puncheon locations
<p> $A = 1230 \text{ mm}^2$ $I_{zz} = 19520000 \text{ mm}^4$ $I_{yy} = 298300 \text{ mm}^4$ </p> <p>Stated parameters are based on chords only to allow for equivalent global member analysis</p>	<p>Puncheon fitted to both top and bottom chords as shown</p>

Splice detail
<p>All splices made with Lev3 spigots and Q/R pins ensuring all are fitted and secure. Connection can also be achieved with M12x60 G8.8 bolts</p>

Permissible moment capacity	Permissible shear capacity
1m c/c restraints: 14.1 kNm	5.7 kN

Permissible local member properties					
Property	Symbol	CHS 48.3x4.47	Chord HAZ	Post HAZ	Units
Geometry					
Area	A	615.1	452.9	307.5	mm ²
Second moment of area y-direction	I_{yy}	149143.4	109849.2	73996.0	mm ⁴
Second moment of area z-direction	I_{zz}	149143.4	101703.2	73996.0	mm ⁴
Tension	$N_{t,Rd}$	93.2	77.1	60.9	kN
Compression	$N_{c,Rd}$	67.3	55.8	61.0	kN
Shear y-direction	$V_{y,Rd}$	32.3	20.8	13.5	kN
Shear z-direction	$V_{z,Rd}$	32.3	16.1	13.5	kN
Moment y-direction	$M_{y,Rd}$	0.96	0.88	0.63	kNm
Moment z-direction	$M_{z,Rd}$	0.96	0.71	0.63	kNm



Notes
<ol style="list-style-type: none"> The data provided is calculated following guidance given in BS EN 1999-1-1:2007+A2:2013 and supported by physical testing to BS EN 12811-3:2002. Local member capacities are provided for users who wish to analyse as a frame, this is recommended in high shear applications because of the Vierendeel frame effects. The Effective global capacity data was generated from a series of frame analysis using a uniformly distributed load, it is recommended that this graph NOT be used for short spans. The safe span graphs shown assume pinned supports, are for guidance only and should be considered in conjunction with effective permissible moment and shear values provided. Data provided requires spliced beams connected using all three pin holes each side using Lev3 Q/R pins or at least grade 8.8 bolts and nuts. Lacing and bracing restraints should be checked as effective and have a 1.0m maximum spacing. Bracing can be complete with Lev3 system bracing, or using EN 39 steel scaffold tube and EN74 Class B Right angle couplers. If insufficient bracing is provided further design checks are required and advice from Lev3 should be sought. For applications where span is higher than 5m and high capacity is required see Lev3's LV or LX beam ranges. <p>The information provided is based on prevailing legislation and testing. Lev3 Products Ltd reserves the right to make technical changes, users should ensure that only current revisions of this Technical data sheet are used. Published data refers to original genuine Lev3 material only. © Lev3 Products Ltd. No unauthorised use, copy or disclosure is to be made.</p>