

# LV45 Technical Data Sheet 1 of 2

## 45cm Aluminium Scaffolding Beams



Part #	Detail	Description	Weight
LV45_0500		0.5m 45cm Beam	3.0 Kg
LV45_1000		1.0m 45cm Beam	6.0 Kg
LV45_2000		2.0m 45cm Beam	12.0 Kg
LV45_3000		3.0m 45cm Beam	17.5 Kg
LV45_4000		4.0m 45cm Beam	22.0 Kg

Part #	Detail	Description	Weight
LV45_5000		5.0m 45cm Beam	26.0 Kg
LV45_6000		6.0m 45cm Beam	34.5 Kg
LV45_8000		8.0m 45cm Beam	46.0 Kg
LVBS006		6 Hole Spigot Piece	1.2 Kg
LVQR12_60		Spigot Pins	-

**Cross Section Properties**

A: 12.4 cm<sup>2</sup>  
 I<sub>zz</sub>: 5025 cm<sup>4</sup>  
 I<sub>yy</sub>: 30 cm<sup>4</sup>

NB – stated parameters are based on chords only to allow for equivalent member analysis if required. For weights refer to table.

**Puncheon Locations**

Puncheons are only to be fitted at node locations as shown in the above diagram.

**Splice Detail**

All splices are to be made with the LCP Ltd spigot and the supplied two bolts are to be fitted each side of the joint.

Ultimate Moment Capacity (kN.m)		Ultimate Shear Capacity (kN)
Beam : Compression Chord Braced at 0.5m centres	46.0 kN.m	All Cases: 31.3 kN
Spliced Beam : Compression Chord Braced at 0.5m centres	31.0 kN.m	
Beam : Compression Chord Braced at 1.0m centres	32.1 kN.m	
Spliced Beam : Compression Chord Braced at 1.0m centres	31.0 kN.m	
Beam : Compression Chord Braced at 2.0m centres	11.5 kN.m	
Note – The moment capacity of spliced beams with compression chord restrained at 2.0m centres is as per the stated unspliced beam moment capacity.		
The Design Engineer should choose one of the applicable Safety Factors – 1.3, 1.5 or 1.65.		

Compression Chord Lacing at 0.5m Centres		Span (m)				
		4.0	6.0	8.0	10.0	12.0
Uniformly Distributed Load	(kN/m ULS)	16.0	8.6	4.9	2.3	1.5
	SLS Deflection (mm)	13	31	53	61	80
Mid Span Point Load	(kN ULS)	46.9	30.9	22.9	13.0	10.5
	SLS Deflection (mm)	17	31	52	57	80
Two Point Loads at Third Points	(kN ULS, each)	26.6	23.4	14.9	8.6	6.4
	SLS Deflection (mm)	16	38	53	64	80
Three Point Loads at Quarter Points	(kN ULS, each)	17.7	15.6	10.2	6.2	4.5
	SLS Deflection (mm)	14	36	53	64	80
Point Load Every Node (Equivalent UDL)	(kN/m ULS)	16.0	10.5	4.9	2.5	1.5
	SLS Deflection (mm)	13	37	53	64	80

**NOTES**

- Loads stated are ultimate limit state based on the provision of simple supports at each bearing. Refer to Sheet 2 of 2 for load locations.
- Loads for 4m, 6m and 8m spans are based on unspliced beams. 10m and 12m beams are assumed to be spliced mid span.
- Resistances stated are design ultimate resistances ( $X_{d,r}$ )
- To convert to 'safe working' loading/resistance divide the stated load/resistance by 1.3, 1.5 or 1.65.
- Loads should be applied at node locations only, with the exception of the 'Uniformly Distributed Load' which is calculated allowing for local member bending effects.
- 'Point Load Every Node' is the equivalent UDL applied as point loads at each node (ie each PL = stated kN/m x 0.5m chord node c/c). No local member bending effects are considered.
- Supporting calculations are in accordance with BS EN 1999-1-2:2007+A2:2013.
- Spliced beams must be connected using both bolt holes in each side of the spigot piece using the supplied bolts/pins.
- Lacing tubes are to be connected with Class A Right Angle couplers. Bracing is to be connected with Class A Swivel couplers.

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# LV45 Technical Data Sheet 2 of 2

## 45cm Aluminium Scaffolding Beams



Compression Chord Lacing at 1.0m Centres		Span (m)				
		4.0	6.0	8.0	10.0	12.0
Uniformly Distributed Load	(kN/m ULS)	12.6	6.4	3.7	2.3	1.5
	SLS Deflection (mm)	10	23	40	61	80
Mid Span Point Load	(kN ULS)	43.9	25.8	18.0	13.0	10.5
	SLS Deflection (mm)	16	26	41	57	80
Two Point Loads at Third Points	(kN ULS, each)	22.0	16.3	12.7	8.6	6.4
	SLS Deflection (mm)	13	27	46	64	80
Three Point Loads at Quarter Points	(kN ULS, each)	17.7	11.8	8.4	6.2	4.5
	SLS Deflection (mm)	14	27	44	64	80
Point Load Every Node (Equivalent UDL)	(kN/m ULS)	16.0	7.5	4.1	2.5	1.5
	SLS Deflection (mm)	13	27	44	64	80

Compression Chord Lacing at 2.0m Centres		Span (m)				
		4.0	6.0	8.0	10.0	12.0
Uniformly Distributed Load	(kN/m ULS)	5.6	2.5	1.4	0.9	0.6
	SLS Deflection (mm)	4	9	15	24	34
Mid Span Point Load	(kN ULS)	15.8	9.3	6.5	4.9	4.0
	SLS Deflection (mm)	6	9	15	22	30
Two Point Loads at Third Points	(kN ULS, each)	7.9	5.9	4.6	3.2	2.8
	SLS Deflection (mm)	5	10	16	24	35
Three Point Loads at Quarter Points	(kN ULS, each)	6.8	4.2	3.0	2.3	1.9
	SLS Deflection (mm)	5	10	16	24	34
Point Load Every Node (Equivalent UDL)	(kN/m ULS)	6.4	2.7	1.5	0.9	0.6
	SLS Deflection (mm)	5	10	16	24	34

Applied Load Locations	
	Uniformly Distributed Load
	Mid Span Point Load
	Two Point Loads at Third Points
	Three Point Loads at Quarter Points
	Point Load Every Node (Equivalent UDL)

Maintenance Loading	
<p>With an applied unfactored loading of 1 kN/m UDL as a continuous load to the top chord, representing a typical light maintenance loading, the LV45 series beams can achieve the following maximum spans:</p>	
0.5m c/c Chord Restraints	12.0m
1.0m c/c Chord Restraints	12.0m
2.0m c/c Chord Restraints	8.0m

**This sheet is to be read in conjunction with LV45 Technical Data Sheet 1 of 2**

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