

Specification for Precast Concrete Lintels

Special Notes

These tables are specific to lintels by Killeshal Precast Concrete.

Killeshal Precast Concrete can certify their lintels when used as specified in these tables.

Pre-stressed Lintels should be placed rough side up to achieve maximum bond with the composite blockwork above.

Applicable Standards

Killeshal Precast Concrete Lintels are manufactured to comply with the various standards listed in the panel below.

NHBGS	2008 House Building Manual
BS 8110	1985 Reinforced and Prestressed Concrete
EN 845	2003 Specification for Ancillary Components for Masonry, Part 2 - LINTELS
IS 326	1988 Code of Practice for Structural Concrete
EN 771	2011 Specification for Masonry Units- Part 3: Aggregate Concrete Masonry Units (Dense and Lightweight Aggregates)
IS 406	1987 Masonry Mortars

Pre-Stressed Units

- Minimum characteristic strength of concrete at 28 days- 45 N/Sq mm.
- Minimum characteristic strength of concrete at release of prestress- 30 N/Sq mm.
- Minimum characteristic strength of 7.9 mm diameter strand- 69 kN, stressed to 48.3 kN (70%) at release.
- Minimum characteristic strength of 9.3 mm diameter strand- 93.5 kN, stressed to 46.75 kN (50%) at release.

Reinforced Units

- Minimum characteristic strength of concrete at 28 days-40 N/Sq mm.
- Minimum characteristic strength of reinforcement 460 N/Sq mm (High Tensile) or 250 N/Sq mm (Mild).
- Detailing of reinforcement in accordance with BS 8110, particularly anchorage at bearings.

Composite Units

- Lintel- per specification in either of two previous paragraphs.
- Insitu concrete should have a minimum characteristic strength of 30N/Sq mm.
- Solid blocks should have minimum strength 5N/Sq mm with joints fully mortar-filled.
- Bricks of external quality 15N/Sq mm.
- Mortar should be 1:1:6 Cement: Lime: Sand or 1:6 Cement: Sand with plasticiser.
- Bedding of blocks onto precast lintel should be with mortar uninterrupted with DPC. Blockwork Depth shown on the tables is minimum required.
- Bearing should be a minimum of 150 mm for spans up to 1.5m and 200 mm for spans over 1.5m. Lintels should be bedded on mortar at supports.
- Props should have a maximum spacing of 1.2m and remain in position until construction has matured. Props should be used for spans in excess of 1.2m.

Loading

- Loading should not exceed the relevant values given in the tables presented in the following pages.
- All loads in tables are given Kn/m.

Design

- Design to allow for handling and transport stresses in addition to stresses imposed in the final position of the lintel.

UK site

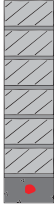


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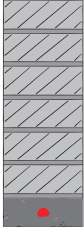
A. Composite Lintel: 100mm wide solid masonry on 100x65mm deep lintel

		CLEAR SPAN (m)						
No. of Courses	Blockwork Depth (mm)	0.5	1	1.5	2	2.5		
	1	75	9	4	3	-	-	
	2	150	12	6	4	3	2	
	3	225	>12	9	6	4	3	
	4	300	>12	12	8	5	4	
	5	375	>12	>12	10	7	5	
	6	450	>12	>12	12	8	6	

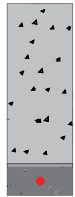
B. Composite Lintel: 100mm wide concrete on 100x65mm deep lintel

		CLEAR SPAN (m)						
	Concrete Depth (mm)	0.5	1	1.5	2	2.5		
	1	75	12	11	6	4	2	
	2	150	>12	12	10	6	4	
	3	225	>12	>12	12	8	5	
	4	300	>12	>12	>12	10	6	
	5	375	>12	>12	>12	12	9	

C. Composite Lintel: 150mm wide solid masonry on 150x65mm deep lintel

		CLEAR SPAN (m)						
No. of Courses	Blockwork Depth (mm)	0.5	1	1.5	2	2.5	3	
	1	75	9	5	2	1	-	-
	2	150	>12	10	6	4	2	-
	3	225	>12	>12	8	6	4	2
	4	300	>12	>12	11	8	6	4
	5	375	>12	>12	>12	10	7	6
	6	450	>12	>12	>12	12	9	7

D. Composite Lintel: 150mm wide concrete on 150x65mm deep lintel

		CLEAR SPAN (m)						
	Concrete Depth (mm)	0.5	1	1.5	2	2.5	3	
	1	75	12	12	9	6	3	2
	2	150	>12	>12	12	9	6	4
	3	225	>12	>12	>12	12	7	5
	4	300	>12	>12	>12	12	9	6
	5	375	>12	>12	>12	>12	12	8

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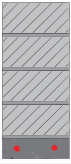


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E. Composite Lintel: 215mm wide solid masonry on 215x65mm deep lintel

		CLEAR SPAN (m)							
No. of Courses	Blockwork Depth (mm)	0.5	1	1.5	2	2.5	3	3.5	
	1	110	12	11	6	3	1	-	-
	2	220	>12	>12	12	8	6	3	1
	3	330	>12	>12	>12	12	10	7	5
	4	440	>12	>12	>12	>12	12	10	8

F. Composite Lintel: 215mm wide concrete on 215x65mm deep lintel

		CLEAR SPAN (m)							
	Concrete Depth (mm)	0.5	1	1.5	2	2.5	3	3.5	
	1	75	12	12	12	8	5	3	2
	2	150	>12	>12	>12	12	9	6	4
	3	225	>12	>12	>12	>12	10	7	5
	4	300	>12	>12	>12	>12	12	9	6
	5	375	>12	>12	>12	>12	>12	12	9

LOAD SPAN TABLES FOR PRESTRESSED LINTELS

LOAD/SPAN TABLES FOR PRESTRESSED LINTELS, 65mm Deep (Loads in Kn/m)
 (Prestressing Strand is 7.9mm Diameter, Pult = 69 Kn, Stressing Load = 48.3kn)
 (Load Factor = 1.5 assumed)

	CLEAR SPAN					
	1m	1.2m	1.4m	1.6m	1.8m	
100mm wide lintel (1 No. strand)	2.65	1.91	1.43	1.1	0.86	
150mm wide lintel (1 No. strand)	3.52	2.53	1.88	1.44	1.13	
215mm wide lintel (2 No. strands)	5.59	4.03	3.01	2.31	1.81	



LOAD/SPAN TABLES FOR PRESTRESSED LINTELS, 90mm Deep (Loads in Kn/m)
 (Prestressing Strand is 9.3mm Diameter, Pult = 93.5 Kn, Stressing Load = 65.45kn)
 (Load Factor = 1.5 assumed)

	CLEAR SPAN						
	1m	1.2m	1.4m	1.6m	1.8m	2m	2.2m
90mm wide lintel (1 No. Strand)	4.52	3.27	2.46	1.91	1.51	1.22	0.99
140mm wide lintel (1 No. Strand)	6.5	4.7	3.53	2.73	2.16	1.73	1.41



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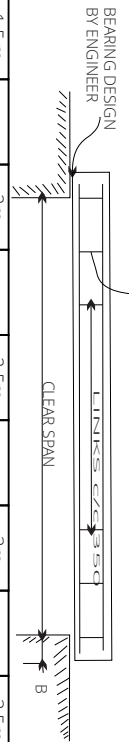


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LOAD SPAN TABLES FOR REINFORCED LINTELS (Cover to Main Reinforcement = 40mm)

These designs are indicative of what is available.
All reinforced lintels are designed in house to suit individual requirements.



BOTTOM REBAR(mm)	8mm) MINIMUM
10	200
12	200
16	250
20	300
25	350

LINTEL TYPE	1.5 m		2m		2.5m		3m		3.5m		4m		4.5m	
	Load(kn/m)	Rebar	Load(kn/m)	Rebar	Load(kn/m)	Rebar	Load(kn/m)	Rebar	Load(kn/m)	Rebar	Load(kn/m)	Rebar	Load(kn/m)	Rebar
215x100	8.9	T10	12.9	T12	7.5	T12	11.8	T16	7.8	T16	10.6	T20	6.8	T20
		T10		T10		T10		T10		T10		T10		T10
		T10		T10		T10		T10		T10		T10		T10
215x150	18.1	T10	25.0	T12	14.6	T12	22.5	T16	14.8	T16	19.5	T20	12.3	T20
		T10		T10		T10		T10		T10		T10		T10
		T10		T10		T10		T10		T10		T10		T10
215x215	18.1	T10	25.8	T12	15.0	T12	24.1	T16	15.8	T16	21.6	T20	13.9	T20
		T10		T10		T10		T10		T10		T10		T10
		T10		T10		T10		T10		T10		T10		T10
215x300	26.6	T10	38.6	T12	22.5	T12	35.5	T16	23.3	T16	31.8	T20	19.1	T20
		T10		T10		T10		T10		T10		T10		T10
		T10		T10		T10		T10		T10		T10		T10
190x90	7.8	T10	10.7	T12	6.2	T12	9.5	T16	6.2	T16	7.4	T20	4.1	T20
		T10		T10		T10		T10		T10		T10		T10
		T10		T10		T10		T10		T10		T10		T10
190x140	15.2	T10	20.4	T12	11.9	T12	18.1	T16	11.9	T16	13.4	T20	7.4	T20
		T10		T10		T10		T10		T10		T10		T10
		T10		T10		T10		T10		T10		T10		T10
190x190	15.0	T10	21.2	T12	12.3	T12	19.5	T16	12.8	T16	14.9	T20	8.3	T20
		T10		T10		T10		T10		T10		T10		T10
		T10		T10		T10		T10		T10		T10		T10

