Specification for Pre-stressed Concrete Lintels

(see page 3 for Beams)

Special Notes

These tables are specific to lintels by Killeshal Precast Concrete Limited.

Killeshal Precast Concrete can issue a D.O.P. on 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
EN 1992-1-1:2004	Design of Concrete Structures
EN 206:2013 Concrete	Specification, performance, production and conformity
IS EN 845-2 2013 +A1 2016	Specification for Ancillary Components for Masonry - Part 2- Lintels
EN 1996-1-1:2005	General rules for reinforced and unreinforced masonry structures

Pre-Stressed Units

Concrete grade at 28 days = C35/45
Concrete grade at transfer = C25/30
Minimum characteristic strength of 7.9 mm diameter strand = 69 kN
Minimum characteristic strength of 9.3 mm diameter strand- 93.5 kN,

Reinforced Units

- Concrete grade at 28 days = C35/45
- Characteristic Yield Strength of reinforcement (B500B Grade) = 500N/mm2
- Characteristic Yield Strength of reinforcement (Mild Steel Grade) = 250N/mm2
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Composite Units

- Characteristic strength of masonry = 7.322N/mm^2
- Unit weight of masonry = 24kN/m^3
- Characteristic strength of mortar = M4 Grade (4N/mm^2)
- 5mm Bed Joints Minimum
- Mortar should be 1:4 Cement:Sand
- Bedding of blocks onto precast lintels should be done with mortar that is uninterrupted with DPC
- Bearing should be a minimum of 150mm for spans up to 1.5m and 200mm for spans over 1.5m
- Lintels should be bedded on mortar at supports
- All lintels greater than 1.2m in span should be propped
- Lintels should be propped at 1.2m centres and props should remain in position until construction has matured

Loading

- Loading should not exceed the relevant values given in the load span tables presented in the following pages.
- All loads on the 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.

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Information regarding Declaration of Performance

Notified Body, SKG-IKOB (ID No. 0960) performed initial type testing under AVCP System 3 and issued test/calculation report No. 18-PR075-KI on the Pre-stressed Composite Lintels

A. Composite Lintel: 100mm wide solid masonry on 100x65mm deep lintel (Safety Factor = 2.25 assumed)

		CLEAR SPAN (m)						
No. Courses	Blockwork Depth(mm)	0.5	1.0	1.5	2.0	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: 150mm wide solid masonry on 150x65mm deep lintel (Safety Factor = 2.25 assumed)

		CLEAR SPAN (m)						
No. Courses	Blockwork Depth(mm)	0.5	1.0	1.5	2.0	2.5	3.0	
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	

C. Composite Lintel: 215mm wide solid masonry on 215x65mm deep lintel (Safety Factor = 2.25 assumed)

		CLEAR SPAN (m)						
No. Courses	Blockwork Depth(mm)	0.5	1.0	1.5	2.0	2.5	3.0	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

Pre-stressed Concrete Lintels Standard Sizes

4 inch, 6 inch or 9 inch (100, 150 or 215mm)

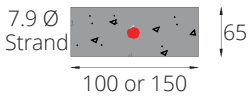
Imperial	Metric
2' 0"	609mm
2' 6"	762mm
3' 0"	914mm
3' 6"	1066mm
4' 0"	1219mm
4' 6"	1371mm
5' 0"	1524mm
5' 6"	1676mm
6' 0"	1828mm
6' 6"	1981mm
7' 0"	2133mm
7' 6"	2286mm
8' 0"	2438mm
8' 6"	2590mm
9' 0"	2743mm
9' 6"	2895mm
10' 0"	3048mm
10' 6"	3200mm
11' 0"	3352mm
11' 6"	3505mm
12' 0"	3657mm
12' 6"	3809mm
13' 0"	3962mm

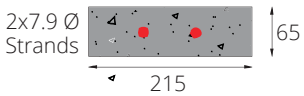
LOAD SPAN TABLES FOR PRESTRESSED LINTELS

Information regarding Declaration of Performance

Notified Body, SKG-IKOB (ID No. 0960) performed initial type testing under AVCP System 3 and issued test/calculation report No. 18-PR099-KI for Killeshal Pre-stressed Concrete Lintels

LOAD/SPAN TABLES FOR PRESTRESSED LINTELS,
65mm Deep (Loads in Kn/m) (Safety Factor = 2.25 assumed)





	CLEAR SPAN (m)						
Lintel	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		

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Specification for Reinforced Concrete Beams from Killeshal Precast

Special Notes

These tables are specific to RC Beams manufactured by Killeshal Precast Concrete.

Killeshal Precast Concrete can issue a D.O.P. on their RC Beams when used as specified in these tables.

Applicable Standards

Killeshal Precast Concrete RC Beams are manufactured to comply with the standard below.

I.S. EN 13225:2013	Precast concrete products - Linear structural elements

RC Beam Units

- Minimum characteristic strength of concrete at 28 days- C35/45 N/Sq mm.
- Minimum characteristic strength of reinforcement 500 N/Sq mm (High Tensile)

Loading / Opes

- Loading and opes should not exceed the values given in the tables below.
- All loads in tables are given Kn/m.

Reinforced Concrete Beams 100mm x 215mm

No.	Beam Ref	Beam Width	Beam Depth	Maximum Clear Ope	Min Bearing Each Side	Beam Length	Unfactored Dead Load KN/M
1	Type B100-1	100	215	531	234.5	1000	59.8
2	Type B100-2	100	215	734	258	1250	51.0
3	Type B100-3	100	215	984	258	1500	31.5
4	Type B100-4	100	215	1234	258	1750	21.3
5	Type B100-5	100	215	1390	305	2000	28.5
6	Type B100-6	100	215	1640	305	2250	21.2
7	Type B100-7	100	215	1890	305	2500	16.3
8	Type B100-8	100	215	2046	352	2750	17.9
9	Type B100-9	100	215	2296	352	3000	13.8
10	Type B100-10	100	215	2546	352	3250	11.0
11	Type B100-11	100	215	2796	352	3500	8.7

Reinforced Concrete Beams 215mm x 215mm

No.	Beam Ref	Beam Width	Beam Depth	Maximum Clear Ope	Min Bearing Each Side	Beam Length	Unfactored Dead Load KN/M
1	Type B215-1	215	215	531	234.5	1000	120.1
2	Type B215-2	215	215	734	258	1250	102.6
3	Type B215-3	215	215	984	258	1500	63.4
4	Type B215-4	215	215	1234	258	1750	42.8
5	Type B215-5	215	215	1390	305	2000	57.6
6	Type B215-6	215	215	1640	305	2250	42.7
7	Type B215-7	215	215	1890	305	2500	32.9
8	Type B215-8	215	215	2046	352	2750	37.5
9	Type B215-9	215	215	2296	352	3000	29.0
10	Type B215-10	215	215	2546	352	3250	22.7
11	Type B215-11	215	215	2796	352	3500	17.8

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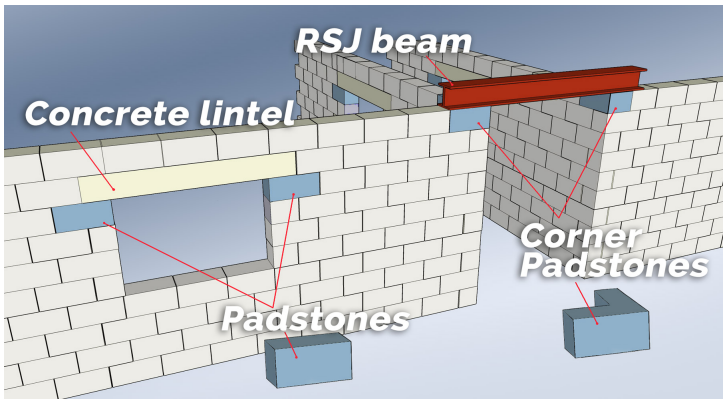
Concrete PadStones

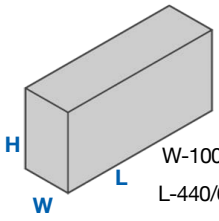
Killeshal manufactures a range of Precast Concrete Padstones to match our extensive range of Lintels. These padstones are stronger than a conventional masonry block, made in 40N/Sq mm concrete mix.

Features and Advantages over In-Situ Casting:

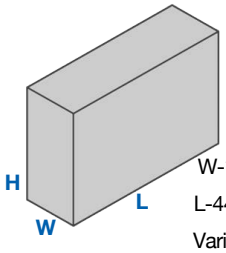
- Simple to use – bed in place just like blocks
- Readily available – standard sizes ex-stock
- Reduced labour costs with no on-site casting
- Tough 40N/Sq mm concrete material
- Reduces risk of lintel load transfers crushing blockwork underneath
- Non-standard sizes / custom requirements can be catered for



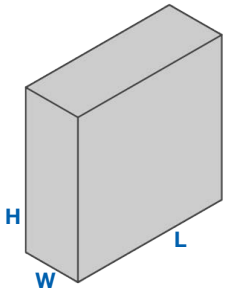
If you have specific off-standard requirements please contact our Technical Sales Team



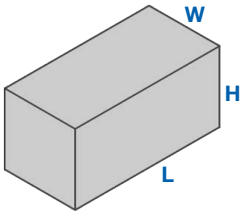
W-100mm x H-215mm
L-440/665/890 ex-stock
Various sizes on request



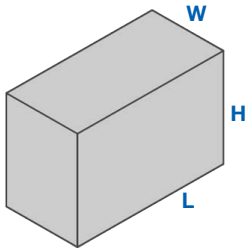
W-100mm x H-300mm
L-440/665/890 ex-stock
Various sizes on request



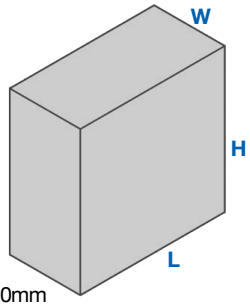
W-100mm x H-440mm
L-440/665/890 ex-stock
Various sizes on request



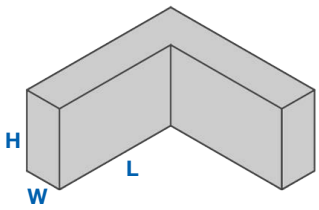
W-215mm x H-215mm
L-440/665/890 ex-stock
Various sizes on request



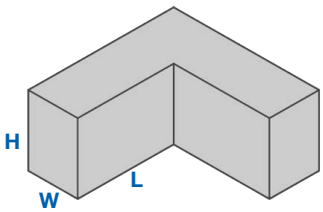
W-215mm x H-300mm
L-440/665/890 ex-stock
Various sizes on request



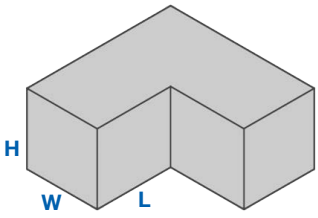
W-215mm x H-440mm
L-440/665/890 ex-stock
Various sizes on request



W-100mm x H-215mm
L-440/665mm ex-stock
Various sizes on request



W-150mm x H-215mm
L-440/665mm ex-stock
Various sizes on request



W-215mm x H-215mm
L-440/665mm ex-stock
Various sizes on request

Our Technical Sales Team are ready to help with advice on specifying the correct PadStone for your application.

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