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.

65mm(h) 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
IS EN 1992-1-1 NATIONAL ANNEX: 2010 COR 2016	Irish National Annex to Eurocode 2: Design of Concrete Structures - Part 1-1: General Rules and Rules for Buildings
IS 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 = C32/40
- 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 = C32/40
- Characteristic Yield Strength of reinforcement (B500B Grade) = 500N/mm^2
- Characteristic Yield Strength of reinforcement (Mild Steel Grade) = 250N/mm^2

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 in 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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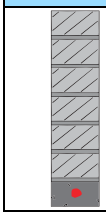
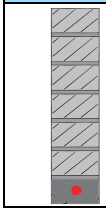
Controlled document approved by: William Farrell

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)

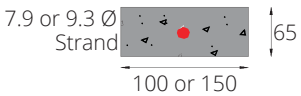
		CLEAR SPAN (m)						
No. Courses	Blockwork Depth(mm)	0.5	1.0	1.5	2.0	2.5	3.0	3.5
	1 110	12	11	6	3	1	-	-
	2 220	>12	>12	12	8	6	3	1
	3 330	>12	>12	>12	12	10	7	5
	4 440	>12	>12	>12	>12	12	10	8

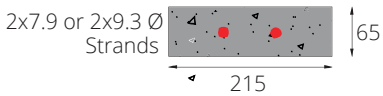
Pre-stressed Concrete Lintels Standard Sizes	
4 inch, 6 inch or 9 inch (100, 150 or 215mm)	
Imperial	Metric
2' 0"	609mm
2' 6"	762mm
3' 0"	914mm
3' 6"	1066mm
4' 0"	1219mm
4' 6"	1371mm
5' 0"	1524mm
5' 6"	1676mm
6' 0"	1828mm
6' 6"	1981mm
7' 0"	2133mm
7' 6"	2286mm
8' 0"	2438mm
8' 6"	2590mm
9' 0"	2743mm
9' 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 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 this standard.

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

RC Beam Units

- Minimum characteristic strength of concrete at 28 days- C32/40 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.
- If using a mix of dead & live loads, a calculation must be done to bring the load back to an equivalent Dead UDL

Reinforced Concrete Beams 100mm x 215mm

50mm intervals **(in bold)** may have limited stock

Beam Width	Beam Depth	Maximum Clear Ope	Min Bearing Each Side	Beam Length	Unfactored Dead Load KN/M	Beam Ref
100	215	531	234.5	1000	59.8	Type B100-10
100	215	584	258	1100	72.7	Type B100-11
100	215	684	258	1200	57.1	Type B100-12
100	**215**	**734**	**258**	**1250**	**51.0**	**Type B100-1250**
100	215	784	258	1300	45.9	Type B100-13
100	215	884	258	1400	37.8	Type B100-14
100	215	984	258	1500	31.5	Type B100-15
100	215	1084	258	1600	26.8	Type B100-16
100	215	1184	258	1700	23.0	Type B100-17
100	**215**	**1234**	**258**	**1750**	**21.3**	**Type B100-1750**
100	215	1190	305	1800	37.5	Type B100-18
100	215	1290	305	1900	32.6	Type B100-19
100	215	1390	305	2000	28.5	Type B100-20
100	215	1490	305	2100	25.2	Type B100-21
100	215	1590	305	2200	22.4	Type B100-22
100	**215**	**1640**	**305**	**2250**	**21.2**	**Type B100-2250**
100	215	1690	305	2300	20.0	Type B100-23
100	215	1790	305	2400	18.0	Type B100-24
100	215	1890	305	2500	16.3	Type B100-25
100	215	1896	352	2600	21.1	Type B100-26
100	215	1996	352	2700	18.9	Type B100-27
100	**215**	**2046**	**352**	**2750**	**17.9**	**Type B100-2750**
100	215	2096	352	2800	17.0	Type B100-28
100	215	2196	352	2900	15.3	Type B100-29
100	215	2296	352	3000	13.8	Type B100-30
100	215	2396	352	3100	12.6	Type B100-31
100	215	2496	352	3200	11.5	Type B100-32
100	**215**	**2546**	**352**	**3250**	**11.0**	**Type B100-3250**
100	215	2596	352	3300	10.5	Type B100-33
100	215	2696	352	3400	9.6	Type B100-34
100	215	2796	352	3500	8.7	Type B100-35

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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 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 this standard.

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

RC Beam Units

- Minimum characteristic strength of concrete at 28 days- C32/40 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.
- If using a mix of dead & live loads, a calculation must be done to bring the load back to an equivalent Dead UDL

Reinforced Concrete Beams 215mm x 215mm

50mm intervals **(in bold)** may have limited stock

Beam Width	Beam Depth	Maximum Clear Ope	Min Bearing Each Side	Beam Length	Unfactored Dead Load KN/M	Beam Ref
215	215	531	234.5	1000	120.1	Type B215-10
215	215	584	258	1100	146.2	Type B215-11
215	215	684	258	1200	114.7	Type B215-12
215	**215**	**734**	**258**	**1250**	**102.6**	**Type B215-1250**
215	215	784	258	1300	92.4	Type B215-13
215	215	884	258	1400	75.9	Type B215-14
215	215	984	258	1500	63.4	Type B215-15
215	215	1084	258	1600	53.8	Type B215-16
215	215	1184	258	1700	46.1	Type B215-17
215	**215**	**1234**	**258**	**1750**	**42.8**	**Type B215-1750**
215	215	1190	305	1800	75.8	Type B215-18
215	215	1290	305	1900	65.8	Type B215-19
215	215	1390	305	2000	57.6	Type B215-20
215	215	1490	305	2100	50.9	Type B215-21
215	215	1590	305	2200	45.3	Type B215-22
215	**215**	**1640**	**305**	**2250**	**42.7**	**Type B215-2250**
215	215	1690	305	2300	40.5	Type B215-23
215	215	1790	305	2400	36.4	Type B215-24
215	215	1890	305	2500	32.9	Type B215-25
215	215	1896	352	2600	43.9	Type B215-26
215	215	1996	352	2700	39.6	Type B215-27
215	**215**	**2046**	**352**	**2750**	**37.5**	**Type B215-2750**
215	215	2096	352	2800	35.5	Type B215-28
215	215	2196	352	2900	32.0	Type B215-29
215	215	2296	352	3000	29.0	Type B215-30
215	215	2396	352	3100	26.3	Type B215-31
215	215	2496	352	3200	23.9	Type B215-32
215	**215**	**2546**	**352**	**3250**	**22.7**	**Type B215-3250**
215	215	2596	352	3300	21.6	Type B215-33
215	215	2696	352	3400	19.6	Type B215-34
215	215	2796	352	3500	17.8	Type B215-35

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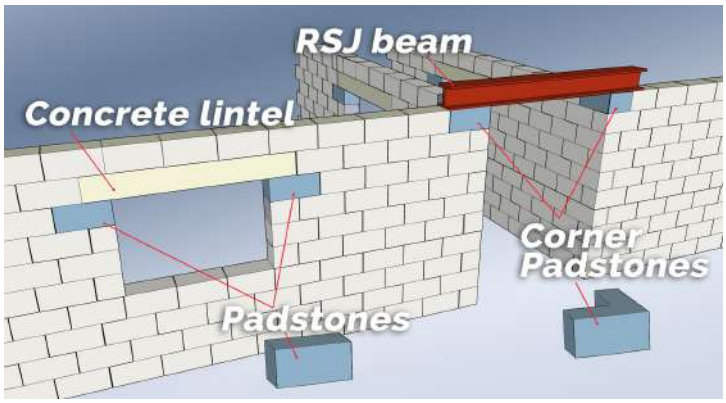
Concrete PadStones

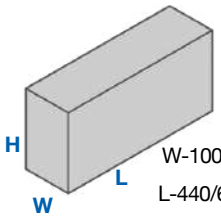
Killeshal manufactures a range of Precast Concrete Padstones to match our extensive range of Lintels. These padstones are stronger than a conventional masonry block, made in 40N/Sq mm concrete mix.

Features and Advantages over In-Situ Casting:

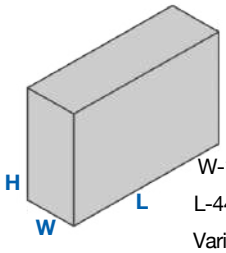
- Simple to use – bed in place just like blocks
- Readily available – standard sizes ex-stock
- Reduced labour costs with no on-site casting
- Tough 40N/Sq mm concrete material
- Reduces risk of lintel load transfers crushing blockwork underneath
- Non-standard sizes / custom requirements can be catered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



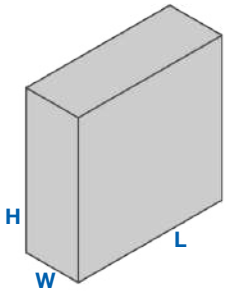
If you have specific off-standard requirements please contact our Technical Sales Team



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



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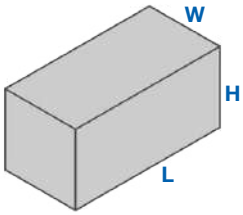
L-440/665/890 ex-stock
Various sizes on request



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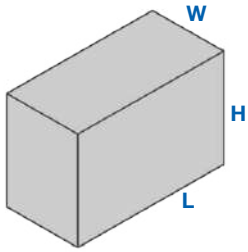
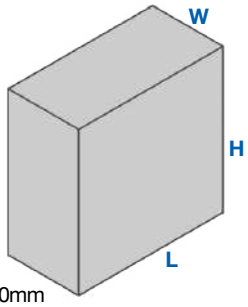
L-440/665/890 ex-stock
Various sizes on request



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



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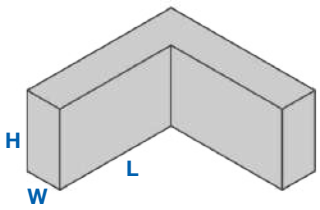
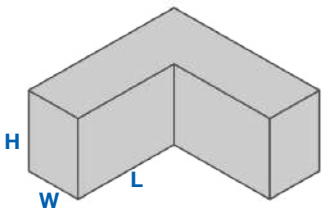
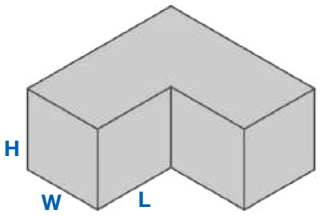
Various sizes on request



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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