info@tfsd.co.za
043 745 5000
www.tfsd.co.za
105 Western Avenue | Vincent | East London

LONGSPAN LINTELS

(VERSION 1 25|05|2021)

HITEC prestressed concrete beams laminated together on site simple fast track construction

KWIKLIN | SLIMLIN | WINLIN

TFSD
CONCRETE PRODUCTS

TABLE OF CONTENTS

DATA FOR SEVEN OF OUR LONG SPAN LINTELS PRODUCED IN 50 MPA PRECAST PRESTRESSED CONCRETE

DIMENSIONS:	LAMINATED LINTELS				SHUTTER BEAM LINTELS					
Beams	**Winlin 170**	**Winlin 200**	**Winlin 250**	**Slimlin**	**Kwiklin Standard**		**Kwiklin M6**		**Kwiklin M9**	
Number of Beams Per Set	3	3	3	3	2		2		2	
Height in mm	170mm (2 Brick Courses)	200mm (1 Block Course)	250mm (3 Brick Courses)	250mm (3 Brick Courses)	250mm (3 Brick Courses)		195mm (1 Block Course)		195mm (1 Block Course)	
Width mm	210	210	210	210	220		140		190	
Maximum Span Unsupported	4 meters	5 meters	6 meters	4,8 meters	Up to 7,5 meters, with lattice reinforcement installed		Up to 5 meters, with lattice reinforcement installed		Up to 5 meters, with lattice reinforcement installed	
					With Concrete Infill	**Concrete Infill with Reinforced**	**With Concrete Infill**	**Concrete Infill with Reinforced**	**With Concrete Infill**	**Concrete Infill with Reinforced**
ENGINEERING DATA:	**Class 3 Structures**									
Sagging Moment kNm	17,5	22	29	34	43	50	17	20	17	20
Hogging Canterleaver kNm	14,5	18	26	18	28	36	4	22	4	22
Shear Force kN (Uncracked)	61	74	97	97	90	112	22	120	22	120
Shear Force kN (Cracked at 1/3 Span)	11,44 + 2,25vm	17,37 + 2,97vm	19 + 4vm	21 + 6vm	15 + 12 vm	80 + 12 vm	12,4 + 4,35 vm	14 + 5 vm	12,4 + 4,35 vm	14 + 5 vm
Mass Per Meter of Beam	26	31	36	39	45		27		28	
Mass Per Beam Set Per Meter	78	93	108	117	90		54		56	
Concrete Infill Liters	-	-	-	-						
Standard Cast Length	5,7 up to 8,7 meters	5,0 and 7,4 meters	6,3 or 6,9 or 8,1 meters	5,4 meters	5,54 or 6,45 or 7,45 or 8,55		6,000 or 8,600 meters		6,000 or 8,600 meters	
Used When Building With	Brickwork	Blockwork	Brickwork	Brickwork	Brickwork		6 inch Blockwork		8/9 inch Blockwork	
For:	Sliding Door and Large Window Openings	Sliding Door and Large Window Openings	Sliding Door and Large Window Openings	Garage Door Openings	Over large sliding & Stack door openings and to act as bearers over openings to carry walls canterleaver beams and floor slabs and roof joist support		Sliding Doors, Double Garage Door Openings, Ring Beams and for slab support			

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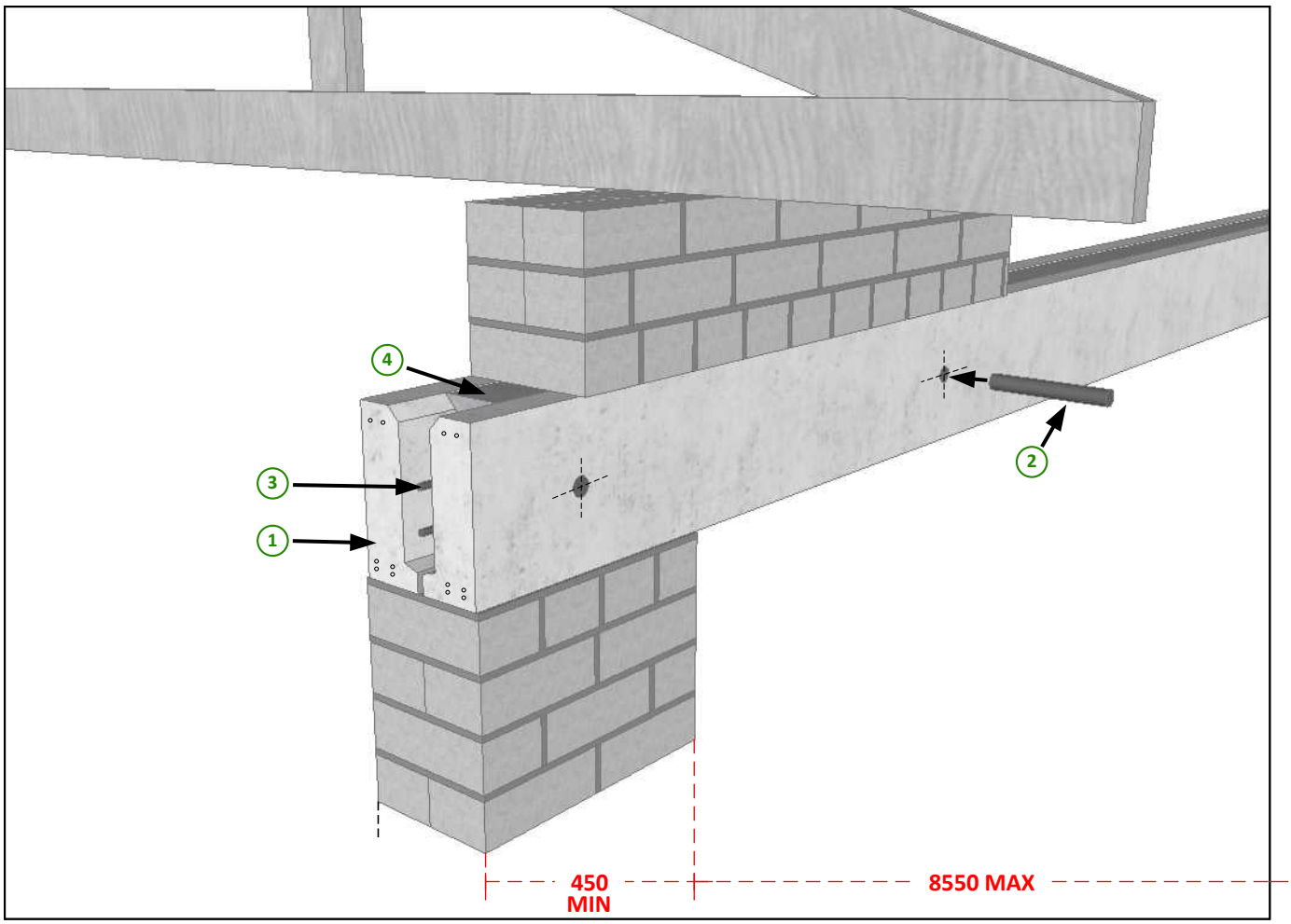
KWIKLIN

Laminated Bearer Beam Assembly

For Fast Track Installation of 250mm High x 220mm Wide (variable) Load Bearing Prestressed Concrete Beams



DESCRIPTION

1. This system comprises two L-shaped Kwiklin beams erected side by side to form a U-beam.
2. Galvanised steel bushes laminate beams together.
3. Prescribed reinforcing steel, if required.
4. 40 Mpa. concrete infill

- Beam mass 51kg / meter per beam.
- Standard stock length cast 5400 / 6450 / 7500 / 8550mm (cut to order length).
- Engineering load capacity tables and construction notes available.
- N.B. KWIKLIN application and supporting columns to be specified and constructed under supervision of a professional engineer

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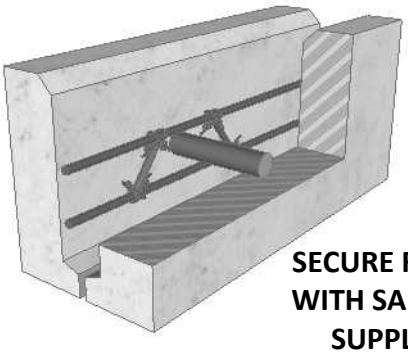
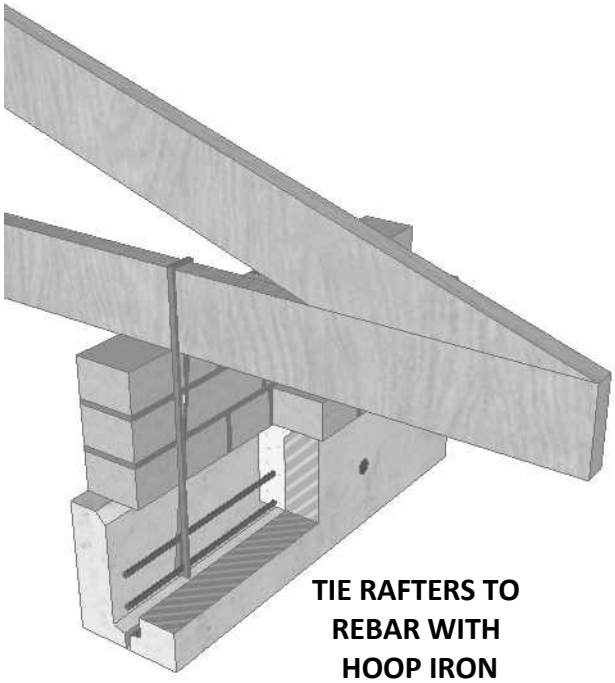
KWIKLIN

Installation & Construction Notes

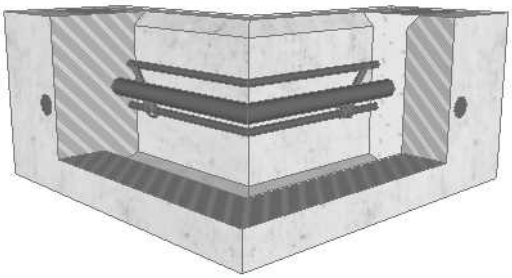
1. Longspan lintels supply Kwiklin Beams in matched pairs in standard lengths of 5400mm, 6450mm, 7500mm or 8550mm cut to length as required.
2. The supporting columns must be constructed (use minimum quality 7Mpa bricks and blocks) as directed by the engineer. **Structure must be well cured, sound and level** before placing beams. (Non shrink grout can be used to level up and bond top brickwork if necessary).
3. Set up secure scaffold and heavy duty boards to accommodate required lifting crew for placing manually. Longer beams may require a crane or lifting tackle which can be provided.
4. Beams must be lifted with two slings on a spreader bar when using a crane or tackle.
5. **>> Set up and line up the two Kwiklin beams.**
   >> Tap in required number of laminating galvanised steel bushes.
   >> Using locating saddles clipped onto the bushes, set reinforcing in place as required by engineer.
   >> Caulk the gap between the beams or tie up a shutter board when creating a wider beam (260/280mm wall applications).
   >> Set-up single prop in centre of beam assembly.
   >> Cast 40 MPA concrete into beam (16 litres required per running meter).
6. Steel imbedded in supporting column brickwork should be secured through the joint in the Kwiklins and tied in by the concrete infill in the bearer beam to create a connected structure.
7. Where practical, it is advisable to place the first course of brickwork immediately above the Kwiklin assembly header course.
8. Subsequent course to be laid with galvanised brickforce in mortar joints.
9. Alternatively, the strength of the beam can be further increased by integrating reinforcing up through the upper brickwork constructed as a cavity wall so as to admit further reinforced concrete infill between the leaves.
10. Hoop iron can also be wrapped around reinforcing bar and passed up through the brickwork to secure the roof rafters, before casting concrete beam infill.



SECURE REBAR WITH SADDLES SUPPLIED



TIE RAFTERS TO REBAR WITH HOOP IRON



TO FORM RING BEAM, MITRE CORNERS AT 45^{O} TIE REBAR AROUND CORNERS

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KWIKLIN

Laminated Bearer Beam Assembly Engineering Data

STANDARD DESIGN STRENGTH (Class 3 structure)	2 KWIKLIN BEAMS laminated with bushes and 20 Mpa infill	2 KWIKLIN BEAMS with bushes and rebar and 40 Mpa infill
ULTIMATE LIMIT STATE CAPACITY		
Sagging moment kNm.	43	50
Hogging cantilever moment kNm.	17	36
Sheer force kN. (uncracked at support)	45	56
Sheer force kN. (cracked at 1/3 span)	18	29

Reinforced brickwork built up above, will enhance the sheer capacity when hardened

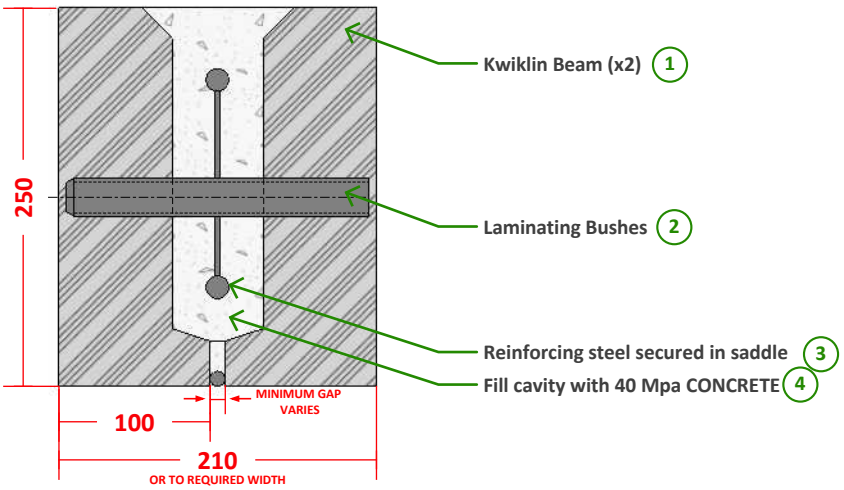
NOTES:

- The table satisfies SABS 0100 - latest revision.
- Calculations for table prepared by Mr Colin Dunn - Endecon P.e. Trust (Reg. No: 730442)
- Kwiklins can be further reinforced by integrating reinforcing to the upper brickwork constructed so as to admit concrete infill between leaves.
- Kwiklins spanning 6m clear with concrete infill and steel reinforcing, will carry 10 courses of brickwork without sagging. It is advisable to fit a temporary prop under the center of the Kwiklin assembly during construction when time does not permit for infill concrete or brickwork to set.
- Kwiklins must be applied under supervision and specification of a professional engineer.
- Kwiklin sets are produced in standard lengths of 5400, 6450, 7500 and 8550mm and can be cut to special order lengths.
- Mass 51kg per meter per single beam.

Other Lintels in the Longspan Range:

>> Slimlin for double garage door openings of 4800mm.
>> Winlin 250 for 6 meter openings.
>> Winlin 200 for up to 5 meter openings (aligns with 200mm block courses).
>> Winlin 170 for applications up to 4 meter openings.

CROSS SECTION OF KWIKLIN ASSEMBLY



SIDE ELEVATION
SCALE 1:5

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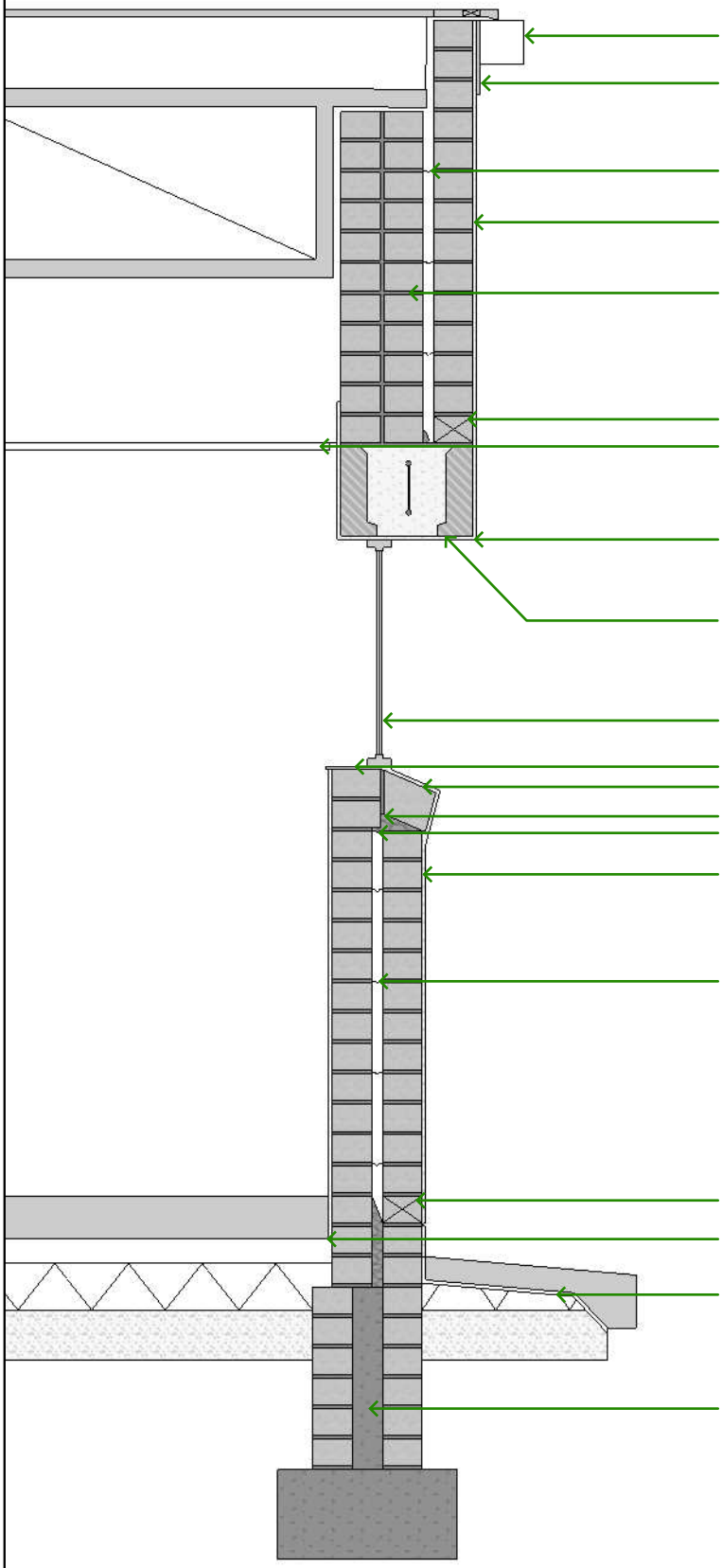
KWIKLIN EXTENDED WIDTH APPLICATION



SECTIONAL ELEVATION
SCALE 1:20

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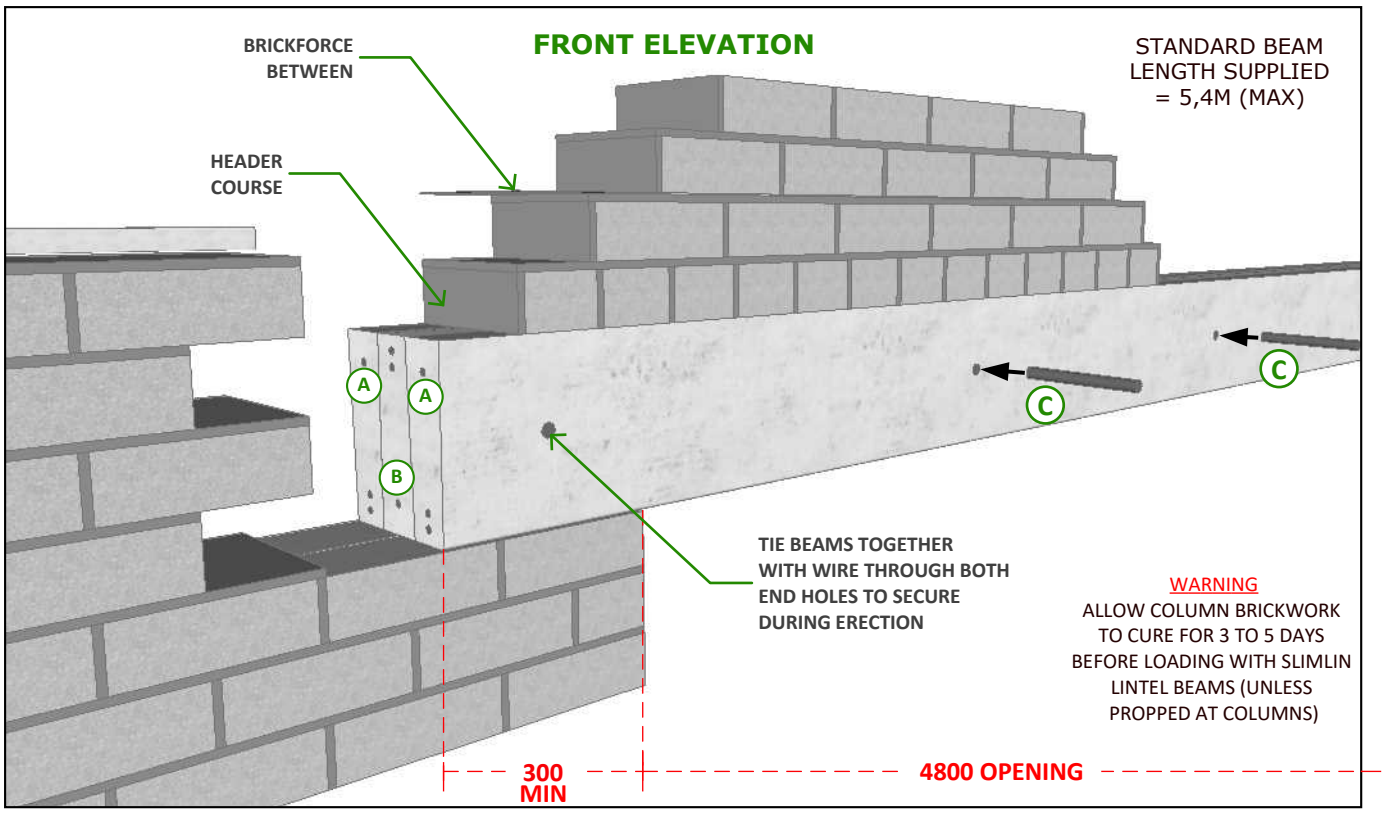
SLIMLIN

Laminated Garage Doorway Lintel Assembly

4.8 Metre Wide Double Garage Door Openings With Gable or Parapet Walls Over



DESCRIPTION

- This System is comprised of three prestressed beams, two Slimlin beams (A) (taper up) to the outside of the assembly and one Slimlin beam (B) (taper down) nested in the center.
- Beams are marked accordingly on ends with arrows pointing upwards to indicate stacking direction.
- The Slimlin laminated lintel system is pre-engineered and approved for installation across door openings of 4.8m and to carry gable and parapet walls only.
- **For double storey and roof-truss loading applications please consult and engineer.**

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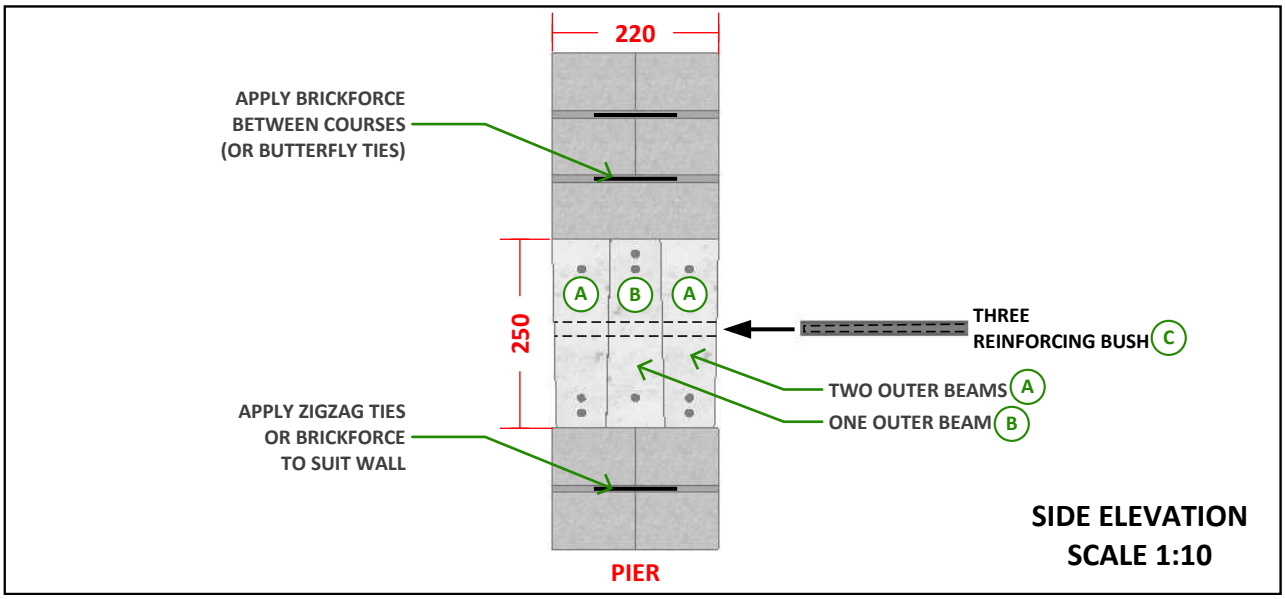
CONCRETE PRODUCTS

SLIMLIN

Installation & Construction Notes

1. Longspan lintels supply Slimlins in sets of 3 beams (2 x A and 1 x B) in standard lengths of 5400mm to suit door apertures of 4800mm. (Beams can be supplied cut to shorter lengths.)
2. The supporting columns or wing walls must be constructed with minimum 7 MPA bricks and blocks and **must be well cured (3-5 days).** (Start construction of this side of garage first so as not to be held up.)
3. Set up secure scaffold and heavy duty boards to accommodate required lifting crew for placing manually. Longer beams may require a crane or lifting tackle which can be provided.
4. Beams must be lifted with two slings on a spreader bar when using crane or tackle.
5. **>> Set up and line up two Slimlin (A) Beams taper up to the outsides and one (B) Beam taper down in center, as per cross section.**
   >> Tie Together with binding wire either end to secure on wing walls.
   >> Tap in three laminating glavanised steel bushes to three center holes.
6. Place first course of brickwork over Slimlins as a header course.
7. Place brickforce in mortar joint above and in every 4th mortar joint thereafter.



Engineering Data

STANDARD DESIGN STRENGTH (Class 3 Structure)

3 Slimlin Beams 5400mm long (4800mm opening laminated with 3 bushes

ULTIMATE LIMIT STATE CAPACITY	
Sagging moment kNm	34
Hogging cantilever moment kNm	18
Sheer force kN (uncracked at support)	97
Sheer force kN (cracked at 1/3 span)	21 + 6 V/M

NOTES:

- Reinforced brickwork built up above will enhance the sheer capacity when hardened.
- The table satisfies SABS 0100 - latest revision.
- Calculations for table prepared by Mr Colin Dunn - Endecon P.e. Trust (Reg. No: 730442)
- Other lintels in the Longspan range:
  - Kwiklin heavy duty bearer beam
  - Winlin 250 for 6m openings
  - Winlin 200 for up to 5 meter openings. (Aligns with 200mm block courses).
  -170 for applications up to 4 meter openings.

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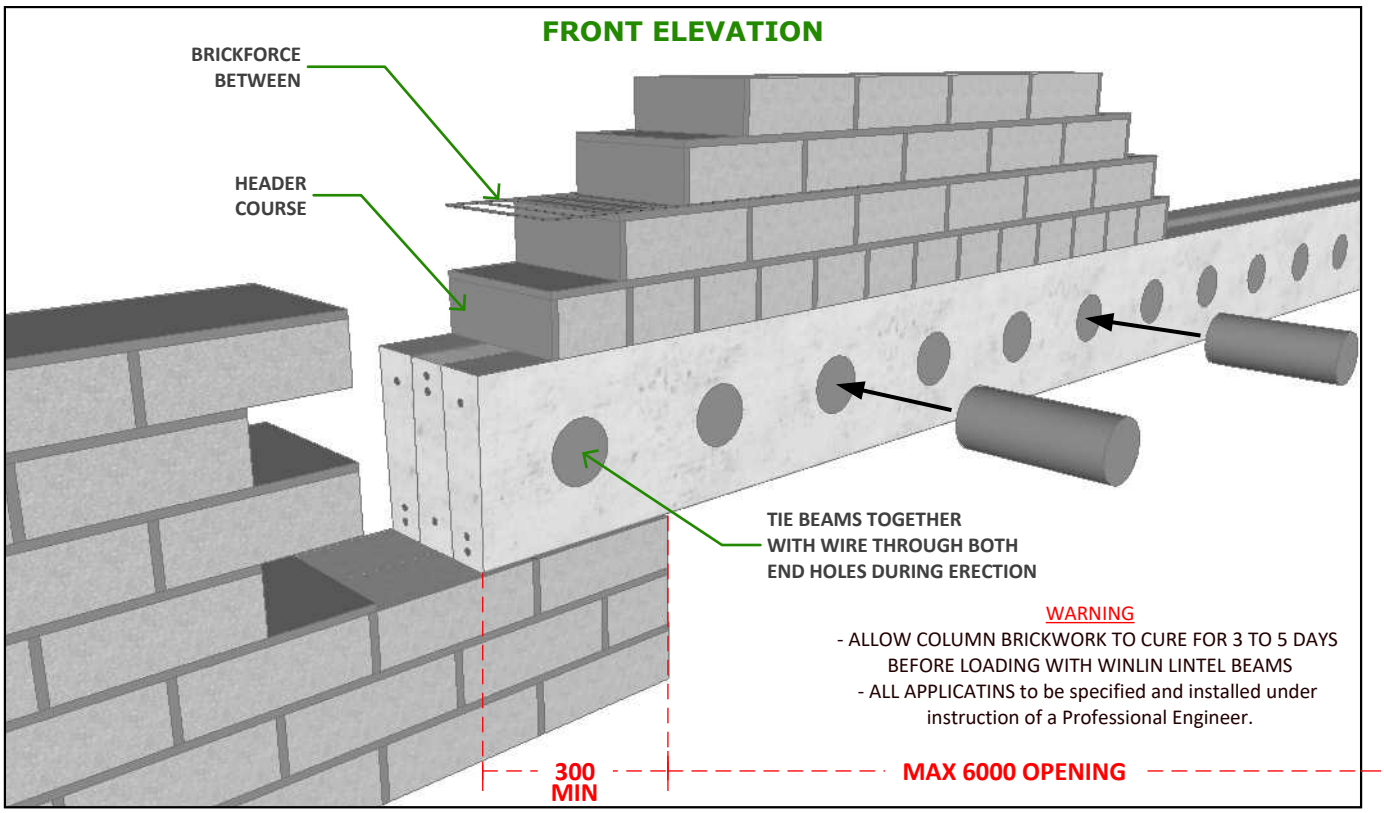
WINLIN

250 Laminated Lintel Assembly

For spanning Window & Door openings up to 6 meters wide supporting reinforced brickwork only - No surcharge load permitted



DESCRIPTION

- This System is comprised of three prestressed Winlin 250 beams, two (taper down) to the outsides of the assembly and one beam (taper up) nested in the center.
- Laminated together with 90mm steel bushes.
- The Winlin laminated lintel system is pre-engineered and approved for installation across openings of up to 6 meters.
- To carry reinforced gable and parapet walls only.
- Not suitable for double storey and roof-truss loading applications.
- For heavy duty applications consider our Kwiklin Bearer Beam.
- For standard double garage door openings our Slimlin Lintel is the cost saving solution.

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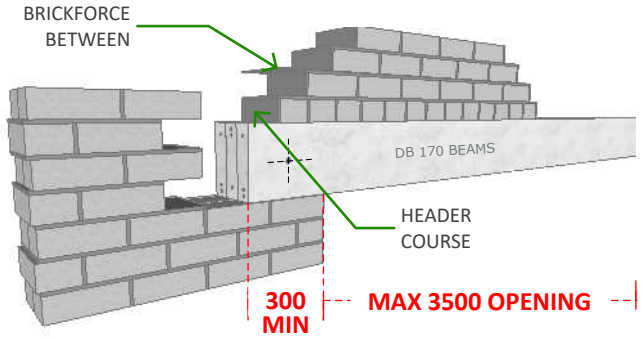
WINLIN

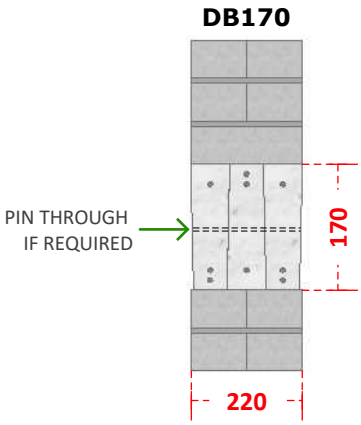
200 & 170 Lintel Assemblies

For spanning large Window & Door apertures for metric Blockwork (200) and Brickwork (170) Maximum span 4 meters and 3,5 meters respectively

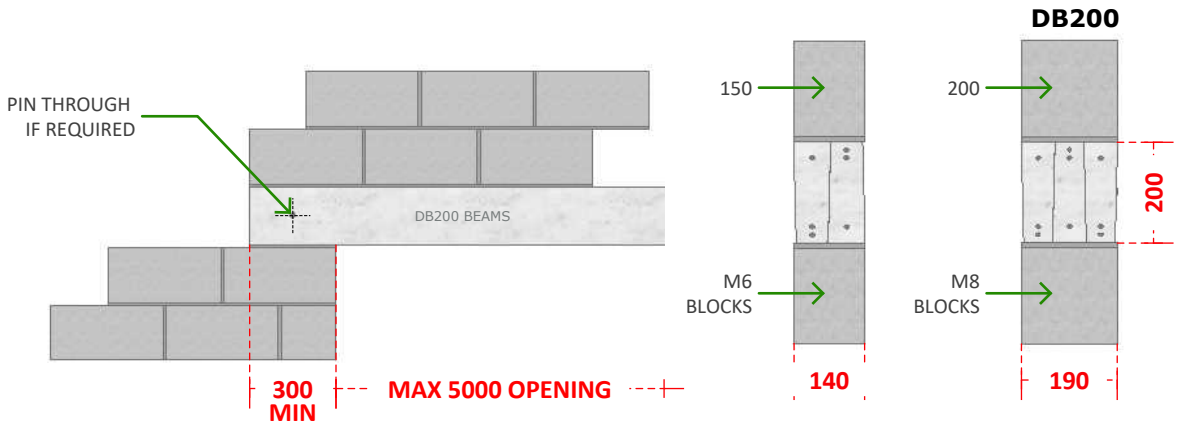
FRONT ELEVATION



CROSS SECTIONS



DB170 LINTEL SYSTEM



DB200 LINTEL SYSTEM

To be specified and installed under instruction of a professional engineer when roof, double storey or surcharge loads are anticipated

INSTALLATION

1. Set up trestles or scaffold.
2. Lift and set one beam at a time as shown.
3. Two outer beams taper down, centre beam taper up.
4. Bind beams together during construction to secure.
5. Beams can be drilled and pinned together if required.
6. Build up brickwork or blockwork above with brickforce in each joint.

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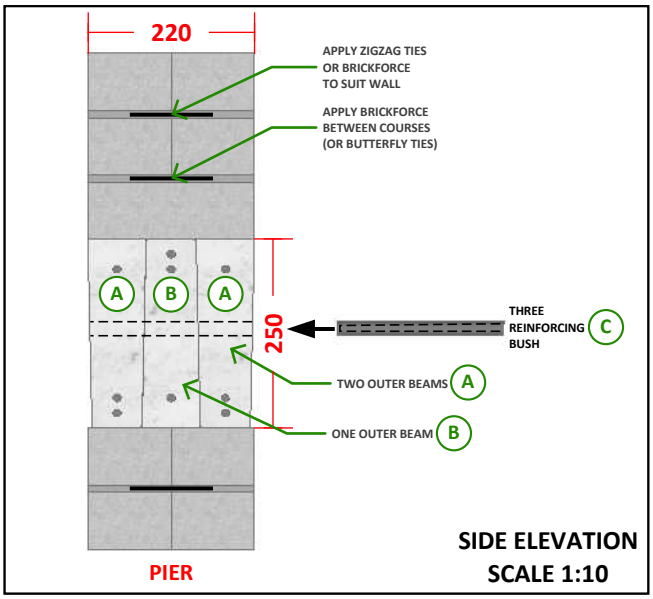
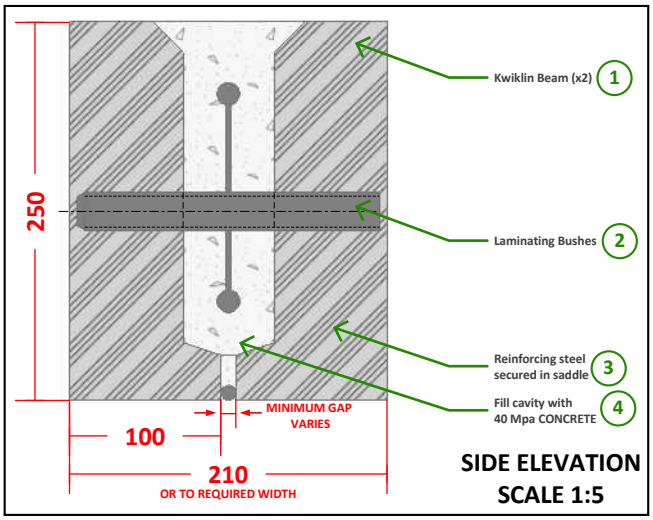
LONGSPAN LINTELS

Produced in 50 MPa Precast Prestressed concrete





Our new innovative fast-track lintel systems to span wide wall apertures. Developed with and by professional engineers, supplied in five formats:

(1) **The Slimlin Laminated Lintel Assembly**

Specifically designed to span 4800mm. Wide garage door apertures:

- Comprises three tapered beams supplied up to 5400mm long and 250mm deep, secured together with three galvanised steel bushes.
- Pre-engineered and an assembled width of 200mm wide to carry gable and parapet walls.
- One hour simple erection time onto well set brickwork, ready to accept immediate further construction.
- No props, no shutterwork, no reinforcing steel and no on site concrete required.

(2) **The Kwiklin Laminated Bearer Beam Assembly**

Designed to create a bearer beam for heavy duty applications, e.g. carrying decks. (Unsupported spans up to 6,9 meters), wide stacker door apertures, cantilever beams, ring beams etc.

- Comprises two L shaped beams supplied up to 8500mm long and 250mm deep. Assembled width 210mm wide minimum Laminated together with steel bushes.
- Simply erected to create a U shaped beam which can if necessary, be infilled with reinforcing lattice steel and concrete to provide extra load bearing capacity, wider applications easily shuttered and cast.
- No props, no shutterwork, put into immediate use after erection.
- Site specific applications to be specified by an engineer using the engineers design charts.

(3) **Kwiklin** now also available for M6 & M9 Blockwork

(4) **The three Winlin Hitec Lintel Beams**

Where a non-sagging extra load carry capacity lintel is required, for example, over sliding doors and large window apertures.
A three beam laminate system (as for the Slimlin) supplied in 3 beam heights.
All create an assembled width of about 190mm wide.

- Winlin 170 span up to 3,5 meters opening. (170mm deep - i.e 2 brick courses) supplied up to 5800mm long.
- Winlin 200 span up to 4,5 meters opening. (200mm deep - ie 1 course metric blocks) supplied up to 7400mm long.
- Winlin 250 span up to 6 meters opening. (250mm deep - ie 3 brick courses) supplied up to 8100mm long.