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Design Limitations and Tables for Lintels

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Design Limitations

1. These tables apply to residential buildings ONLY that conform to the requirements of the appropriate building codes or design guides that are already recognized within the official American and Canadian product evaluation reports produced for NUDURA Corporation. It is assumed that construction will comply with the appropriate, local building codes, which may include:

    - USA: Chapters R404 and R611 of the International Residential Codes (2000 and 2003)
    - USA: EB 118: "Prescriptive Requirements for Insulating Concrete Forms in Residential Construction, 2nd Edition" published by the Portland Cement Association
    - Canada: Part 9 of the National Building Code of Canada and all applicable Canadian Provincial Codes (1995).

    NOTE: If the proposed construction does not meet the design or applicability parameters noted herein, a local design professional shall be retained to prepare the design in accordance with applicable standards.

2. The following maximum UNFACTORED loads were assumed in the design of the lintels featured in this appendix:

    A) Roof Snow Load (Live) = 84 psf (4.0 kPa)
    B) Occupancy Load (Live) = 40 psf (1.9 kPa)
    C) Roof and Floor Load (Dead) = 15 psf (0.7 kPa)
    D) Concrete Density (Dead) = 150 lb/ft³ (23.6 kN/m³)
    E) Brick Density (Dead) = 128 lb/ft³ (20.0 kN/m³)

3. The uniformly distributed loads indicated within the tables of this appendix are UNFACTORED and are also assumed in the design of the lintels in conjunction with the un-factored loads stated in Note 2.

4. The uniformly distributed load is calculated by multiplying the floor loads, live (LL) and dead (DL), by the tributary floor or roof width. The tributary floor/roof width (TW) is determined by adding half the span of each rafter/joist bearing on the

concrete lintel. For example, a lintel supporting floor joists spanning 10'-0" on one side only, the uniformly distributed load (UDL) is calculated as follows:

UDL = TW (LL + DL) = 10ft/2 (40 psf + 15 psf) = 275 lbs/ft

5. Design deflection for the lintel tables within this appendix is limited to L/360.

6. Design is limited to 1 floor below grade and a maximum of 2 storeys above grade.

7. Maximum floor clear span = 24 ft (7.32 m).
8. Maximum roof clear span = 40 ft (12.2 m).

9. Lintels are designed for uniformly distributed gravity loads only. A local design professional shall be retained to prepare the design of lintels to resist lateral loads or point loads, such as concentrated loads created by girder trusses, columns and beams, in accordance with applicable standards.

10. Minimum lintel reinforcing shall consist of the following:

    - A minimum of 1-#4 (10M) top bar located 1½" (38 mm) from top of lintel that extends a minimum of 24" (610mm) past each side of the wall opening.
    - Bottom bars are to be supplied per quantity and diameter indicated within the lintel tables of this appendix, installed with a concrete cover of 1½" (38mm) and shall extend a minimum of 24" (610 mm) past each side of the wall opening.
    - When required, minimum # 4 (10M) hook stirrups shall be installed around top and bottom bars, per the dimensions and required spacing as indicated in the Tables and Drawing L1, located at the end of this section.

11. Lintel steel specifications in Note 9 assume that horizontal # 4 (10M) continuous wall reinforcing is being maintained either side of the wall opening at 18" (457 mm) o.c.

12. Where there is less than 12" (305 mm) of wall between openings, the lintel shall be reinforced to span over both openings.

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13. Where there is less than 24" (610 mm) of wall between openings, and openings are greater than 5'-0" (1.53 m) in length, the lintel shall be reinforced to span over both openings.

14. Construction joints shall not be installed within 24" (610 mm) of any wall opening.

15. Minimum bar lap length shall be as follows:

A) 18" (457 mm) for #4 (10M) bars
B) 26" (660 mm for #5 (15M) bars
C) 30" (762 mm for #6 (20M) bars

16. Where bars within a lintel cannot achieve a minimum concrete side cover and spacing of 1½" (38 mm), the bars are required to be bundled. The following notes apply to all bundled bars:

A) A maximum of 4 parallel reinforcing bars may be bundled together in contact with each other, and assumed to act as a single unit. Bundled bars shall be tied, wired, or otherwise fastened together to ensure that they remain in position.

B) Individual bars within a given bundle of bars may terminate within the span of a lintel (or flexural member). However, the bars shall terminate at different points that occur at least 40 bar diameters apart from each other.

C) In any given bundle of bars, that is loaded in either tension or compression, the splice length and development length of bars within the bundle, shall be that for the individual bar, AND increased by 10% for a 2-bar bundle, 20% for a 3-bar bundle, and 33% for a 4-bar bundle. Again, as noted in sub-note (B) above, individual bar splices within a bundle shall not overlap.

17. Concrete work shall conform to the latest editions of the following standards for materials and workmanship:

- USA: ACI 318
- CAN: C.S.A. A23.1,2,3

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18. Reinforcing Steel shall be deformed rebar, placed in accordance with the manuals of standard practice for either the USA or Canada and shall be supplied at the following yield strengths:
    - USA: 60,000 ksi
    - CAN: Grade 400 (400 mPa)

19. The minimum 28 day compressive strength of concrete shall be 3000 psi (20 MPa).

20. All work shall conform to the latest editions of ANY of the following codes and standards that are deemed applicable for your region:

    USA:
    - International Residential Code 2000 or 2003
    - BOCA National Building Code 1999
    - Standard Building Code 1999
    - Uniform Building Code 1997
    - Florida Building Code 2001 or 2004
    - Other local State or regional building code, local regulations and bylaws
    - Occupational Safety and Health Association Regulations (OSHA).

    CAN:
    - National Building Code of Canada 1995
    - Other local Provincial or regional building code, local regulations and bylaws
    - Workplace and Hazardous Material Health and Safety (WHMS) & Ontario Ministry of Labour Safety Regulations.

21. The contractor shall make adequate provision for construction loads and temporary bracing to keep structure plumb and in true alignment at all phases of construction.

22. Top of lintels shall be laterally supported by building roof and floor systems, designed by others.

23. The contractor shall employ high frequency vibration to place all concrete.

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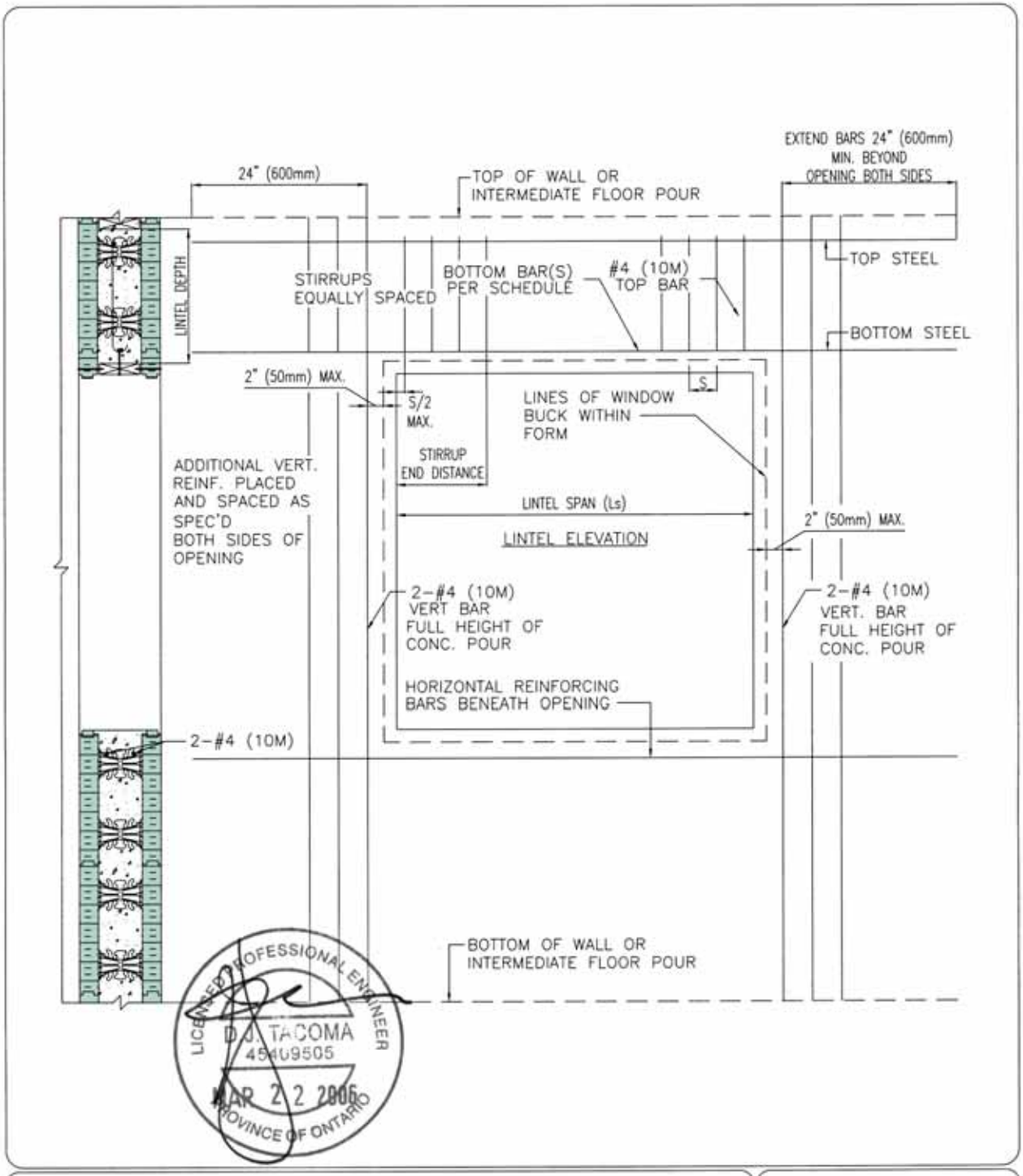
4. The contractor shall take adequate measures to protect concrete from exposure to freezing temperatures and precipitation for at least seven days after concrete placement.

E LINTEL TABLES DIAGRAM



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LINTEL DIAGRAM

REV. NO. 001	DWG NO. L-1
REV. DATE: FEB 2006	
DRAWN BY: T. VAN CLIEAF	SCALE: "Not to Scale"

E LINTEL TABLES (L4-9M)

225mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	200	1-10M	250	1-10M	250	1-10M	300
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	250	1-15M	350	1-15M	350	1-15M	400	1-15M	400		
1500mm	1-10M	0	1-10M	0	1-15M	350	1-15M	400	1-15M	500								
1800mm	1-10M	0	1-15M	350	1-15M	500	1-20M	550										
2400mm	1-15M	350	1-20M	650														
3000mm	2-15M	650																
3600mm																		
4200mm																		
4800mm																		
5400mm																		
6000mm																		

NOTES:
1. Stirrup Spacing = **102 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects 10M = #4 within the USA using imperial bar sizes - 15M = #5 the following substitutions are applicable: 20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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Table Prepared by:

LICENSED PROFESSIONAL ENGINEER D.J. TACOMA 45109505 PROVINCE OF ONTARIO MAR 2 2 2006

100mm Thick 225mm Deep Lintels

Table No. L 4-9M

E LINTEL TABLES (L4-9I)

9" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	8"	1-#4	10"	1-#4	10"	1-#4	12"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	10"	1-#5	14"	1-#5	14"	1-#5	16"	1-#5	16"		
5'-0"	1-#4	0"	1-#4	0"	1-#5	14"	1-#5	16"	1-#5	20"								
6'-0"	1-#4	0"	1-#5	14"	1-#5	20"	1-#6	22"										
8'-0"	1-#5	14"	1-#6	26"														
10'-0"	2-#5	26"																
12'-0"																		
14'-0"																		
16'-0"																		
18'-0"																		
20'-0"																		

NOTES:
1. Stirrup Spacing = 4"
2. This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".

For imperial dimension based projects within Canada using #4 = 10M metric bar sizes - the following substitutions are applicable #5 = 15M (The smaller diameter of 10M bar has already been factored within the required steel for each scenario) #6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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TACOMA ENGINEERS

Table Prepared by:

LICENSED PROFESSIONAL ENGINEER
D.J. TACOMA
45109505
PROVINCE OF ONTARIO
MAR 22 2006

4" Thick
9" Deep
Lintels

Table No.
L 4-9I

E LINTEL TABLES (L4-12M)

300mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	300	1-10M	300	1-10M	350	1-10M	350
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	350	1-10M	400	1-10M	450	1-10M	450	1-15M	500	1-15M	500
1500mm	1-10M	0	1-10M	350	1-10M	450	1-10M	500	1-15M	550	1-15M	600	1-15M	600	1-15M	650	1-20M	650
1800mm	1-10M	300	1-10M	500	1-15M	600	1-15M	650	1-15M	700	1-20M	750	1-20M	750	1-20M	800	2-15M	800
2400mm	1-15M	600	1-15M	800	1-20M	900	1-20M	950	2-15M	1000	1-15M + 1-20M	1050						
3000mm	1-15M	900	1-20M	1100	2-15M	1200												
3600mm	1-20M	1200	1-15M + 1-20M	1400														
4200mm	1-15M + 1-20M	1500																
4800mm																		
5400mm																		
6000mm																		

NOTES:
1. Stirrup Spacing = **152 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects 10M = #4
within the USA using imperial bar sizes - 15M = #5
the following substitutions are applicable: 20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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TACOMA ENGINEERS

PROFESSIONAL ENGINEER
LICENSED
D. TACOMA
15419505
MAR 22 2006
PROVINCE OF ONTARIO

Table Prepared by:

100mm Thick
300mm Deep
Lintels

Table No.
L 4-12M

E LINTEL TABLES (L4-12I)

12" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	12"	1-#4	12"	1-#4	14"	1-#4	14"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	14"	1-#4	16"	1-#4	18"	1-#4	18"	1-#5	20"	1-#5	20"
5'-0"	1-#4	0"	1-#4	14"	1-#4	18"	1-#4	20"	1-#5	22"	1-#5	24"	1-#5	24"	1-#5	26"	1-#2	26"
6'-0"	1-#4	12"	1-#4	20"	1-#5	24"	1-#5	26"	1-#5	28"	1-#6	30"	1-#6	30"	1-#6	32"	2-#6	32"
8'-0"	1-#5	24"	1-#5	32"	1-#6	36"	1-#6	38"	2-#5	40"	1-#5 + 1-#6	42"						
10'-0"	1-#5	36"	1-#6	44"	2-#5	48"												
12'-0"	1-#6	48"	1-#5 + 1-#6	56"														
14'-0"	1-#5 + 1-#6	60"																
16'-0"																		
18'-0"																		
20'-0"																		

NOTES:
1. Stirrup Spacing = **6"**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using metric bar sizes - the following substitutions are applicable
*(The smaller diameter of 10M bar has already been factored within the required steel for each scenario)

#4 = 10M
#5 = 15M
#6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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TACOMA ENGINEERS

Table Prepared by:

LICENSED PROFESSIONAL ENGINEER D.J. TACOMA 45409505 MAR 2 2 2006 PROVINCE OF ONTARIO

4" Thick 12" Deep Lintels

Table No. L 4-12I

375mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	400	1-10M	400	1-10M	450	1-10M	450
1500mm	1-10M	0	1-10M	0	1-10M	350	1-10M	450	1-10M	500	1-10M	550	1-15M	550	1-15M	600	1-15M	600
1800mm	1-10M	0	1-10M	400	1-10M	500	1-15M	600	1-15M	650	1-15M	700	1-15M	700	1-15M	750	1-20M	750
2400mm	1-10M	450	1-15M	700	1-15M	800	1-15M	900	1-20M	950	1-20M	1000	2-15M	1000				
3000mm	1-15M	750	1-15M	1000	1-20M	1100	2-15M	1200	1-20M + 1-15M	1250								
3600mm	1-15M	1050	1-20M	1300	2-15M	1400	2-20M	1500										
4200mm	1-20M	1350	1-20M + 1-15M	1600	2-20M + 1-10M	1700												
4800mm	2-15M	1650	2-20M + 1-10M	1900														
5400mm	2-20M	1950																
6000mm	2-20M + 1-15M	2250																

NOTES:
1. Stirrup Spacing =**203 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects 10M = #4
within the USA using imperial bar sizes - 15M = #5
the following substitutions are applicable: 20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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LICENSED PROFESSIONAL ENGINEER
TACOMA
MAR 2 2 2006
PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

100mm Thick
375mm Deep
Lintels

Table No.
L 4-15M

15" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	16"	1-#4	16"	1-#4	18"	1-#4	18"
5'-0"	1-#4	0"	1-#4	0"	1-#4	14"	1-#4	18"	1-#4	20"	1-#4	22"	1-#5	22"	1-#5	24"	1-#5	24"
6'-0"	1-#4	0"	1-#4	16"	1-#4	20"	1-#5	24"	1-#5	26"	1-#5	28"	1-#5	28"	1-#5	30"	1-#6	30"
8'-0"	1-#4	18"	1-#5	28"	1-#5	32"	1-#5	36"	1-#6	38"	1-#6	40"	2-#5	40"				
10'-0"	1-#5	30"	1-#5	40"	1-#6	44"	2-#5	48"	1-#5 + 1-#6	50"								
12'-0"	1-#5	42"	1-#6	52"	2-#5	56"	2-#6	60"										
14'-0"	1-#6	54"	1-#5 + 1-#6	64"	2-#6 + 1-#4	68												
16'-0"	2-#5	66"	1-#4 + 2-#6	78"														
18'-0"	2-#6	78"																
20'-0"	2-#6 + 1-#5	90"																

NOTES:

1. Stirrup Spacing = **8"**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using metric bar sizes - the following substitutions are applicable (The smaller diameter of 10M bar has already been factored within the required steel for each scenario)

#4 = 10M
#5 = 15M
#6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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LICENSED PROFESSIONAL ENGINEER — DAN TACOMA — 45109506 — MAR 2 2 2006 — PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

4" Thick
15" Deep
Lintels

Table No.

L 4-15I

450mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1500mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	450	1-10M	500	1-10M	500	1-15M	550	1-15M	550
1800mm	1-10M	0	1-10M	0	1-10M	0	1-10M	500	1-10M	600	1-15M	650	1-15M	650	1-15M	700	1-15M	700
2400mm	1-10M	0	1-10M	550	1-15M	700	1-15M	800	1-15M	900	1-20M	950	1-20M	950	1-20M	1000	2-15M	1000
3000mm	1-10M	600	1-15M	850	1-15M	1000	1-20M	1100	2-15M	1200	2-15M	1250	1-15M + 1-20M	1250				
3600mm	1-15M	900	1-20M	1150	1-20M	1300	2-15M	1400	1-15M + 1-20M	1500								
4200mm	1-20M	1200	2-15M	1450	1-15M + 1-20M	1600	2-20M	1700										
4800mm	1-20M	1500	1-15M + 1-20M	1750	1-10M + 2-20M	1900												
5400mm	2-15M	1800	2-20M	2050														
6000mm	1-15M + 1-20M	2100	3-20M	2350														

NOTES:
1. Stirrup Spacing = **254 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects 10M = #4
within the USA using imperial bar sizes - 15M = #5
the following substitutions are applicable: 20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

NUDURA INTEGRATED BUILDING TECHNOLOGY
Building Value.

LICENSED PROFESSIONAL ENGINEER
D. TACOMA
#109505
MAR 2 2 2006
PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

100mm Thick
450mm Deep
Lintels

Table No.
L 4-18M

18" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
5'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	18"	1-#4	20"	1-#4	20"	1-#5	22"	1-#5	22"
6'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	20"	1-#4	24"	1-#5	26"	1-#5	26"	1-#5	28"	1-#5	28"
8'-0"	1-#4	0"	1-#4	22"	1-#5	28"	1-#5	32"	1-#5	36"	1-#6	38"	1-#6	38"	1-#6	40"	2-#5	40"
10'-0"	1-#4	24"	1-#5	34"	1-#5	40"	1-#6	44"	2-#5	48"	2-#5	50"	1-#5 + 1-#6	50"				
12'-0"	1-#5	36"	1-#6	46"	1-#6	52"	2-#5	56"	1-#5 + 1-#6	42"								
14'-0"	1-#6	48"	2-#5	58"	1-#5 + 1-#6	64"	2-#6	68"										
16'-0"	1-#6	60"	1-#5 + 1-#6	70"	2-#6 + 1-#4	76"												
18'-0"	2-#5	72"	2-#6	82"														
20'-0"	1-#5 + 1-#6	84"	3-#6	94"														

NOTES:

1. Stirrup Spacing = **10"**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using metric bar sizes - the following substitutions are applicable *(The smaller diameter of 10M bar has already been factored within the required steel for each scenario)

#4 = 10M
#5 = 15M
#6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

NUDURA INTEGRATED BUILDING TECHNOLOGY
Building Value.

LICENSED PROFESSIONAL ENGINEER
D. TACOMA
100145409505
MAR 2 2 2005
PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

4" Thick
18" Deep
Lintels

Table No.
L 4-18I

525mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1500mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	500	1-15M	550
1800mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	500	1-15M	550	1-15M	600	1-15M	650	1-15M	700
2400mm	1-10M	0	1-15M	0	1-15M	650	1-15M	750	1-15M	800	1-15M	850	1-20M	900	1-20M	950	1-20M	1000
3000mm	1-15M	0	1-15M	750	1-15M	950	1-20M	1050	1-20M	1100	1-20M	1150	2-15M	1200	2-15M	1250	1-15M + 1-20M	1300
3600mm	1-15M	700	1-15M	1050	1-20M	1250	2-15M	1350	2-15M	1400	1-15M + 1-20M	1450	2-20M	1500				
4200mm	1-15M	1000	1-20M	1350	2-15M	1550	1-15M + 1-20M	1650	2-20M	1700								
4800mm	1-20M	1300	2-15M	1650	1-15M + 1-20M	1850	1-10M + 2-20M	1950										
5400mm	1-20M	1600	1-15M + 1-20M	1950	1-10M + 2-20M	2150												
6000mm	2-15M	1900	2-20M	2250	3-20M	2450												

NOTES:
1. Stirrup Spacing = **330 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects 10M = #4
within the USA using imperial bar sizes - 15M = #5
the following substitutions are applicable: 20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

NUDURA INTEGRATED BUILDING TECHNOLOGY
Building Value.

LICENSED PROFESSIONAL ENGINEER
D.J. TACOMA
MAR 2 2 2006
PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

100mm Thick
525mm Deep
Lintels

Table No.
L 4-21M

21" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
5'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	20"	1-#5	22"
6'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	20"	1-#5	22"	1-#5	24"	1-#5	26"	1-#5	28"
8'-0"	1-#4	0"	1-#5	0"	1-#5	26"	1-#5	30"	1-#5	32"	1-#5	34"	1-#6	36"	1-#6	38"	1-#6	40"
10'-0"	1-#5	0"	1-#5	30"	1-#5	38"	1-#6	42"	1-#6	44"	1-#6	46"	2-#5	48"	2-#5	50"	1-#5 + 1-#6	52"
12'-0"	1-#5	28"	1-#5	42"	1-#6	50"	2-#5	54"	2-#5	56"	1-#5 + 1-#6	58"	2-#6	60"				
14'-0"	1-#5	40"	1-#6	54"	2-#5	62"	1-#5 + 1-#6	66"	2-#6	68"								
16'-0"	1-#6	52"	2-#5	66"	1-#5 + 1-#6	74"	2-#6 + 1-#4	78"										
18'-0"	1-#6	64"	1-#5 + 1-#6	78"	1-#4 + 2-#6	86"												
20'-0"	2-#5	78"	2-#6	90"	3-#6	98												

NOTES:

1. Stirrup Spacing = **13"**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using metric bar sizes - the following substitutions are applicable

*(The smaller diameter of 10M bar has already been factored within the required steel for each scenario)

#4 = 10M
#5 = 15M
#6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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LICENSED PROFESSIONAL ENGINEER L.J. TACOMA 45109505 MAR 2 2 2006 PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

4" Thick 21" Deep Lintels

Table No. L 4-21I

600mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1500mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0
1800mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	600	1-15M	650
2400mm	1-10M	0	1-10M	0	1-15M	0	1-15M	650	1-15M	750	1-15M	800	1-15M	850	1-15M	900	1-20M	950
3000mm	1-10M	0	1-15M	650	1-15M	850	1-15M	950	1-20M	1050	1-20M	1100	1-20M	1150	2-15M	1200	2-15M	1250
3600mm	1-15M	0	1-15M	950	1-20M	1150	1-20M	1250	2-15M	1350	2-15M	1400	1-15M + 1-20M	1450	1-15M + 1-20M	1500	2-20M	1550
4200mm	1-15M	850	1-20M	1250	1-20M	1450	2-15M	1550	1-15M + 1-20M	1650	2-20M	1700	1-10M + 2-20M	1750				
4800mm	1-15M	1150	1-20M	1550	2-15M	1750	1-15M + 1-20M	1850	1-10M + 2-20M	1950								
5400mm	1-20M	1450	2-15M	1850	2-20M	2050	1-10M + 2-20M	2150										
6000mm	2-15M	1750	1-15M + 1-20M	2150	1-10M + 2-20M	2350	3-20M	2450										

NOTES:
1. Stirrup Spacing = **381 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects within the USA using imperial bar sizes - the following substitutions are applicable:
10M = #4
15M = #5
20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

NUDURA INTEGRATED BUILDING TECHNOLOGY *Building Value.*

LICENSED PROFESSIONAL ENGINEER
D.J. TACOMA
45509505
MAR 22 2005
PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

100mm Thick
600mm Deep
Lintels

Table No.
L 4-24M

E LINTEL TABLES (L4-24I)

24" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
5'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"
6'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	24"	1-#5	26"
8'-0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	26"	1-#5	30"	1-#5	32"	1-#5	34"	1-#5	36"	1-#6	38"
10'-0"	1-#4	0"	1-#5	26"	1-#5	34"	1-#5	38"	1-#2	42"	1-#6	44"	1-#6	46"	2-#5	48"	2-#5	50"
12'-0"	1-#5	0"	1-#5	38"	1-#6	46"	1-#6	50"	2-#5	54"	2-#5	56"	1-#5 + 1-#6	58"	1-#5 + 1-#6	60"	2-#6	62"
14'-0"	1-#5	34"	1-#6	50"	1-#6	58"	2-#5	62"	1-#5 + 1-#6	66"	2-#6	68"	1-#4 + 2-#6	70"				
16'-0"	1-#5	46"	1-#6	62"	2-#5	70"	1-#5 + 1-#6	74"	2-#6 + 1-#4	78"								
18'-0"	1-#6	58"	2-#5	74"	2-#6	82"	1-#4 + 2-#6	86"										
20'-0"	2-#5	70"	1-#5 + 1-#6	86"	2-#6+ 1-#4	94"	3-#6	98"										

NOTES:
1. Stirrup Spacing = 15"
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using #4 = 10M metric bar sizes - the following substitutions are applicable #5 = 15M (The smaller diameter of 10M bar has already been factored within the required steel for each scenario) #6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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TACOMA ENGINEERS

Table Prepared by:

LICENSED PROFESSIONAL ENGINEER
D. TACOMA
100540505
PROVINCE OF ONTARIO
MAR 22 2006

4" Thick
24" Deep
Lintels

Table No.
L 4-24I

E LINTEL TABLES (L6-9M)

225mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	200
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	250	1-15M	300	1-15M	350	1-15M	350
1500mm	1-10M	0	1-10M	0	1-15M	0	1-15M	250	1-15M	350	1-20M	400	1-20M	450	1-20M	500	2-15M	500
1800mm	1-10M	0	1-15M	0	1-15M	250	1-20M	400	1-20M	500	2-15M	550	2-15M	600				
2400mm	1-15M	0	1-20M	350	2-15M	550	1-15M + 1-20M	700										
3000mm	1-20M	300	1-15M + 1-20M	650														
3600mm	1-15M + 1-20M	600																
4200mm																		
4800mm																		
5400mm																		
6000mm																		

NOTES:
1. Stirrup Spacing = **102 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects 10M = #4 within the USA using imperial bar sizes - 15M = #5 the following substitutions are applicable: 20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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LICENSED PROFESSIONAL ENGINEER D. TACOMA 5405503 PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

150mm Thick
225mm Deep
Lintels

Table No. L 6-9M

E LINTEL TABLES (L6-9I)

9" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	8"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	10"	1-#5	12"	1-#5	14"	1-#5	14"
5'-0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	10"	1-#5	14"	1-#6	16"	1-#6	18"	1-#6	20"	2-#5	20"
6'-0"	1-#4	0"	1-#5	0"	1-#5	10"	1-#6	16"	1-#6	20"	2-#5	22"	2-#5	24"				
8'-0"	1-#5	0"	1-#6	14"	2-#5	22"	1-#5 + 1-#6	28"										
10'-0"	1-#6	12"	1-#5 + 1-#6	26"														
12'-0"	1-#5 + 1-#6	24"																
14'-0"																		
16'-0"																		
18'-0"																		
20'-0"																		

NOTES:
1. Stirrup Spacing = 4"
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using #4 = 10M metric bar sizes - the following substitutions are applicable #5 = 15M
*(The smaller diameter of 10M bar has already been factored within the required steel for each scenario) #6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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LICENSED PROFESSIONAL ENGINEER
D. TACOMA
100505
PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

6" Thick
9" Deep
Lintels

Table No.
L 6-9I

300mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	300
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	300	1-10M	350	1-10M	400	1-15M	400	1-15M	450
1500mm	1-10M	0	1-10M	0	1-10M	300	1-10M	400	1-15M	450	1-15M	500	1-15M	550	1-15M	550	1-15M	600
1800mm	1-10M	0	1-10M	300	1-15M	450	1-15M	550	1-15M	600	1-15M	650	1-20M	700	1-20M	700	1-20M	750
2400mm	1-15M	350	1-15M	600	1-20M	750	1-20M	850	2-15M	900	2-15M	950	1-15M + 1-20M	1000	2-20M	1000	1-10M + 2-20M	1050
3000mm	1-15M	650	1-20M	900	2-15M	1050	1-15M + 1-20M	1150	2-20M	1200								
3600mm	1-20M	950	2-15M	1200	2-20M	1350	3-20M	1450										
4200mm	2-15M	1250	1-10M + 2-20M	1500														
4800mm	2-20M	1550																
5400mm																		
6000mm																		

NOTES:
1. Stirrup Spacing = **152 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects 10M = #4
within the USA using imperial bar sizes - 15M = #5
the following substitutions are applicable: 20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

NUDURA INTEGRATED BUILDING TECHNOLOGY *Building Value.*

LICENCED PROFESSIONAL ENGINEER
D.M. TACOMA
95409505
MAR 2 2 2006
PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

150mm Thick
300mm Deep
Lintels

Table No.
L 6-12M

E LINTEL TABLES (L6-12I)

12" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	12"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	12"	1-#4	14"	1-#4	16"	1-#5	16"	1-#5	18"
5'-0"	1-#4	0"	1-#4	0"	1-#4	12"	1-#4	16"	1-#5	18"	1-#5	20"	1-#5	22"	1-#5	22"	1-#5	24"
6'-0"	1-#4	0"	1-#4	12"	1-#5	18"	1-#5	22"	1-#5	24"	1-#5	26"	1-#6	28"	1-#6	28"	1-#6	30"
8'-0"	1-#5	14"	1-#5	24"	1-#6	30"	1-#6	34"	2-#5	36"	2-#5	38"	1-#5 + 1-#6	40"	2-#6	40"	2-#6 + 1-#4	42"
10'-0"	1-#5	26"	1-#6	36"	2-#5	42"	1-#5 + 1-#6	46"	2-#6	48"								
12'-0"	1-#6	38"	2-#5	48"	2-#6	54"	3-#6	58"										
14'-0"	2-#5	50"	1-#4 + 2-#6	60"														
16'-0"	2-#6	62"																
18'-0"																		
20'-0"																		

NOTES:
1. Stirrup Spacing = 6"
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using #4 = 10M metric bar sizes - the following substitutions are applicable #5 = 15M #6 = 20M
*(The smaller diameter of 10M bar has already been factored within the required steel for each scenario)
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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Building Value.

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TACOMA ENGINEERS

Table Prepared by:

LICENSED PROFESSIONAL ENGINEER
D. TACOMA
100409505
MAR 2 2 2006
PROVINCE OF ONTARIO

6" Thick
12" Deep
Lintels

Table No.
L 6-12I

375mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	350
1500mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	350	1-15M	400	1-15M	450	1-15M	500	1-15M	500
1800mm	1-10M	0	1-10M	0	1-15M	0	1-15M	450	1-15M	500	1-15M	550	1-15M	600	1-15M	650	1-20M	650
2400mm	1-15M	0	1-15M	450	1-15M	600	1-15M	750	1-20M	800	1-20M	850	2-15M	900	2-15M	950	2-15M	950
3000mm	1-15M	400	1-15M	750	1-20M	900	2-15M	1050	2-15M	1100	1-15M + 1-20M	1150	2-20M	1200	1-10M + 2-20M	1250		
3600mm	1-15M	700	1-20M	1050	2-15M	1200	1-15M + 1-20M	1350	2-20M	1400	1-15M + 2-20M	1450						
4200mm	1-20M	1000	2-15M	1350	2-20M	1500	1-15M + 2-20M	1650										
4800mm	2-15M	1300	2-20M	1650	1-15M + 2-20M	1800												
5400mm	1-15M + 1-20M	1600	1-15M + 2-20M	1950														
6000mm	1-10M + 2-20M	1900																

NOTES:
1. Stirrup Spacing = **203 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects within the USA using imperial bar sizes - the following substitutions are applicable:
10M = #4
15M = #5
20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

NUDURA INTEGRATED BUILDING TECHNOLOGY
Building Value.

PROFESSIONAL ENGINEER
LICENSED
D.J. TACOMA
43409505
MAR 22 2006
PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

150mm Thick
375mm Deep
Lintels

Table No.
L 6-15M

15" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	14"
5'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	14"	1-#5	16"	1-#5	18"	1-#5	20"	1-#5	20"
6'-0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	18"	1-#5	20"	1-#5	22"	1-#5	24"	1-#5	26"	1-#6	26"
8'-0"	1-#5	0"	1-#5	18"	1-#5	24"	1-#5	30"	1-#6	32"	1-#6	34"	2-#5	36"	2-#5	38"	2-#5	38"
10'-0"	1-#5	16"	1-#5	30"	1-#6	36"	2-#5	42"	2-#5	44"	1-#5 + 1-#6	44"	2-#6	48"	2-#6 + 1-#4	50"		
12'-0"	1-#5	28"	1-#6	42"	2-#5	48"	1-#5 + 1-#6	54"	2-#6	56"	1-#5 + 2-#6	58"						
14'-0"	1-#6	40"	2-#5	54"	2-#6	60"	1-#5 + 2-#6	66"										
16'-0"	2-#5	52"	2-#6	66"	1-#5 + 2-#6	72"												
18'-0"	1-#5 + 1-#6	64"	1-#5 + 2-#6	78"														
20'-0"	1-#4 + 2-#6	76"																

NOTES:

1. Stirrup Spacing = **8"**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using metric bar sizes - the following substitutions are applicable *(The smaller diameter of 10M bar has already been factored within the required steel for each scenario)

#4 = 10M
#5 = 15M
#6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

NUDURA INTEGRATED BUILDING TECHNOLOGY *Building Value.*

LICENSED PROFESSIONAL ENGINEER D. TACOMA #5039505 MAR 2 2 2006 PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

6" Thick
15" Deep
Lintels

Table No.

L 6-15I

E LINTEL TABLES (L6-18M)

450mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1500mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	450	1-15M	450
1800mm	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	500	1-15M	550	1-15M	600	1-15M	600
2400mm	1-10M	0	1-15M	0	1-15M	500	1-15M	650	1-15M	700	1-20M	800	1-20M	850	1-20M	900	2-15M	900
3000mm	1-15M	0	1-15M	550	1-15M	800	1-20M	950	1-20M	1000	2-15M	1100	2-15M	1150	1-15M + 1-20M	1200	2-20M	1200
3600mm	1-15M	500	1-20M	850	1-20M	1100	2-15M	1250	1-15M + 1-20M	1300	2-20M	1400	1-10M + 2-20M	1450	1-15M + 2-20M	1500		
4200mm	1-20M	800	2-15M	1150	1-15M + 1-20M	1400	2-20M	1550	1-10M + 2-20M	1600	1-15M + 2-20M	1700						
4800mm	1-20M	1100	1-15M + 1-20M	1450	2-20M	1700	1-15M + 2-20M	1850										
5400mm	2-15M	1400	2-20M	1750	1-15M + 2-20M	2000												
6000mm	1-15M + 1-20M	1700	1-15M + 2-20M	2050														

NOTES:
1. Stirrup Spacing = **254 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects 10M = #4 within the USA using imperial bar sizes - 15M = #5 the following substitutions are applicable: 20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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Building Value.
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LICENSED PROFESSIONAL ENGINEER D. J. TACOMA 25409505 PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

150mm Thick
450mm Deep
Lintels

Table No.
L 6-18M

18" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
5'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	18"	1-#5	18"
6'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	20"	1-#5	22"	1-#5	24"	2-#5	24"
8'-0"	1-#4	0"	1-#5	0"	1-#5	20"	1-#5	26"	1-#5	28"	1-#6	32"	1-#6	34"	1-#6	36"	2-#5	36"
10'-0"	1-#5	0"	1-#5	22"	1-#5	32"	1-#6	38"	1-#6	40"	2-#5	44"	2-#5	46"	1-#5 + 1-#6	48"	2-#6	48"
12'-0"	1-#5	20"	1-#6	34"	1-#6	44"	2-#5	50"	1-#5 + 1-#6	52"	2-#6	56"	2-#6 + 1-#4	58"	1-#5 + 2-#6	60"		
14'-0"	1-#6	32"	2-#5	46"	1-#5 + 1-#6	56"	2-#6	62"	2-#6 + 1-#5	64"	1-#5 + 2-#6	68"						
16'-0"	1-#6	44"	1-#5 + 1-#6	58"	2-#6	68"	1-#5 + 2-#6	74"										
18'-0"	2-#5	56"	2-#6	70"	1-#5 + 2-#6	80"												
20'-0"	1-#5 + 1-#6	68"	1-#5 + 2-#6	82"														

NOTES:

1. Stirrup Spacing = **10"**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using metric bar sizes - the following substitutions are applicable (The smaller diameter of 10M bar has already been factored within the required steel for each scenario)

#4 = 10M
#5 = 15M
#6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

NUDURA INTEGRATED BUILDING TECHNOLOGY *Building Value.*

TACOMA ENGINEERS

Table Prepared by:

6" Thick
18" Deep
Lintels

Table No.

L 6-18I

525mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1500mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	0
1800mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	0	1-15M	500	1-15M	550
2400mm	1-10M	0	1-15M	0	1-15M	0	1-15M	500	1-15M	650	1-15M	700	1-15M	750	1-20M	800	1-20M	850
3000mm	1-15M	0	1-15M	0	1-15M	650	1-20M	800	1-20M	950	1-20M	1000	2-15M	1050	2-15M	1100	1-15M + 1-20M	1150
3600mm	1-15M	0	1-15M	700	1-20M	950	1-20M	1100	2-15M	1250	1-15M + 1-20M	1300	1-15M + 1-20M	1350	2-20M	1400	1-10M + 2-20M	1450
4200mm	1-15M	550	1-20M	1000	2-15M	1250	1-15M + 1-20M	1400	2-20M	1550	2-20M	1600	1-10M + 2-20M	1650	3-20M	1700		
4800mm	1-20M	850	2-15M	1300	1-15M + 1-20M	1550	2-20M	1700	1-10M + 2-20M	1850	3-20M	1900						
5400mm	2-15M	1150	1-15M + 1-20M	1600	2-20M	1850	1-15M + 2-20M	2000										
6000mm	2-15M	1450	2-20M	1900	1-15M + 2-20M	2150												

NOTES:
1. Stirrup Spacing = **330 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects 10M = #4
within the USA using imperial bar sizes - 15M = #5
the following substitutions are applicable: 20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

NUDURA INTEGRATED BUILDING TECHNOLOGY
Building Value.

LICENSED PROFESSIONAL ENGINEER
D.J. TACOMA
45509505
MAR 2 2006
PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

150mm Thick
525mm Deep
Lintels

Table No.
L 6-21M

E LINTEL TABLES (L6-21I)

21" Lintel Depth

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
5'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	0"
6'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#5	20"	1-#5	22"
8'-0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	20"	1-#5	26"	1-#5	28"	1-#5	30"	1-#6	32"	1-#6	34"
10'-0"	1-#5	0"	1-#5	0"	1-#5	26"	1-#6	32"	1-#6	38"	1-#6	40"	2-#5	42"	2-#5	44"	1-#5 + 1-#6	46"
12'-0"	1-#5	0"	1-#5	28"	1-#6	38"	1-#6	44"	2-#5	50"	1-#5 + 1-#6	52"	1-#5 + 1-#6	54"	2-#6	56"	2-#6 + 1-#4	58"
14'-0"	1-#5	22"	1-#6	40"	2-#5	50"	1-#6 + 1-#5	56"	2-#6	62"	2-#6	64"	1-#4 + 2-#6	66"	3-#6	68"		
16'-0"	1-#6	34"	2-#5	52"	1-#5 + 1-#6	62"	2-#6	68"	1-#4 + 2-#6	74"	3-#6	76"						
18'-0"	2-#5	46"	1-#5 + 1-#6	64"	2-#6	74"	1-#5 + 2-#6	80"										
20'-0"	2-#5	58"	2-#6	76"	1-#5 + 2-#6	86"												

NOTES:
1. Stirrup Spacing = **13"**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using metric bar sizes - the following substitutions are applicable
*(The smaller diameter of 10M bar has already been factored within the required steel for each scenario)
#4 = 10M
#5 = 15M
#6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

NUDURA® INTEGRATED BUILDING TECHNOLOGY *Building Value.*

TACOMA ENGINEERS

Table Prepared by:

6" Thick 21" Deep Lintels

Table No. L 6-21I

600mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1500mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0
1800mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	0	1-15M	0
2400mm	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	0	1-15M	650	1-15M	700	1-15M	750	1-20M	800
3000mm	1-15M	0	1-15M	0	1-15M	0	1-15M	700	1-20M	850	1-20M	950	1-20M	1000	2-15M	1050	2-15M	1100
3600mm	1-15M	0	1-15M	0	1-20M	850	1-20M	1000	2-15M	1150	2-15M	1250	1-15M + 1-20M	1300	1-15M + 1-20M	1350	2-20M	1400
4200mm	1-15M	0	1-20M	850	1-20M	1150	2-15M	1300	1-15M + 1-20M	1450	1-15M + 1-20M	1550	2-20M	1600	1-10M + 2-20M	1650	1-15M + 2-20M	1700
4800mm	1-20M	650	1-20M	1150	2-15M	1450	1-15M + 1-20M	1600	2-20M	1750	1-10M + 2-20M	1850	1-15M + 2-20M	1900				
5400mm	1-20M	950	2-15M	1450	1-15M + 1-20M	1750	1-10M + 2-20M	1900	1-15M + 2-20M	2050								
6000mm	2-15M	1250	1-15M + 1-20M	1750	1-10M + 2-20M	2050	3-20M	2200										

NOTES:
1. Stirrup Spacing = **381 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects 10M = #4
within the USA using imperial bar sizes - 15M = #5
the following substitutions are applicable: 20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

NUDURA INTEGRATED BUILDING TECHNOLOGY
Building Value.

LICENSED PROFESSIONAL ENGINEER
D. TACOMA
25409505
MAR 12 2008
PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

150mm Thick
600mm Deep
Lintels

Table No.
L 6-24M

24" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
5'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"
6'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#5	0"
8'-0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#5	26"	1-#5	28"	1-#5	30"	1-#6	32"
10'-0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#5	28"	1-#6	34"	1-#6	38"	1-#6	40"	2-#5	42"	2-#5	44"
12'-0"	1-#5	0"	1-#5	0"	1-#6	34"	1-#6	40"	2-#5	46"	2-#5	50"	1-#5 + 1-#6	52"	1-#5 + 1-#6	54"	2-#6	56"
14'-0"	1-#5	0"	1-#6	34"	1-#6	46"	2-#5	52"	1-#5 + 1-#6	58"	1-#5 + 1-#6	62"	2-#6	64"	1-#4 + 2-#6	66"	1-#5 + 2-#6	68"
16'-0"	1-#6	26"	1-#6	46"	2-#5	58"	1-#5 + 1-#6	64"	2-#6	70"	1-#4 + 2-#6	74"	1-#5 + 2-#6	76"				
18'-0"	1-#6	38"	2-#5	58"	1-#5 + 1-#6	70"	2-#6 + 1-#4	76"	2-#6 + 1-#5	82"								
20'-0"	2-#5	50"	1-#5 + 1-#6	70"	2-#6 + 1-#4	82"	3-#6	88"										

NOTES:

1. Stirrup Spacing = **15"**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using metric bar sizes - the following substitutions are applicable (The smaller diameter of 10M bar has already been factored within the required steel for each scenario)

#4 = 10M
#5 = 15M
#6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

NUDURA INTEGRATED BUILDING TECHNOLOGY *Building Value.*

LICENSED PROFESSIONAL ENGINEER D.L. TACOMA MAR 2 2 2006 PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

6" Thick
24" Deep
Lintels

Table No.

L 6-24I

225mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	0
1200mm	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	0	1-15M	0	1-15M	250	1-15M	250
1500mm	1-10M	0	1-15M	0	1-15M	0	1-15M	0	1-15M	0	1-15M	250	1-20M	350	1-20M	400	1-20M	400
1800mm	1-15M	0	1-15M	0	1-15M	0	1-20M	250	1-20M	350	2-15M	400	2-15M	500	1-15M + 1-20M	550	1-15M + 1-20M	550
2400mm	1-15M	0	1-20M	0	2-15M	350	1-15M + 1-20M	550	2-20M	650	1-15M + 2-20M	700						
3000mm	1-20M	0	1-15M + 1-20M	400	1-10M + 2-20M	650												
3600mm	1-15M + 1-20M	200	1-15M + 2-20M	700														
4200mm	1-10M + 2-20M	500																
4800mm																		
5400mm																		
6000mm																		

NOTES:
1. Stirrup Spacing = **102 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects 10M = #4
within the USA using imperial bar sizes - 15M = #5
the following substitutions are applicable: 20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

NUDURA INTEGRATED BUILDING TECHNOLOGY
Building Value.

LICENSED PROFESSIONAL ENGINEER
D.J. TACOMA
45699505
MAR 2 2 2006
PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

200mm Thick
225mm Deep
Lintels

Table No.
L 8-9M

E LINTEL TABLES (L8-9I)

9" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	0"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#5	10"	1-#5	10"
5'-0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#5	10"	1-#6	14"	1-#6	16"	1-#6	16"
6'-0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#6	10"	1-#6	14"	2-#5	16""	2-#5	20"	1-#5 + 1-#6	22"	1-#5 + 1-#6	22"
8'-0"	1-#5	0"	1-#6	0"	2-#5	14"	1-#5 + 1-#6	22"	2-#6	26"	1-#5 + 2-#6	28"						
10'-0"	1-#6	0"	1-#5 + 1-#6	16"	1-#4 + 2-#6	26"												
12'-0"	1-#5 + 1-#6	8"	1-#5 + 2-#6	28"														
14'-0"	1-#4 + 2-#6	28"																
16'-0"																		
18'-0"																		
20'-0"																		

NOTES:
1. Stirrup Spacing = **4"**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using #4 = 10M
metric bar sizes - the following substitutions are applicable #5 = 15M
*(The smaller diameter of 10M bar has already been factored within the required steel for each scenario) #6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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Building Value.

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TACOMA ENGINEERS
Table Prepared by:

LICENSED PROFESSIONAL ENGINEER D.J. TACOMA 15109505 MAR 2 2 2006 PROVINCE OF ONTARIO

8" Thick
9" Deep
Lintels

Table No.
L 8-9I

300mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	300	1-15M	350	1-15M	350
1500mm	1-10M	0	1-10M	0	1-15M	0	1-15M	300	1-15M	350	1-15M	400	1-15M	450	1-15M	500	1-15M	500
1800mm	1-10M	0	1-15M	0	1-15M	300	1-15M	450	1-15M	500	1-15M	550	1-20M	600	1-20M	650	1-20M	650
2400mm	1-15M	0	1-15M	450	1-20M	600	1-20M	750	2-15M	800	2-15M	850	1-15M + 1-20M	900	1-15M + 1-20M	950	2-20M	950
3000mm	1-15M	400	1-20M	750	2-15M	900	1-15M + 1-20M	1050	2-20M	1100	1-10M + 2-20M	1150	1-15M + 2-20M	1200	1-10M + 3-20M	1250		
3600mm	1-20M	700	2-15M	1050	2-20M	1200	1-10M + 2-20M	1350	1-10M + 3-20M	1400								
4200mm	2-15M	1000	2-20M	1350	3-20M	1500												
4800mm	1-15M + 1-20M	1300	3-20M	1650														
5400mm	1-10M + 2-20M	1600																
6000mm	1-10M + 3-20M	1900																

NOTES:
1. Stirrup Spacing = **152 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects 10M = #4
within the USA using imperial bar sizes - 15M = #5
the following substitutions are applicable: 20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

NUDURA INTEGRATED BUILDING TECHNOLOGY *Building Value.*

LICENSED PROFESSIONAL ENGINEER D.J. TACOMA 45509505 MAR 2 2 2006 PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

200mm Thick 300mm Deep Lintels

Table No.

L 8-12M

E LINTEL TABLES (L8-12I)

12" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	12"	1-#5	14"	1-#5	14"
5'-0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	12"	1-#5	14	1-#5	16"	1-#5	18"	1-#5	20"	1-#5	20"
6'-0"	1-#4	0"	1-#5	0"	1-#5	12"	1-#5	18"	1-#5	20"	1-#5	22"	1-#6	24"	1-#6	26"	1-#6	26"
8'-0"	1-#5	0"	1-#5	18"	1-#6	24"	1-#6	30"	2-#5	32"	2-#5	34"	1-#5 + 1-#6	36"	1-#5 + 1-#6	38"	2-#6	38"
10'-0"	1-#5	16"	1-#6	30"	2-#15	36"	1-#5 + 1-#6	42"	2-#6	44"	1-#4 + 2-#6	46"	1-#5 + 2-#6	48"	1-#4 + 3-#6	50"		
12'-0"	1-#6	28"	2-#5	42"	2-#6	48"	1-#4 + 2-#6	54"	1-#4 + 3-#6	56"								
14'-0"	2-#5	40"	2-#6	54"	3-#6	60"												
16'-0"	1-#5 + 1-#6	52"	3-#6	66"														
18'-0"	1-#4 + 2-#6	64"																
20'-0"	1-#4 + 3-#6	76"																

NOTES:
1. Stirrup Spacing = 6"
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using #4 = 10M metric bar sizes - the following substitutions are applicable #5 = 15M
*(The smaller diameter of 10M bar has already been factored within the required steel for each scenario) #6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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Building Value.

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TACOMA ENGINEERS

PROFESSIONAL ENGINEER
LICENSED
TACOMA
PROVINCE OF ONTARIO

Table Prepared by:

8" Thick
12" Deep
Lintels

Table No.
L 8-12I

E LINTEL TABLES (L8-15M)

375mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	0
1500mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	350	1-15M	400	1-15M	450
1800mm	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	400	1-15M	450	1-15M	500	1-15M	550	1-20M	600
2400mm	1-15M	0	1-15M	0	1-15M	450	1-15M	600	1-20M	700	1-20M	750	2-15M	800	2-15M	850	2-15M	900
3000mm	1-15M	0	1-15M	500	1-20M	750	2-15M	900	2-15M	1000	1-15M + 1-20M	1050	2-20M	1100	2-20M	1150	1-10M + 2-20M	1200
3600mm	1-15M	400	1-20M	800	2-15M	1050	1-15M + 1-20M	1200	2-20M	1300	1-10M + 2-20M	1350	2-20M + 1-15M	1400	1-10M + 3-20M	1450	1-15M + 3-20M	1500
4200mm	1-20M	700	2-15M	1100	2-20M	1350	1-10M + 2-20M	1500	3-20M	1600	1-15M + 3-20M	1650						
4800mm	2-15M	1000	2-20M	1400	2-20M + 1-15M	1650	1-10M + 3-20M	1800										
5400mm	1-15M + 1-20M	1300	1-15M + 2-20M	1700	1-15M + 3-20M	1950												
6000mm	1-10M + 2-20M	1600	1-10M + 3-20M	2000														

NOTES:
1. Stirrup Spacing = **203 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects 10M = #4 within the USA using imperial bar sizes - 15M = #5 the following substitutions are applicable: 20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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TACOMA ENGINEERS

LICENSED PROFESSIONAL ENGINEER D.J. TACOMA 45 09505 PROVINCE OF ONTARIO MAR 4 2 2005

Table Prepared by:

200mm Thick
375mm Deep
Lintels

Table No.
L 8-15M

E LINTEL TABLES (L8-15I)

15" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"
5'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	14"	1-#5	16"	1-#5	18"
6'-0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	16"	1-#5	18"	1-#5	20"	1-#5	22"	1-#6	24"
8'-0"	1-#5	0"	1-#5	0"	1-#5	18"	1-#5	24"	1-#6	28"	1-#6	30"	2-#5	32"	2-#5	34"	2-#5	36"
10'-0"	1-#5	0"	1-#5	20"	1-#6	30"	2-#5	36"	2-#5	40"	1-#5 + 1-#6	42"	2-#6	44"	2-#6	46"	1-#4 + 2-#6	48"
12'-0"	1-#5	16"	1-#6	32"	2-#5	42"	1-#5 + 1-#6	48"	2-#6	52"	1-#4 + 2-#6	54"	1-#5 + 2-#6	56"	1-#4 + 3-#6	58"	1-#5 + 3-#6	60"
14'-0"	1-#6	28"	2-#5	44"	2-#6	54"	1-#4 + 2-#6	60"	3-#6	64"	1-#5 + 3-#6	66"						
16'-0"	2-#5	40"	2-#6	56"	1-#5 + 2-#6	66"	1-#4 + 3-#6	72"										
18'-0"	1-#5 + 1-#6	52"	1-#5 + 2-#6	68"	1-#5 + 3-#6	78"												
20'-0"	1-#4 + 2-#6	64"	1-#4 + 3-#6	80"														

NOTES:
1. Stirrup Spacing = **8"**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using #4 = 10M metric bar sizes - the following substitutions are applicable #5 = 15M
*(The smaller diameter of 10M bar has already been factored within the required steel for each scenario) #6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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TACOMA ENGINEERS

Table Prepared by:

8" Thick
15" Deep
Lintels

Table No.
L 8-15I

E LINTEL TABLES (L8-18M)

450mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1500mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	0	1-15M	0
1800mm	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	0	1-15M	0	1-15M	450	1-15M	500
2400mm	1-10M	0	1-15M	0	1-15M	0	1-15M	450	1-15M	550	1-20M	650	1-20M	700	1-20M	750	2-15M	328
3000mm	1-15M	0	1-15M	0	1-15M	550	1-20M	750	1-20M	850	2-15M	950	2-15M	1000	1-15M + 1-20M	1050	1-15M + 1-20M	628
3600mm	1-15M	0	1-20M	600	1-20M	850	2-15M	1050	1-15M + 1-20M	1150	2-20M	1250	2-20M	1300	2-20M + 1-10M	1350	2-20M + 1-15M	928
4200mm	1-20M	450	2-15M	900	1-15M + 1-20M	1150	2-20M	1350	1-10M + 2-20M	1450	1-15M + 2-20M	1550	3-20M	1600	1-10M + 3-20M	1650	4-20M	1228
4800mm	1-20M	750	1-15M + 1-20M	1200	2-20M	1450	1-10M + 2-20M	1650	3-20M	1750	1-15M + 3-20M	1850						
5400mm	2-15M	1050	2-20M	1500	1-15M + 2-20M	1750	1-10M + 3-20M	1950										
6000mm	1-15M + 1-20M	1350	1-10M + 2-20M	1800	1-10M + 3-20M	2050												

NOTES:
1. Stirrup Spacing = **254 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects within the USA using imperial bar sizes - the following substitutions are applicable:
10M = #4
15M = #5
20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

NUDURA INTEGRATED BUILDING TECHNOLOGY *Building Value.*

Table Prepared by: TACOMA ENGINEERS

200mm Thick 450mm Deep Lintels

Table No. L 8-18M

18" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
5'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#5	0"
6'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#5	18"	1-#5	20"
8'-0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	18"	1-#5	22"	1-#6	26"	1-#6	28"	1-#6	30"	2-#5	32"
10'-0"	1-#5	0"	1-#5	0"	1-#5	22"	1-#6	30"	1-#6	34"	2-#5	38"	2-#5	40"	1-#5 + 1-#6	42"	1-#5 + 1-#6	44"
12'-0"	1-#5	0"	1-#6	24"	1-#6	34"	2-#5	42"	1-#5 + 1-#6	46"	2-#6	50"	2-#6	52"	1-#4 + 2-#6	54"	1-#5 + 2-#6	56"
14'-0"	1-#6	18"	2-#5	36"	2-#5	46"	2-#6	54"	1-#4 + 2-#6	58"	1-#5 + 2-#6	62"	1-#5 + 3-#6	64"	1-#4 + 3-#6	66"	4-#6	68"
16'-0"	1-#6	30"	1-#5 + 1-#6	48"	1-#5 + 1-#6	58"	1-#4 + 2-#6	66"	3-#6	70"	1-#5 + 3-#6	74"						
18'-0"	2-#5	42"	2-#6	60"	2-#6 + 1-#4	70"	1-#4 + 3-#6	78"										
20'-0"	1-#5 + 1-#6	54"	1-#4 + 2-#6	72"	2-#6 + 1-#5	82"												

NOTES:

1. Stirrup Spacing = **10"**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using metric bar sizes - the following substitutions are applicable (The smaller diameter of 10M bar has already been factored within the required steel for each scenario):

#4 = 10M
#5 = 15M
#6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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LICENSED PROFESSIONAL ENGINEER
D.J. TACOMA
100454505
MAR 2 2 2006
PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

8" Thick
18" Deep
Lintels

Table No.

L 8-18I

E LINTEL TABLES (L8-21M)

525mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1500mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	0
1800mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	0	1-15M	0	1-15M	0
2400mm	1-10M	0	1-15M	0	1-15M	0	1-15M	0	1-20M	0	1-20M	550	1-20M	650	1-20M	700	1-20M	750
3000mm	1-15M	0	1-15M	0	1-20M	0	1-20M	600	1-20M	750	1-20M	850	2-15M	950	2-15M	1000	1-15M + 1-20M	1050
3600mm	1-15M	0	1-20M	0	1-20M	700	2-15M	900	2-15M	1050	1-15M + 1-20M	1150	1-15M + 1-20M	1250	2-20M	1300	1-10M + 2-20M	1350
4200mm	1-20M	0	1-20M	700	2-15M	1000	1-15M + 1-20M	1200	2-20M	1350	2-20M	1450	1-10M + 2-20M	1550	1-15M + 2-20M	1600	3-20M	1650
4800mm	1-20M	0	2-15M	1000	1-15M + 1-20M	1300	2-20M	1500	1-10M + 2-20M	1650	2-20M + 1-15M	1750	1-10M + 3-20M	1850				
5400mm	2-15M	750	1-15M + 1-20M	1300	2-20M	1600	1-15M + 2-20M	1800	3-20M	1950	1-15M + 3-20M	2050						
6000mm	2-15M	1050	2-20M	1600	1-15M + 2-20M	1900	1-10M + 3-20M	2100										

NOTES:
1. Stirrup Spacing = **330 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects 10M = #4 within the USA using imperial bar sizes - 15M = #5 the following substitutions are applicable: 20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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TACOMA ENGINEERS

Table Prepared by:

LICENSED PROFESSIONAL ENGINEER D.J. TACOMA PROVINCE OF ONTARIO

200mm Thick 525mm Deep Lintels

Table No. L 8-21M

21" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
5'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	0"
6'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#5	0"
8'-0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#6	0"	1-#6	22"	1-#6	26"	1-#6	28"	1-#6	30"
10'-0"	1-#5	0"	1-#5	0"	1-#6	0"	1-#6	24"	1-#6	30"	1-#6	34"	2-#5	38"	2-#5	40"	1-#5 + 1-#6	42"
12'-0"	1-#5	0"	1-#6	0"	1-#6	28"	2-#5	36"	2-#5	42"	1-#5 + 1-#6	46"	1-#5 + 1-#6	50"	2-#6	52"	1-#4 + 2-#6	54"
14'-0"	1-#6	0"	1-#6	28"	2-#5	40"	1-#5 + 1-#6	48"	2-#6	54"	2-#6	58"	1-#4 + 2-#6	62"	1-#5 + 2-#6	64"	3-#6	66"
16'-0"	1-#6	0"	2-#5	40"	1-#5 + 1-#6	52"	2-#6	60"	1-#4 + 2-#6	66"	1-#5 + 2-#6	70"	1-#4 + 3-#6	74"				
18'-0"	2-#5	30"	1-#5 + 1-#6	52"	2-#6	64"	1-#5 + 2-#6	72"	3-#6	78"	1-#5 + 3-#67	82"						
20'-0"	2-#5	42"	2-#6	64"	1-#5 + 2-#6	76"	1-#4 + 3-#6	84"										

NOTES:

1. Stirrup Spacing = **13"**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using metric bar sizes - the following substitutions are applicable (The smaller diameter of 10M bar has already been factored within the required steel for each scenario)

#4 = 10M
#5 = 15M
#6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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LICENSED PROFESSIONAL ENGINEER D.J. TACOMA 45439505 MAR 2 2 2006 PROVINCE OF ONTARIO

TACOMA ENGINEERS

Table Prepared by:

8" Thick
21" Deep
Lintels

Table No.

L 8-21I

E LINTEL TABLES (L8-24M)

600mm Lintel Depth

Uniformly Distributed Load KN/m

Opening Width	7.0 KN/m		10.5 KN/m		14.0 KN/m		17.5 KN/m		21.0 KN/m		24.5 KN/m		28.0 KN/m		31.5 KN/m		35.0 KN/m	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
900mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1200mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0
1500mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0
1800mm	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	0	1-15M	0
2400mm	1-10M	0	1-10M	0	1-15M	0	1-15M	0	1-15M	0	1-20M	0	1-20M	0	1-20M	600	1-20M	650
3000mm	1-15M	0	1-15M	0	1-15M	0	1-20M	0	1-20M	650	1-20M	750	1-20M	850	2-15M	900	2-15M	950
3600mm	1-15M	0	1-20M	0	1-20M	0	1-20M	800	2-15M	950	2-15M	1050	1-15M + 1-20M	1150	1-15M + 1-20M	1200	2-20M	1250
4200mm	1-20M	0	1-20M	0	1-20M	850	2-15M	1100	1-15M + 1-20M	1250	1-15M + 1-20M	1350	2-20M	1450	1-10M + 2-20M	1500	1-15M + 2-20M	1550
4800mm	1-20M	0	2-15M	800	2-15M	1150	1-15M + 1-20M	1400	2-20M	1550	1-10M + 2-20M	1650	1-15M + 2-20M	1750	3-20M	1800	1-10M + 3-20M	1850
5400mm	1-20M	0	2-15M	1100	2-20M	1450	1-10M + 2-20M	1700	1-15M + 2-20M	1850	3-20M	1950	1-15M + 3-20M	2050	4-20M	2100		
6000mm	2-15M	850	2-15M	1400	1-10M + 2-20M	1750	1-15M + 2-20M	2000	1-10M + 3-20M	2150								

NOTES:
1. Stirrup Spacing = **381 mm**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

All Stirrup End Distance measurements above are listed in mm

For metric dimension based projects 10M = #4 within the USA using imperial bar sizes - 15M = #5 the following substitutions are applicable: 20M = #6
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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Building Value.

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TACOMA ENGINEERS

Table Prepared by:

LICENSED PROFESSIONAL ENGINEER
D. TACOMA
100149505
PROVINCE OF ONTARIO

200mm Thick
600mm Deep
Lintels

Table No.
L 8-24M

24" Lintel Depth

Uniformly Distributed Load lbs/ft

Opening Width	480 lbs/ft		715 lbs/ft		955 lbs/ft		1195 lbs/ft		1435 lbs/ft		1675 lbs/ft		1915 lbs/ft		2155 lbs/ft		2395 lbs/ft	
	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.	Bottom Reinf. Steel	Stirrup End Dist.
3'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
4'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"
5'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"
6'-0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#5	0"
8'-0"	1-#4	0"	1-#4	0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#6	0"	1-#6	0"	1-#6	24"	1-#6	26"
10'-0"	1-#5	0"	1-#5	0"	1-#5	0"	1-#6	0"	1-#6	26"	1-#6	30"	1-#6	34"	2-#5	36"	2-#5	38"
12'-0"	1-#5	0"	1-#6	0"	1-#6	0"	1-#6	32"	2-#5	38"	2-#5	42"	1-#5 + 1-#6	46"	1-#5 + 1-#6	48"	2-#6	50"
14'-0"	1-#6	0"	1-#6	0"	1-#6	34"	2-#5	44"	1-#5 + 1-#6	50"	1-#5 + 1-#6	54"	2-#6	58"	1-#4 + 2-#6	60"	1-#5 + 2-#6	62"
16'-0"	1-#6	0"	2-#5	32"	2-#5	46"	1-#5 + 1-#6	56"	2-#6	62"	1-#4 + 2-#6	66"	1-#5 + 2-#6	70"	3-#6	72"	1-#4 + 3-#6	74"
18'-0"	1-#6	0"	2-#5	44"	2-#6	58"	1-#4 + 2-#6	68"	1-#5 + 2-#6	74"	3-#6	78"	1-#5 + 3-#6	82"	4-#6	84"		
20'-0"	2-#5	34"	2-#5	56"	1-#4 + 2-#6	70"	1-#5 + 2-#6	80"	1-#4 + 3-#6	86"								

NOTES:

1. Stirrup Spacing = **15"**
2. **This table to be used in conjunction with the "Design Limitations" & "Structural Engineering Analysis Report".**

For imperial dimension based projects within Canada using #4 = 10M metric bar sizes - the following substitutions are applicable #5 = 15M *(The smaller diameter of 10M bar has already been factored within the required steel for each scenario) #6 = 20M
1-#4 + 1-#5 may be substituted for 1-#6
2-#4 may be substituted for 1-#5

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TACOMA ENGINEERS

Table Prepared by:

8" Thick
24" Deep
Lintels

Table No.

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