

Practical Activity 1:

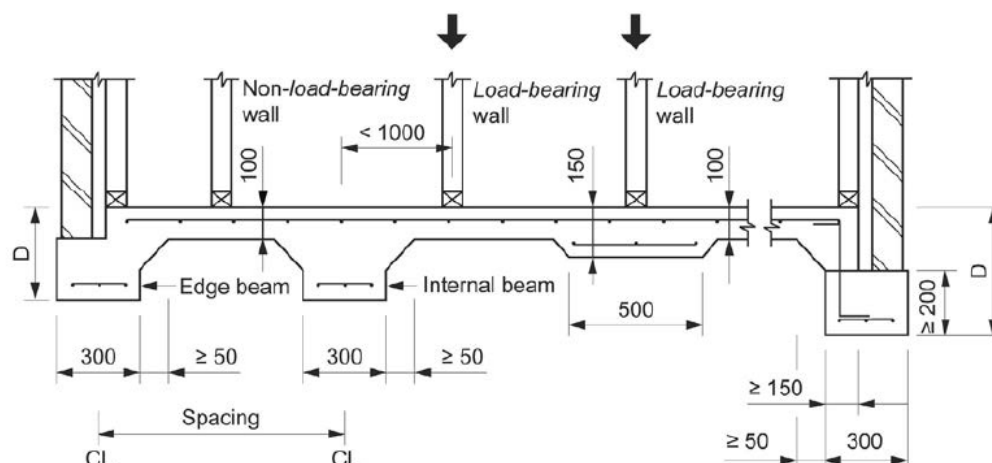
Answer:

1. In accordance with NCC Vol 2 section 3.2.4.1, the concrete slab type and specification for the ground slab that will be suitable for the structure over a Class S soil type is as below:

Table 3.2.5.4b Reinforcement for stiffened raft footings for Class S sites

Type of construction	Depth (D) (mm)	Bottom reinf.	Max. spacing c/l to c/l	Slab fabric where slab length <18 m	Slab fabric where slab length <25 m	Slab fabric where slab length <30 m
Clad frame	300	3-L8TM	N/A	SL72	SL82	SL92
Articulated masonry veneer	300	3-L8TM	N/A	SL72	SL82	SL92
Masonry veneer	300	3-L11TM	N/A	SL72	SL82	SL92
Articulated full masonry	400	3-L11TM	N/A	SL72	SL82	SL92
Full masonry	450	3-L11TM	5.0 (m) ^{Note 2}	SL82	SL82	SL92

Figure 3.2.5.3a Footing slab and stiffened raft slab details for Class A and S sites



Notes to Tables 3.2.5.4a to 3.2.5.4b:

- a) Internal and external edge beams must be arranged to form an integral structural grid (see clauses 5.3.8 and 5.3.9 of AS 2870).
- b) A 10% increase in spacings is permitted where the spacing in the other direction is 20% less than that specified.
- c) Where external beams are wider than 300 mm, an extra bottom bar or equivalent of the same bar size is *required* for each 100 mm additional width.
- d) Where a reinforced *single leaf masonry* wall is constructed directly above and structurally connected to a concrete edge beam, the beam may be reduced to 300 mm wide by 300 mm deep and reinforced with 3-L8TM reinforcement.
- e) Alternative reinforcement sizes must comply with AS 2870.
- f) Internal beam details and spacings must comply with Figure 3.2.5.3a or Figure 3.2.5.3b. At a re-entrant corner where an external beam continues as an internal beam, the internal beam details must be continued for a length of 1m into the external beam.

2. Framing material, Stub dimension/specing for the wall, level 1 and roof

In accordance with NCC Vol 2 section 3.4.3.0 and AS1860.2.

Performance Requirement P2.1.1 is satisfied for a timber frame if it is designed and constructed in accordance with the following, as appropriate:

- a) Design of timber structures: AS 1720.1.
- b) Design of nailplated timber roof trusses: AS 1720.5.
- c) Residential timber-framed construction – non-cyclonic areas: AS 1684.2.
- d) Residential timber-framed construction – cyclonic areas: AS 1684.3.
- e) Residential timber-framed construction – non-cyclonic areas (simplified): AS 1684.4.
- f) Installation of particleboard flooring: AS 1860.2.

In Queensland after 3.4.3.0(f) insert Qld 3.4.3.0(g) as follows:

Qld 3.4.3.0(g) Timber Species

g) Timber Species

In addition to sub-clauses (a) to (f) above, timber used for structural purposes must be a species scheduled for the appropriate use in Schedules A, B or C of Book 2 of the December 2017 version of the “Queensland Government, Department of Agriculture, Fisheries and Forestry - Construction timbers in Queensland, Book 1 and Book 2: Properties and specifications for satisfactory performance of construction timbers in Queensland - Class 1 and 10 buildings (Houses, carports, garages, greenhouses and sheds)”.

In accordance with NCC Vol 2 section 3.8.6.3 and AS1860.2

Figure 3.8.6.3 Sound insulation between units — Double stud wall configuration

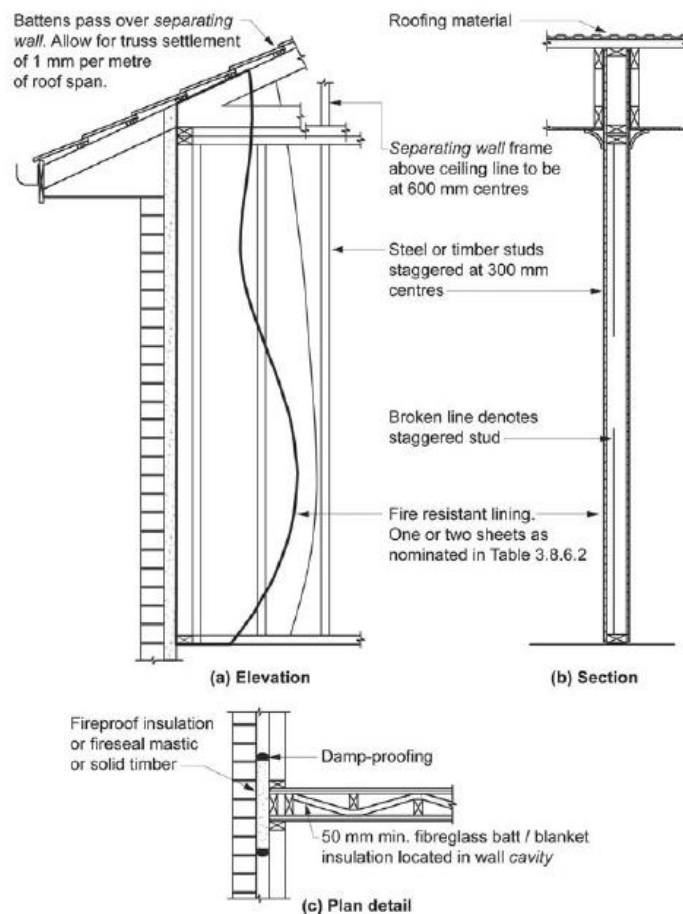


Figure 3.4.4.1 Bearer supporting a timber floor and non-loadbearing stud wall

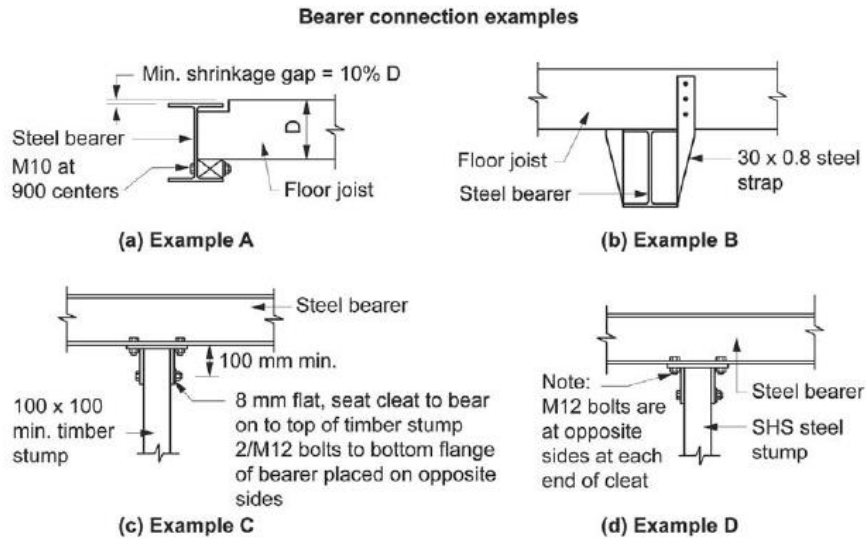


Table 3.4.4.1a Maximum acceptable bearer span (single span) - bearers supporting a timber floor and non-load-bearing stud wall

Steel Section	1.8 EBS	2.4 EBS	3.0 EBS	3.6 EBS	4.2 EBS
125TFB	4.1 m	3.8 m	3.6 m	3.4 m	3.2 m
180UB16.1	5.1 m	4.7 m	4.5 m	4.3 m	4.1 m
200UB18.2	5.6 m	5.2 m	5.0 m	4.7 m	4.6 m
250UB25.7	6.8 m	6.4 m	6.0 m	5.8 m	5.6 m
250x150x9.0 RHS	7.7 m	7.1 m	6.7 m	6.4 m	6.2 m
250x150x5.0 RHS	6.8 m	6.3 m	5.9 m	5.7 m	5.5 m
310UB32.0	7.9 m	7.3 m	7.0 m	6.7 m	6.4 m
125x75x2.0 RHS	3.1 m	2.8 m	2.6 m	2.5 m	2.4 m
125x75x3.0 RHS	3.5 m	3.2 m	3.0 m	2.8 m	2.7 m
150x50x2.0 RHS	3.4 m	3.1 m	2.8 m	2.7 m	2.5 m
150x50x3.0 RHS	3.7 m	3.4 m	3.2 m	3.0 m	2.9 m
100TFC	3.2 m	2.9 m	2.7 m	2.6 m	2.4 m
150PFC	4.8 m	4.5 m	4.2 m	4.0 m	3.9 m
180PFC	5.4 m	5.1 m	4.8 m	4.6 m	4.4 m
200PFC	5.9 m	5.5 m	5.2 m	5.0 m	4.8 m
250PFC	7.2 m	6.7 m	6.4 m	6.1 m	5.9 m
300PFC	8.1 m	7.6 m	7.2 m	6.9 m	6.6 m

Notes to Table 3.4.4.1a:

- 1) 1.EBS = Effective bearer spacing (m).
- 2) 2.Steel is base grade.
- 3) 3.Load must be evenly distributed along the member.
- 4) 4.See 3.4.2.3 for provisions that apply to suspended floors in single-storey and ground floor construction of suspended steel floor frames.
- 5) 5.Effective bearer spacing is a measure of the width of the

Practical Activity 2:

Answer:

A site plan is required to prevent material from weather, pest and theft. Here is a few requirements need to be meet:

1. Before the delivery, the correct quantity and condition of the delivery is required to be confirmed with suppliers and logistic company if materials like timber, steel and windows are in perfect condition.
2. When those materials arrived at site, inspect all packages and check contents are in perfect condition.
3. Bringing the sale order when checking the materials when they are delivered to site.
4. To procurement timber and windows and any raw materials, the timeframe of those materials to be required should be considered and need to confirm with schedule and the special storage room should be installed or built up on site.
5. To check the schedule and discuss with suppliers and subcontractors to ensure that those materials can be arrived on time and installed on time as well

Practice Activity 3: QA Checklist for timber framing and concrete slab construction

1. QA list for timber framing

ABC CONSTRUCTION PTY LTD TIMBER FRAMING CHECKLIST					
	Department/Contractor:	Project/Location:			
	Inspector:	Date of Inspection:			
Item	REQUIREMENT/CRITERIA	YES	NO	COMMENTS	ACTION REQUIRED
1	Check plans and contract documents for any variations				
2	Room set outs and wall locations consistent with approved plans				
3	Wall frame plumb and straight sufficient to receive wall finishes				
4	Tie down fixings to slab at least 50mm from slab edge				
5	Bottom plate not overhanding slab edge by more than 10mm.				
6	All wall bracing in position as required on approved plans and properly fixed including tie-down rods. Nails not overdriven				
7	Roof and truss point loads supported and blocked if required				
8	Truss layout consistent with truss plan and fixed at correct centres				
9	Trusses plumb (max allowable 50mm or heights/50) and not bowed section/200				
10	Saddle trusses properly fixed to supporting truss top chord				
11	Roof tie down in accordance with approved plans and truss manufactures requirements				
12	Strengthening for installation of solar hot water system installed				
13	Roof steel bracing properly installed in accordance with truss plan. Where fixed to wall frame bracing nailed flat to avoid interfering with wall sheet or cornice				
17	Truss bottom chord bracing installed where suspended ceiling's or metal furring channel ceiling battens used				

2. QA List for Concrete Slab Construction

ABC CONSTRUCTION PTY LTD CONCRETE SLAB CHECKLIST					
Department/Contractor:		Project/Location:			
Inspector:		Date of Inspection:			
Item	REQUIREMENT/CRITERIA	YES	NO	COMMENTS	ACTION REQUIRED
1	EXCAVATION				
1.1	Is the excavation correct in size?				
1.2	Is the base correctly compacted?				
1.3	Is the excavation dry?				
1.2	Is selected fill/blinding concrete in place?				
2	FORMWORK				
2.1	Is bracing adequate?				
2.2	Has mold oil been applied evenly and thoroughly?				
2.3	Has proper access been provided?				
2.4	Is horizontal alignment correct?				
2.5	Is access adequate?				
3	REINFORCEMENT				
3.1	Are the rebars free from excessive rust?				
3.2	Is the spacing correct?				
3.3	Is the concrete cover as per specs?				
3.4	Are all the wires in place and correctly tied?				
3.5	Are there adequate spacers/chairs at specified intervals?				
3.6	Correct number of bars in the reinforcement				
3.7	Are all the bars of the correct size?				
3.8	Are the starter bars in the correct position?				
3.9	Are the starter bars and splices the correct size and number?				
4	GENERAL				
4.1	Is the pour site clean and free from all debris?				
4.2	Are there adequate vibratory poker on site?				
4.3	Is curing material available on site?				
4.4	Have slump tests and concrete sampling been organized?				
4.5	Has adequate lighting been organized?				
4.6	Are stop blocks on site?				
4.7	Is the access safe?				
4.8	Other/Special Requirements				