



ADVANCED LEVEL ACCESS COMPETENCY ASSESSMENT

QUESTION 1

When would you select to use "General Structural Timber Design" as the design platform (Refer Project Data screen)?

Answer 1

- ☐ A. The project is not a Class 1 or Class 10 building as defined by the Building Code of Australia and is not generally within the bounds of AS1684 Residential Timber-Framed Construction.
- ☐ B. The project is a Class 1 or a Class 10 building as defined by the Building Code of Australia.
- ☐ C. Generalised Design of traditionally evolved timber framing system for house construction is required.

QUESTION 2

Identify one way in which design settings for moist or high temperature environments can be adjusted?

Answer 2

- ☐ A. Click Humidity & Temperature under the tools menu to adjust the moisture content and the j2 factor for high moisture environments.
- ☐ B. Click Humidity & Temperature under the tools menu to adjust the moisture content and the j2 factor for timber which has had surface wetting and dried out.
- ☐ C. Click Humidity & Temperature under the tools menu to adjust the moisture content and the j2 factor for better design outcomes.

QUESTION 3

Which span dimension is generally the basis of AS1684 tables?

Answer 3

- ☐ A. Distance between centrelines of support.
- ☐ B. Distance inside to inside of supports.
- ☐ C. None of the above.

QUESTION 4

When should "Cat 2 Primary Structural Element" be selected for design of members?

Answer 4

- ☐ A. Primary structural members in structures other than houses or elements in houses for which failure would be unlikely to affect an area greater than 25m².
- ☐ B. Primary structural members in structures other than houses or elements in houses for which failure would be likely to affect an area greater than 25m².
- ☐ C. When strength does not control the design outcome.



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QUESTION 5

What is the relevance of the “Wind loads” settings on the “PROJECT DATA” screen?

Answer 5

- ☐ A. The “N” and “C” categories listed are simply listed on the report to tell the building certifier what region the structure is to be built. They are not used in design at all.
- ☐ B. One of the wind load categories must be selected for the member to design. The selected wind category is irrelevant to design.
- ☐ C. Selection of the correct wind load category is essential for application of appropriate wind loads and obtaining accurate member design solutions.

QUESTION 6

In the case of a “Intermediate Beam” member design, when should the “Continuous Rafters Over” option be ticked and what will result from this action?

Answer 6

- ☐ A. “Continuous Rafters Over” should be ticked when there is more than one rafter supported on the roof beam. This will result in the rafter load being applied to the full length of the roof beam.
- ☐ B. “Continuous Rafters Over” should be ticked when the rafters above span continuously across the roof beam, ie. they are not cut or otherwise joined over the support. This will not affect the design loads or result, but will transfer the information to the report.
- ☐ C. “Continuous Rafters Over” should be ticked when the rafters above span continuously across the roof beam, ie. they are not cut or otherwise joined over the support. This will have the effect of increasing the Dead Load by a factor of 1.25.

QUESTION 7

A dynamic vibration check should normally be included in the design of which one of the following member applications?

Answer 7

- ☐ A. Hip rafter.
- ☐ B. Floor joist.
- ☐ C. Wall common stud.



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QUESTION 8

What is the Characteristic bending strength value (Bending Stress, f'_b) for Hyne Beam 15 as reported in the Engineering Properties library of HD7 (Hint go to the "Product Control" screen)?

Answer 8

- ☐ A. 4.2 MPa.
- ☐ B. 38 MPa.
- ☐ C. 40 MPa.

DATA FOR QUESTIONS 9-11

Design a floor joist using E13 LVL to the following criteria:

- Basis for design: Residential Design only to AS1684
- Two spans, span 1= 6000mm, span 2= 6000mm (Inside to inside supports) Supported on 70mm wall frames
- Use standard default domestic loading and deflection criteria Floor= particleboard (30)
- Lining= 10mm Plasterboard (12)
- Bottom edge restraint= ceiling lining direct Floor live load= General (1.5 kPa, 1.8 kN) Floor joist spacing= 450mm
- Floor dynamics: Select AS1684 Dynamics Check
- Member Importance= CAT 1

QUESTION 9

What is the smallest E13 LVL section product allowable for this application?

Answer 9

- ☐ A. 240 × 45 E13 LVL
- ☐ B. 290 × 35 E13 LVL
- ☐ C. 300 × 35 E13 LVL

QUESTION 10

For the E13 LVL design selected for Question 9 above, what is the critical design characteristic, load combination and Stress Ratio according to the design analysis report selected by clicking the DESIGN ANALYSIS Tab?

Answer 10

- ☐ A. Moment (N.m) under load combination 1.2G+1.5Qf with stress ratio= 50.2 %.
- ☐ B. Deflection (mm) under load combination Of on M1 or M2 with stress ratio= 98.8 %.
- ☐ C. Deflection (mm) under load combination Qf on M1 with stress ratio= 100 %.



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QUESTION 11

For the E13 LVL designed above, what is the maximum Support Reaction for 1.2G+1.5Qf strength load combinations and the Support Number at which it occurs, according to the Engineering Report?

Answer 11

- ☐ A. Vertical reaction 9.853 kN at support number 1.
- ☐ B. Vertical reaction 9.968 kN at support number 2.
- ☐ C. Vertical reaction 5.297 kN at support number 2.

QUESTION 12

What is the deflection under dead load for the smallest allowable 45mm wide T3 Green MGP10 for a Deck Joist at 450mm centres and spanning 3500mm to centreline with the following loads?

- PR Decking (25) Self Weight
- No Ceiling Lining
- Balcony (2.0, 1.8) live loads
- Supported Each End on a 65mm Beam

Answer 12

- ☐ A. 10.8mm for 140 × 45 Hyne T3 Green MGP10.
- ☐ B. 7.8mm for 190 × 45 Hyne T3 Green MGP10.
- ☐ C. 4.0mm for 240 × 45 Hyne T3 Green MGP10.

QUESTION 13

What is the size and deflection under dead load for the 65mm wide straight Hyne Beam 15 bearer to support the above Deck Joist? The Bearer will span 4000mm 13000mm continuous to centreline and will be above ground and exposed to the weather. Bearer supported on 70mm at all 3 points

Answer 13

- ☐ A. 195x65 Hyne Beam 15 GLT Straight H3 Treated 10.9mm deflection.
- ☐ B. 230x65 Hyne Beam 15 GLT Straight H3 Treated 6.7mm deflection.
- ☐ C. 195x65 Hyne Beam 15 GLT Straight H3 Treated 8.4mm deflection.



HYNE DESIGN 7

ADVANCED LEVEL ACCESS COMPETENCY ASSESSMENT

I the undersigned confirmed that the responses given in the Hyne Design 7 – Advanced Level Access Assessment is my own work and not a collaboration with others.

Name: Company:

Date: Signed:

Position:

For Hyne & Son Pty Ltd: Date:

Please attach this pdf and email to:

info@hyne.com.au

Hyne Timber will then issue a certificate of competency based on successful completion of this assessment.