What is Wood and Timber Construction?

Worksheet

Timber construction is a building method that uses wood - solid lumber, glulam, or engineered panels like CLT - as the main structural and finish material, framed as posts, beams, trusses or panels.

Questions

1. Which mass-timber panel is built from layers of solid-sawn lumber glued at 90 to each other, used for floors and walls?

A) Glulam
B) CLT (cross-laminated timber)
C) Particleboard
D) Plywood

2. What is the main advantage of glue-laminated timber (glulam) over solid sawn lumber?

A) Lower cost only
B) Can span much longer distances with fewer defects
C) No need for wood at all
D) It cannot burn

3. Standard stud spacing in North American light-frame walls is:

A) 8 inches
B) 12 inches
C) 16 inches
D) 36 inches

4. Why does mass timber perform relatively well in fire compared to steel?

A) Wood doesn't burn
B) A charred outer layer insulates and slows further burning
C) Timber buildings have no fire code
D) Steel always ignites first

5. A builder frames a house wall with 2x6 studs spaced 16 inches (400mm) on center. Why this spacing?

6. A glulam beam spans 8 meters over a community hall roof. What property allows this span beyond solid lumber?

7. The Mjstrnet tower in Norway rises 85.4 m using mass timber. What construction system enabled this height?

8. Define: What is timber construction?

9. Define: What is glulam?

10. Define: What is CLT?

Answer Key

1. B) CLT (cross-laminated timber) - CLT layers alternate grain direction 90, giving strength in both directions.

2. B) Can span much longer distances with fewer defects - Laminating removes natural defects and combines boards for far greater spans.

3. C) 16 inches - 16 in (406mm) o.c. matches standard sheathing panel dimensions.

4. B) A charred outer layer insulates and slows further burning - Large timber sections char on the surface, insulating the core wood.

5. Standard stud spacing balances structural strength and material cost 16 in (406mm) o.c. matches standard 4x8 ft sheathing panel dimensions Wider spacing (24 in) is used only with engineered sheathing for lighter loads

6. Solid lumber is limited by tree size, roughly 6m max span Glulam laminates multiple boards, removing natural defects Engineered glulam beams can span over 30m in large halls

7. Cross-laminated timber (CLT) panels form floors and walls Glulam columns and beams carry vertical loads Layered wood grain directions cancel shrinkage, giving strength comparable to concrete at a fraction of the weight

8. Building with wood - solid lumber, glulam, or CLT - as the primary structural material.

9. Glue-laminated timber: thin wood layers bonded together to form strong, long beams.

10. Cross-laminated timber: layers of lumber glued at right angles into rigid structural panels.