

WHAT DID YOU LEARN?

1. Prescriptive standards are:
 - a) just what the doctor ordered
 - b) rules of thumb that are better than engineering
 - c) legal standards that have passed the test of time
 - d) construction provisions that do not require an engineer or architect

2. Seismic retrofit construction requires an engineer or architect when:
 - a) homes are built over slopes steeper than 3:1
 - b) foundation walls are constructed with unreinforced masonry
 - c) there are more than four dwelling units in a structure
 - d) balloon framing exists
 - e) all of the above

3. The following statement is false:
 - a) the closer you are to an earthquake source, the greater force you will feel
 - b) soil and rock formations under a structure can amplify earthquake forces to a building
 - c) the more the ground accelerates, the greater forces the building will encounter
 - d) buildings that survived past earthquakes do not need to be retrofitted

4. The following statement is false:
 - a) the more a building weighs, the greater earthquake forces it will experience
 - b) the taller a building is, the more the roofline will move during an earthquake
 - c) reroofing can not change the seismic performance of a building
 - d) parts of buildings that are not tied together can vibrate apart during an earthquake

5. The following statement is false:
 - a) the greatest earthquake force occurs at the base of the structure
 - b) the cripple wall is usually the weakest part of the structure
 - c) more earthquake forces exist in first story walls than in second story walls
 - d) the length of plywood determines the length of a shear wall

6. Shear walls:
 - a) provide strength and stiffness like wood I-beams to resist uplift and shear
 - b) require holdowns when their weight cannot resist uplift
 - c) work best with continuous footings underneath them
 - d) are only one part of a complete horizontal force-resisting system
 - e) all of the above

7. Retrofit work requires:
- a) evaluation of the condition and species of the existing framing lumber
 - b) marking location of studs for sheathing nailing
 - c) pre-drilling hard dense lumber
 - d) providing underfloor ventilation when missing or insufficient
 - e) all of the above
8. The following statement is false:
- a) oriented strand board expands more than plywood when wet
 - b) all 15/32 and 1/2 inch Structural 1 plywood is five-ply
 - c) Structural 1 panels are stronger and stiffer grades of wood structural panels
 - d) you cannot substitute oriented strand board for plywood without approval
 - e) plywood and OSB can be installed vertically or horizontally
9. The recommended fastener for shear wall sheathing is:
- a) full headed common nails
 - b) gun nails
 - c) 8d or 10d
 - d) cooler, box, or sinker nails
 - e) wood screws
10. The following is false:
- a) sheathing nails with larger edge distances in framing members produce stronger shear walls
 - b) sheathing nails with larger shank diameters and head sizes produce stronger shear walls
 - c) sheathing nails with 3/4-inch edge distance on the sheathing makes stronger shear walls than shear walls with 3/8-inch edge distances
 - d) sinking the nail head below the surface of the sheathing does not reduce the strength of the shear wall
11. The following locations on shear walls require nails at the closer edge distance spacing:
- a) uppermost top plate
 - b) sill or sole plate
 - c) all holdown studs
 - d) all panel edges and around all reinforced openings
 - e) all of the above
12. The following are good holdown installation practices:
- a) countersinking nuts and washers in end posts
 - b) drilling 3/4-inch holes for 5/8-inch bolts
 - c) installing drilled-in-anchors for holdowns the same depth as for sill plate anchoring
 - d) following both the plans and the manufacturer s installation instructions
 - e) allowing small kinks in metal straps

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13. Shear connections are:
- a) connections from the top plate to the shear wall
 - b) connections from the shear wall to the floor framing below
 - c) connections from the sill plate to the top of the foundation wall
 - d) connections that prevent any two parts of the building from sliding past each other
14. The following statement is false:
- a) expansion and adhesive anchors must be located a minimum distance from any edge of the concrete
 - b) adhesive anchors require clean holes and threaded rods
 - c) plate washers increase the strength of the sill plate connection
 - d) the depth of the all-thread rod and adhesive in the concrete determines the strength of a retrofit holdown
 - e) lag screws do not have to be pre-drilled if they do not split the wood
15. To be an effective part of the horizontal force-resisting system, foundations should:
- a) be free of excessive cracking or deterioration
 - b) be continuous around the perimeter of the building
 - c) have enough strength, depth and weight to resist shear and uplift forces
 - d) be evaluated by an architect or engineer
 - e) a & c
16. The following statement is false:
- a) porches and patio covers should be well-connected to the rest of the house
 - b) unstrapped electric and gas water heaters can cause fires
 - c) masonry chimneys can be retrofitted by simply adding a brace to the roof
 - d) 50% of all earthquake damage costs are non-structural in nature
17. The length of time for liability for personal injury following completion of construction is:
- a) three years for construction defects
 - b) four years for patent defects
 - c) 10 years for latent defects
 - d) until death do you part
18. A good contract should contain many things, such as:
- a) clear scope of work, completion date and how to handle changes in the work
 - b) be prepared under specific legal counsel
 - c) exculpatory provisions, price and payment schedule, & termination provisions
 - d) a loose definition of the work to allow for money-making extras
 - e) a, b & c

ANSWERS: 1-d, 2-e, 3-d, 4-c, 5-d, 6-e, 7-e, 8-b, 9-a, 10-d, 11-e, 12-d, 13-d, 14-e, 15-e, 16-c, 17-d, 18-e
