Information Section Fasteners

1. What three properties of a nail determine the holding power? Shape, size, surface

2. What material is typically used for nails? Steel

3. What are the main advantages of screws over nails? Easily withdrawn without damage, more holding power, can be tightened, neater in appearance

4. What is the range of gauge numbers for screws? 0-24

5. What are three effects of tightening a screw too much? Stripped threads, broken screw, and damaged surface

6. What materials are typically used for lag bolts? Black Iron, galvanized iron, and bronze

7. What is the purpose of the washer placed under the head of a lag bolt? Prevent damage to the surface as it is tightened

8. What is the advantage of hangar bolts over lag bolts? Nut is easily removed and replaced as shaft stays in the wood

9. What is the main difference between a self tapping and a self drilling screw? Both will cut threads but the self drilling does not require a hole to start

10. What is the main advantage of self drilling screws? No need to drill a pilot hole

11. What is the length range for regular machine screws? 12mm-100mm (1/2”-4”)

12. What is the difference between a machine screw and a machine bolt? Machine bolts are typically larger than ¼”

13. What type of thread is on a screw extractor? Left hand

14. What is a castellated nut? Slotted on top so a cotter pin can be inserted to lock it in place

15. What are cap nuts? Smooth round finished head with no sharp edges

16. What is an elastic stop nut? Built-in fiber or composite washer that presses against the threads so it will not loosen up

17. How does compressive strength affect holding power for fasteners? Higher compressive strength will allow greater holding power
18. What are three ways a fastener may fail in concrete? Concrete spalls with anchor attached, anchor pulls out, or anchor breaks.

19. What is shear capacity? Ability to withstand a load at right angles.

20. What is the rule of spacing for anchors embedded in concrete? Twice the minimum embedment.

21. What is the main advantage of a star expansion fastener? Can be reused (toggle bolt cannot).

22. What are some precautions for using fiber screw anchors? Light loads, no extreme heat.

23. What is one application where lead screw anchors would be recommended? High temperature or large swings in temperature.

24. What is one application where white bronze screw anchors would be recommended? High temp in masonry.

25. What is one application where plastic screw anchors would be recommended? Moisture or chemicals might affect metal anchors.

26. How are beam clamps fastened to the beam? Hammer.