Illinois Society of Professional Engineers - University of Illinois College of Engineering Professional Engineer On-Line Seminars

INSTRUCTIONS:

1. View the on-line seminar.
2. Complete the quiz below.
3. Complete the "Engineer Information" section.
4. Make a copy for your records.
5. Mail the quiz along with your $20 payment (credit card information or check payable ISPE) to: ISPE, 100 East Washington Street, Springfield, IL 62701.

If you score an 80% of better on the quiz, you will receive your certificate within 4 weeks. If you fail to earn an 80% score, the quiz will be returned to you and you will have the opportunity to retake it.

Each seminar/quiz is worth 1 Professional Development Hour.

QUIZ: 04-10
TOPIC: "Self-centering steel moment-resisting frames"
PRESENTER: Maria Garlock

1. Dr. Garlock is currently a professor at which University?
   a.) University of Illinois b.) Princeton University
   c.) Lehigh University d.) Cornell University

2. The proposed design of steel frames is intended for seismic regions.
   (circle) TRUE FALSE

3. The most common way to connect steel member in a seismic region is to
   a.) bolt the members.
   b.) weld the members.

4. One objective of a "self centering" design is to have the building return to its original vertical position after severe deformation.
   (circle) TRUE FALSE

5. Dr. Garlock refers to the nature of what happens at the connection during deformation as
   a.) gapping. b.) decompression.
   c.) joint yielding.

6. Self centering systems have only been studied in steel structures.
   (circle) TRUE FALSE

7. One important topic that Dr. Garlock covers in her research is the stiffness and strength of angle connections.
   (circle) TRUE FALSE

8. According to Dr. Garlock, thicker angles are
   a.) stiffer. b.) stronger.
   c.) more fatigue resistant. d.) all of the above

9. In the subassembly tests, the strands are anchored to
   a.) stud columns at the ends. b.) a concrete wall.
   c.) a load frame.

QUIZ 04-10 CONTINUED

10. During the subassembly tests some of the pretensioned strands broke far below their ultimate strength. (circle) TRUE FALSE

11. After discussion the subassembly tests, Dr. Garlock presents
    a.) a case study similar to one of the subassembly tests.
    b.) the results of an analytical model.
    c.) proposed future work in the are of self-centering frames.

12. When designing a building with post-tensioned frames, a designer must take into account the gaps that form during deformation. (circle) TRUE FALSE

13. In the design approach for post-tensioned frames the two performance levels considered in the design objectives are (chose two)
    a.) immediate Occupancy
    b.) deformation Control
    c.) collapse Prevention

14. An important parameter in the design of post-tensioned frames is the effects of vibration in the connections. (circle) TRUE FALSE

15. In the prototype frames for the proposed design method, all of the connections are assumed to be rigid. (circle) TRUE FALSE

16. Dr. Garlock presents the results of frame analysis subject to earthquake ground motions. (circle) TRUE FALSE

17. An important parameter in evaluating the predictions verses the demands of post-tensioned frames is the amount of
    a.) failure criterions met. b.) story drift.
    c.) relative moments.

18. One benefit of post-tensioned frames is that throughout loading under the design level, the beams and columns remain elastic. (circle) TRUE FALSE

ENGINEER INFORMATION

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