SAIA SCAFFOLD & ACCESS INDUSTRY ASSOCIATION

# TUBE & CLAMP SCAFFOLD

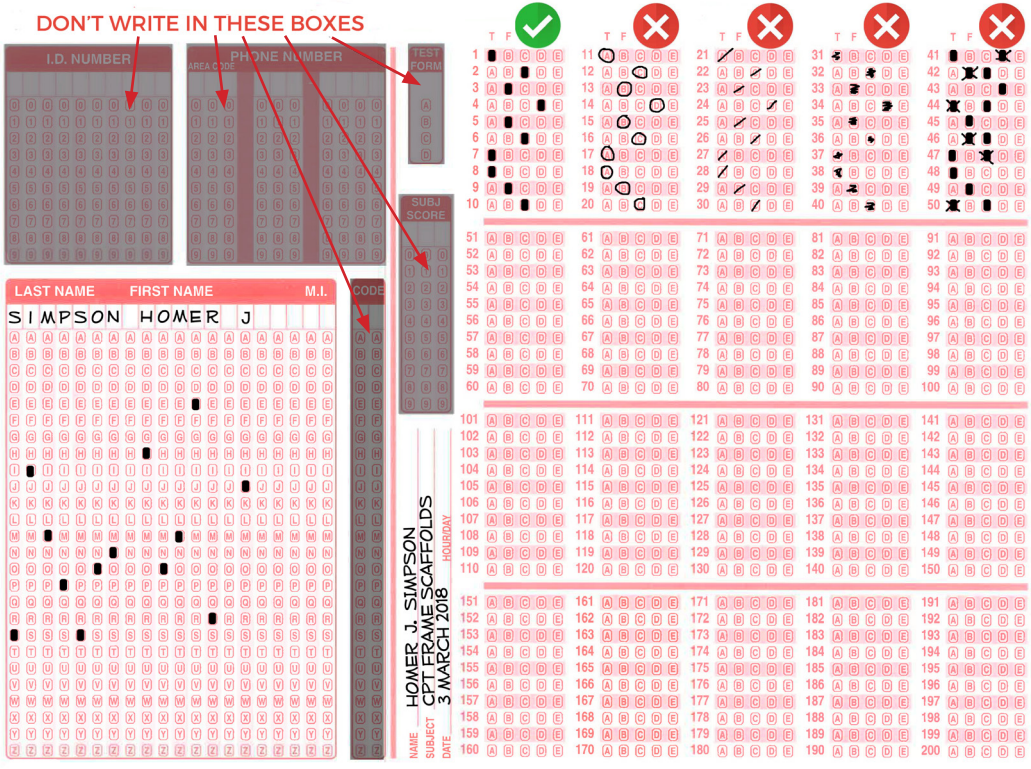
# COMPETENT PERSON TRAINING

VERSION 11 • 19

# ENDORSEMENT EXAM

# INSTRUCTIONS
# IMPORTANT!

Read these instructions carefully before you start the exam.




- Use PENCIL only
- Write your name in CAPITAL letters
- Shade in the corresponding dot below each letter in your NAME.
- Make sure to shade in the whole dot as shown.
- ERASE thoroughly any mistakes
- Make sure the row number of the dot you shade matches the question you are answering
- Take time to check that you did not miss any questions.




HAZARDS

## CHOOSE THE BEST ANSWER:

1. **PICTURE A: What serious hazard can you see in this photo?**
   a) Electrical Hazard
   b) Falling Object Hazard
   c) Unsafe Access

2. **PICTURE B: What puts this worker at risk of a serious injury?**
   a) He is wearing sneakers instead of work boots.
   b) He is not using any type of fall protection.
   c) His scaffold is not properly tied to the structure.

3. **PICTURE C: What is the most serious hazard in this image?**
   a) The toeboards are not secured to the posts.
   b) The scaffold is not sufficiently braced.
   c) The scaffold is built too close to power lines.


SCENARIO:

# ONE

An underpass in a park needs repair/replacement of bricks. The path below is made of compacted soil and crushed gravel and it is not perfectly flat or smooth. The highest part of the underpass is 12ft (3.65m), 24ft (7.31m) across and 10ft (3m) deep. The load will be two masons and a load of bricks weighing about 500lb (226.7kg). The work will be carried out over 6 weeks during which time the path will be closed to the public.

## SCENARIO SUMMARY:

| | |
|---|---|
| **WORK/ACTIVITY:** | *Replacing bricks on an underpass* |
| **TYPE & SHAPE OF STRUCTURE:** | *Curved structure 12ft (3.65m) high* |
| **CONDITIONS:** | *Outdoor use, compacted soil/crushed stone foundation* |
| **DURATION:** | *6 weeks* |
| **LOADS:** | *2 masons and 500lb load of bricks* |

SCENARIO QUESTIONS:

## CHOOSE THE BEST ANSWER

4. **Your scaffold will be lower than 10ft (3m) high. Will you require guardrails ?**
   a) Yes
   b) No
   c) Yes, if local regulations say they are required

5. **The entire length and width of the underpass must be accessible from the platform. What scaffold configuration is needed?**
   a) tower scaffold
   b) area scaffold
   c) scaffold run

6. **How will you make sure the scaffold won't "sink" into the ground under the weight of the load?**
   a) Use appropriate sized sills under the baseplates
   b) Pour a concrete foundation below the scaffold
   c) Use extra bracing to distribute the load

7. **Which type of clamp do you need to connect your diagonal braces to the vertical or horizontal tubes?**
   a) swivel clamp
   b) right angle clamp
   c) parallel clamp

8. **Why are Tube & Clamp scaffolds easily adaptable to unusually-shaped structures?**
   a) because there are no restrictions as to where connections can be made
   b) because there are many accessories available for Tube & Clamp scaffolds
   c) because steel tubes can be intermixed with aluminum tubes

9. **What is a good way to ensure the clamps that support load-bearing members won't slip if they become overloaded?**
   a) Install check clamps directly beneath and in contact with the load-bearing clamp.
   b) Attach a green tag to the scaffold to let the workers know it is safe to use.
   c) Level plumb and square the scaffold.


SCENARIO:

# TWO:

This totem pole needs to be repainted/restored. It is 59ft (18m) high. The foundation around the pole is part paving stone and further out is grass on compacted soil. There is limited space around the pole because of the gardens and hedges. The 2 artists who must restore the pole need platforms at different heights to work on the entire length of the pole. The work is expected to take about 2 weeks.

| SCENARIO SUMMARY: | |
|---|---|
| **WORK/ACTIVITY:** | *repainting/restoring totem pole* |
| **TYPE & SHAPE OF STRUCTURE:** | *59ft (18m) high wood totem pole* |
| **CONDITIONS:** | *Outdoor use. Limited space around structure. Grass & paving stone foundation.* |
| **DURATION:** | *2 weeks* |
| **LOADS:** | *men + sandblasting and painting materials & equipment.* |

SCENARIO QUESTIONS:

## CHOOSE THE BEST ANSWER

**10. Due to the unique shape of the totem pole, which scaffold type would be *least* suitable for this job?**

a) Tube & Clamp Scaffold

b) System Scaffold

c) Frame Scaffold

**11. The workers need to access all sides of the totem pole without having to move the scaffold. What is the best configuration to build?**

a) Circular Scaffold

b) Area Scaffold

c) Scaffold Run

**12. What is the the purpose of the vertical posts?**

a) To transfer the platform load to the ground

b) To support the platform

c) To resist or reduce lateral forces

**13. What is the proper way to attach a wedge-type clamp to a post?**

a) The wide end of the wedge should be at the bottom and driven upward

b) The wide end of the wedge should be at the top and driven downward

c) The wedge must be driven in very deeply to make sure it is secure

**14. The workers will have tools and equipment on the platform. What do you need to prevent these from slipping or falling off?**

a) Bottom rails

b) Decks with non-slip surface

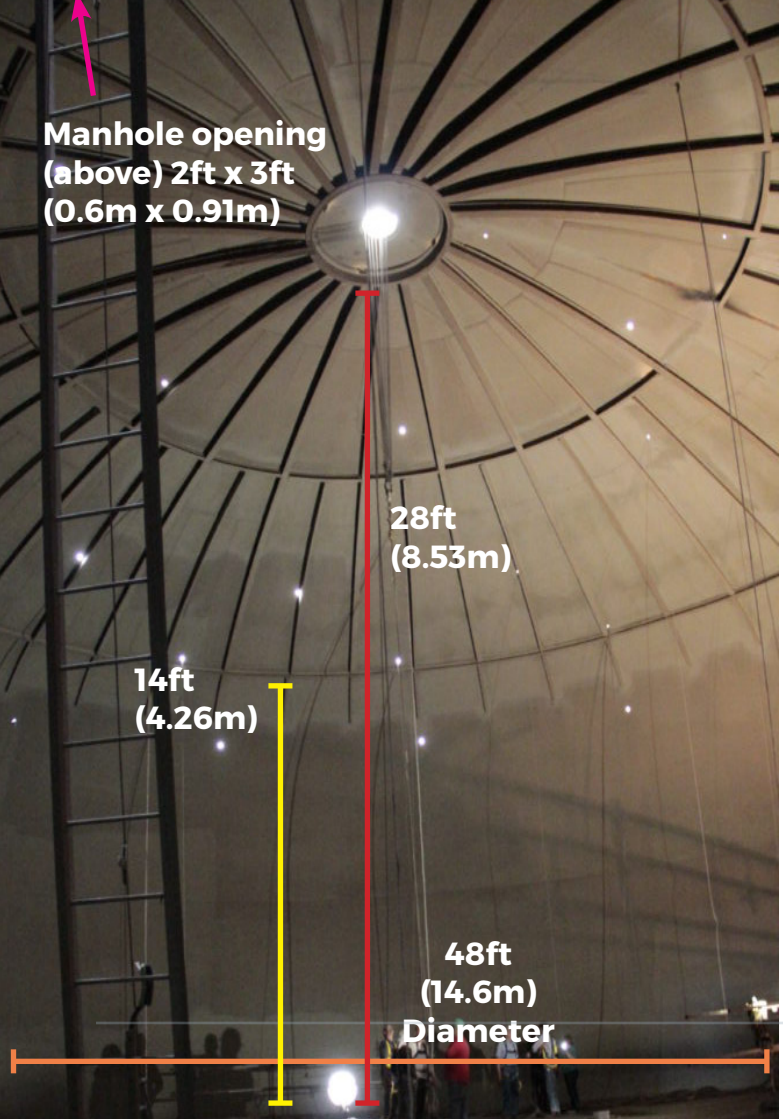
c) Toeboards

**15. What should be done first after your scaffold is completely built?**

a) The scaffold should be inspected by the Competent Person to ensure it is safe to use.

b) Attach a green tag to the scaffold to let the workers know it is safe to use.

c) Level plumb and square the scaffold.




SCENARIO:

# THREE:

The city's water storage tank must be repaired, cleaned and sanitized after the roof was damaged in a storm. The roof is 28ft (8.53m) above the floor at the center and 14ft (4.26m) at the walls. The tank is 48ft (14.6m) diameter. The only way to get inside the tank is through a 2ft x 3ft (0.6m x (0.91m) manhole in the side of the tank and climbing down a ladder. The scaffold must be built inside the tank. It must support 8 men and cleaning/painting equipment plus roof repair materials and tools. The workers will need to be able to access the whole roof at the same time. The job will take 3 months.

## SCENARIO SUMMARY:

| | |
|---|---|
| WORK/ACTIVITY: | *Repair and cleaning* |
| TYPE & SHAPE OF STRUCTURE: | *Water tank 28ft (8.53m) high and 48ft (14.6m) diameter* |
| CONDITIONS: | *Interior, smooth flat concrete foundation* |
| DURATION: | *3 months* |
| LOADS: | *Cleaning/painting equipment, roof repair materials and 8 workers* |

SCENARIO QUESTIONS:

## TRUE OR FALSE

**16. Tube & Clamp scaffolds are often used for round structures.**

a) True

b) False

**17. Tube & Clamp scaffolds can be built around and in unusually-shaped structures because connections can be made anywhere along the tube.**

a) True

b) False

**18. The concrete foundation in this water tank won't be able to support the anticipated loads.**

a) True

b) False

**19. Tube & Clamp Scaffold equipment is suitable for spaces with limited access.**

a) True

b) False

SCENARIO QUESTIONS:

## CHOOSE BEST ANSWER

**20. You can't attach scaffold ties to the walls of the tank. What can you do to ensure the scaffold will be stable?**

a) Extend the width of the scaffold base with buttresses.

b) Screw the baseplates to the foundation to anchor the scaffold.

c) Attach horizontal diagonal braces in every third bay.

**21. You will use a scaffold hoist to get components to the upper lifts. What precautions must you take?**

a) Install a canopy structure beneath the scaffold in case any equipment falls.

b) Make sure the hoist loads don't tip or overload the scaffold.

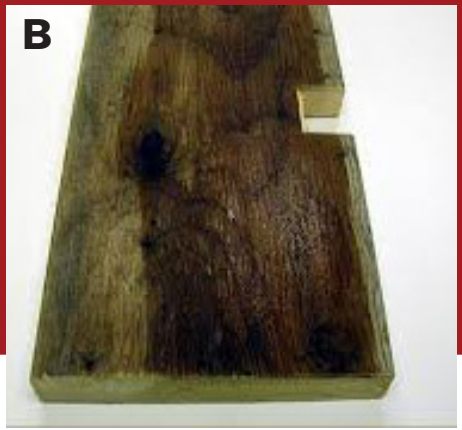
c) Make sure the hoist uses 16 gauge (1.29 mm diameter) wire ropes.

**22. How will you determine the bracing requirements for the Tube & Clamp scaffold you need to build?**

a) Follow manufacturer's instructions and/or local regulations.

b) Brace every third lift and every second bay horizontally.

c) Bracing locations should coincide with tie-in points.



## USE IT OR LOSE IT?

*Inspect the Tube & Clamp Scaffold components in the pictures above and read the questions below and decide if it is safe to use.*

**23. PICTURE A: There is some duct tape around one of your tubes. Is this tube safe to use?**

a) YES

b) NO

**24. PICTURE B: This scaffold plank has a notch cut out of it. Is it safe to use?**

a) YES

b) NO

**25. PICTURE C: There is a white greasy substance on this clamp. Should you use it?**

a) YES

b) NO