

To receive AIA/CES credit, you are required to read the additional online text, which can be found at <http://construction.com/CE/articles/0709kone-1.asp>
The quiz questions below include information from this online reading.

Program title: **“New Elevator Technology: The Machine Room-Less Elevator” (09/07, page 169)**. AIA/CES Credit: This article will earn you one AIA/CES LU hour of health, safety, and welfare credit. (Valid for credit through September 2009). **Directions:** Refer to the Learning Objectives for this program. Select one answer for each question in the exam and fill in the box by the appropriate letter. A minimum score of 80% is required to earn credit. **To take this test online, go to construction.com/CE/**

LEARNING OBJECTIVES

After reading this article, you should be able to:

- Compare the features and benefits of both traditional and new elevator technology such as the Machine Room-Less elevator.
- Understand the design requirements for integrating new elevator technology within new and existing buildings.
- Evaluate how different elevator technologies impact energy efficiency and sustainable building design.

Questions

1. Traditional passenger elevators generally employ the following two different hoist mechanisms:

- a. Hydraulic and traction
- b. Geared traction and machine room-less
- c. In-ground piston and above ground piston
- d. Machine room-less and gearless traction

2. An in-ground hydraulic elevator typically requires a

- a. pair of hydraulic jacks.
- b. machine room.
- c. counter weights.
- d. a hole below the bottom landing.

3. A gearless traction elevator operates by

- a. hydraulic fluid powering a piston.
- b. a motor rotating the sheaves directly.
- c. a rotating sheave driven by a counterweight.
- d. a machine mounted on guide rails.

4. The drawbacks of the traditional hydraulic elevator include:

- a. cannot operate above three floors.
- b. high installation costs.
- c. requiring an overhead machine room.
- d. limited speed and performance.

5. Safety requirements for Machine Room-Less elevators are

- a. not yet covered by a national code.
- b. adopted by all local and state code authorities.
- c. covered by ASME A17.1/CSA B44-2007.
- d. exist only in the United States.

6. Elevators powered by a permanent magnet synchronous motor (PMSM)

- a. require a separate machine room.
- b. have higher energy consumption than traditional motors.
- c. require less energy to start than traditional motors.
- d. use oil.

7. Machine Room-Less elevators

- a. are rarely found in Europe and Asia.
- b. require the same space as traction elevators.
- c. always have the machine mounted on the rails.
- d. use 40 percent to 60 percent less energy than hydraulic or geared traction elevators.

8. When installing a Machine Room-Less elevator architects should be aware that:

- a. there are no weight limits on interior cab design.
- b. all product lines have similar attributes and dimensions.
- c. the high-horsepower machine requires heavy-duty wiring.
- d. building requirements differ for different product manufacturers.

9. MRL control rooms

- a. may be 400 wire feet from the machine.
- b. may be 100 wire feet from the machine.
- c. must have their own adjacent room.
- d. must be integrated in the hoistway on the top landing.

10. MRL machines can be

- a. supported by beams at the top of the hoistway.
- b. mounted on guide rails.
- c. mounted in the overhead space.
- d. all of the above

Last Name	First Name
<hr/>	<hr/>
Job Title	
<hr/>	
Firm Name	
<hr/>	
Address	
<hr/>	
City	State
<hr/>	<hr/>
Tel.	Fax
<hr/>	<hr/>
E-mail	
<hr/>	
AIA ID Number:	Completion date (M/D/Y):
<hr/>	<hr/>
<p>Check one: <input type="checkbox"/> \$10 Payment enclosed. [Make check payable to McGraw-Hill Construction and mail to: Continuing Education Certificate, PO Box 5753, Harlan, IA 51593-1253.] For customer service, call 877/876-8093.</p> <p>Charge: <input type="checkbox"/> Visa <input type="checkbox"/> Mastercard <input type="checkbox"/> American Express</p>	
Card#	
<hr/>	
Signature	Exp. Date
<hr/>	<hr/>

Check below:

To register for AIA/CES credits: Answer the test questions and send the completed form with questions answered to address at left, or fax to 888/385-1428.

For certificate of completion: As required by certain states, answer test questions, fill out form, and mail to address at left, or fax to 888/385-1428. Your test will be scored. Those who pass with a score of 80% or higher will receive a certificate of completion.

Material resources used: Article: This article addresses issues concerning health and safety.

I hereby certify that the above information is true and accurate to the best of my knowledge and that I have complied with the AIA Continuing Education Guidelines for the reported period.

Signature _____ **Date** _____

097SPONA



KONE is a world-leading manufacturer of sustainable, energy-efficient elevators, escalators and autowalks. KONE is a service company known worldwide as a technology leader with the most innovative products and service methods in the elevator and escalator industry.
kone.com