

Learning to LEED: Day 2
Indoor Environmental Quality Quiz

1. Number of Prerequisites in the Indoor Environmental Quality category: _____
Number of Credits in the Indoor Environmental Quality category: _____
Number of Points in the Indoor Environmental Quality category: _____

2. Within the Indoor Environmental Quality category, which of the following credits can only be submitted during the construction phase of the project? (Choose two.)
 - a. EQc1, Outdoor Air Delivery Monitoring
 - b. EQc2, Increased Ventilation
 - c. EQc3, Construction IAQ Management Plan
 - d. EQc4, Low-Emitting Materials
 - e. EQc5, Indoor Chemical & Pollutant Source Control
 - f. EQc6, Controllability of Systems

3. Match the following statements with their respective points:
 1. EQc8.1, Daylighting & Views, Daylight 75% of Spaces
 2. EQc8.2, Daylighting & Views, Views for 90% of Spaces
 - a. If the percentage of floor area in a private office experiencing [daylight or direct line of sight] is 75% or greater, the entire square footage of the room may count toward the requirement for the point
 - b. Draw a horizontal line at 42"
 - c. In ALL cases, only the square footage meeting the minimum requirements of the point may be counted toward its achievement
 - d. Take measurements on a 10-foot grid for all occupied spaces

4. In order to achieve EQc3.1, Construction IAQ Management Plan, During Construction, permanently installed air handlers during the construction and pre-occupancy phases must have a filtration media of at least MERV _____.

In order to achieve EQc5, Indoor Chemical & Pollutant Source Control, air filtration media installed prior to occupancy must provide at least MERV _____.

5. Which of the following requirements are paths of compliance to achieve EQp2, Environmental Tobacco Smoke (ETS) Control? (Choose 3.)
 - a. Prohibit smoking inside the building
 - b. Locate exterior designated smoking areas at least 25 feet from access to the building interior
 - c. Locate exterior designated smoking areas at least 50 feet from access to the building interior
 - d. Do not designate exterior smoking areas
 - e. Weatherstrip residential units leading to common hallways
 - f. Operate a designated interior smoking space with positive pressure with regard to common spaces

6. Match the following requirements with their respective point:
1. MRc3.1, Construction IAQ Management Plan, During Construction
 2. MRc3.2, Construction IAQ Management Plan, Before Occupancy
- a. Perform a building flush-out with 14,000 cu.ft. of outdoor air per sq.ft. of floor area
 - b. Protect stored on-site or installed absorptive materials from moisture damage
 - c. Meet or exceed the Control Measure of the SMACNA IAQ Guidelines for Occupied Buildings Under Construction
 - d. Conduct baseline IAQ testing according to EPA guidelines
 - e. Utilize filtration media of at least MERV 8 in permanently installed air handlers
 - f. Demonstrate that the building air does not exceed 500 micrograms per cubic meter of total volatile organic compounds
7. EQc2, Increased Ventilation, relates most directly to which other credit within the Indoor Environmental Quality category? (Choose 1.)
- a. EQp1, Minimum IAQ Performance
 - b. EQp2, Environmental Tobacco Smoke (ETS) Control
 - c. EQc1, Outdoor Air Delivery Monitoring
 - d. EQc5, Indoor Chemical & Pollutant Source Control

Which of the following standards are referenced for the natural ventilation compliance path of EQc2? (Choose 2.)

- a. ASHRAE 62.1-2004
 - b. Carbon Trust Good Practice Guide
 - c. CIBSE Applications Manual 10
 - d. South Coast Rule #1168
8. Answer the following questions in reference to EQc1, Outdoor Air Delivery Monitoring:

The monitoring equipment should generate an alarm when conditions vary by more than _____.

For mechanically ventilated spaces, equipment must be in place to monitor which two metrics?

9. For EQc4.1, Low-Emitting Materials, Adhesives & Sealants, what percentage of adhesives and sealants used in the interior of the building should meet GS-36 and South Coast Rule #1168 standards?
- a. 25%
 - b. 50%
 - c. 80%
 - d. 100%

What do all of the standards referenced under EQc4 set limits for? (Choose 1.)

- a. CO2
 - b. VOCs
 - c. Formaldehyde
 - d. ODP
10. According to EQc7.1, Thermal Comfort—Design, ASHRAE Standard 55-2004 provides data and recommendations for combinations of environmental and personal factors that create a thermal setting acceptable to what percentage of occupants? (Choose 1.)
- a. 60%
 - b. 70%
 - c. 80%
 - d. 90%
11. Which of the following are strategies that might best contribute toward EQc8.1, Daylight & Views—Daylight 75% of Spaces? (Choose 4.)
- a. Building orientation
 - b. Decreased building perimeter
 - c. Shallow floor plates
 - d. Permanent shading devices
 - e. Placement of private offices around perimeter
 - f. High performance glazing
 - g. BIPVs
12. Which of the following are requirements of EQc6.1, Controllability of Systems, Lighting? (Choose 2.)
- a. Individual lighting controls for at least 75% of building occupants
 - b. Individual lighting controls for at least 90% of building occupants
 - c. Individual lighting controls for all occupants
 - d. Lighting control systems for all shared spaces
 - e. Lighting control systems for all shared spaces excluding hallways, conference rooms, and other areas without regular occupants

13. Thermal Comfort, as defined for EQc6.2, Controllability of Systems, is defined as control over how many of the following: air temperature, radiant temperature, air speed, and humidity. (Choose 1.)

- a. 1
- b. 2
- c. 3
- d. 4

Individual comfort controls should be available to _____%, minimum, of building occupants.

14. EQc4.4, Low-Emitting Materials, refers specifically to which point? (Choose 1.)

- a. Composite Wood & Agrifiber Products
- b. Carpet Systems
- c. Adhesives & Sealants
- d. Paints & Coatings

15. The headquarters of a large conservation nonprofit is under construction in Central Florida. Because of the organization's concerns about occupant health and well-being, the design team takes numerous steps to maintain high indoor environmental quality. They increase the outdoor air ventilation rates by 40% above ASHRAE standards, isolate copy and maintenance rooms, and provide frequent operable windows in the open office areas around the building's perimeter. For which points might this construction project be eligible? (Choose 1.)

- a. EQc1, EQc5, EQc6.2
- b. EQc2, EQc5, EQc6.2
- c. EQc2, EQc5, EQc6.1, IDc1
- d. EQc2, EQc5, EQc7.1

16. Which three of the following pieces of information are used to calculate the glazing factor? (Choose 3.)

- a. Number of windows
- b. Window area
- c. Visible light transmittance
- d. Type of window
- e. Window height factor
- f. Wall area

17. Which of the following standards is referenced by EQp1, Minimum IAQ Performance? (Choose 1.)

- a. ASHRAE Standard 55-2004: Thermal Comfort Conditions for Human Occupancy
- b. ASHRAE Standard 62.1-2004: Ventilation for Acceptable Indoor Air Quality
- c. ASHRAE Standard 52.2-1999: Method of Testing General Ventilation Air Cleaning Devices
- d. ASHRAE 90.1-2004: Energy Standard for Buildings Except Low-Rise Residential

18. What facilities count as non-occupied spaces, as defined for the purposes of EQc8, Daylighting & Views? (Choose 2.)
- a. Janitorial rooms
 - b. Hallways
 - c. Stairwells
 - d. Restrooms
 - e. Storage rooms
19. According to EQc5, Indoor Chemical & Pollutant Source Control, which of the following activities should be isolated in separately exhausted spaces in order to maintain occupant health? (Choose 2.)
- a. Showering
 - b. Copying and faxing
 - c. Chemical mixing and storage
 - d. Smoking
 - e. Cooking (kitchen activities)
20. The interactions between the Indoor Environmental Quality category and another LEED-NC category are frequently cited. The requirements of which other category must often be balanced with those of EQ? (Choose 1.)
- a. Sustainable Sites
 - b. Water Efficiency
 - c. Energy & Atmosphere
 - d. Materials & Resources

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Answers

1. 2; 8; 15
2. c, d
3. 1 – c, d; 2 – a, b
4. 8; 13
5. a, b, e
6. 1 – b, c, e; 2 – a, d, f
7. a; b, c
8. 10%; CO2 & direct outdoor airflow
9. d; b
10. c
11. a, c, d, f
12. b, d
13. a; 50
14. a
15. b
16. b, c, e
17. b
18. a, e
19. b, c
20. c