

LEED v4 Building Design and Construction

Quiz #8

EQ

1. Which of these is considered an unoccupied space? [Choose three]
 - A. School classroom
 - B. Mechanical room
 - C. Meeting room
 - D. Locker room
 - E. Restroom
 - F. Hotel lobby

2. What is considered a densely occupied space?
 - A. 15 people or more per 1,000 square feet
 - B. 15 people or more per 2,500 square feet
 - C. 25 people or more per 1,000 square feet
 - D. 25 people or more per 2,500 square feet

3. What is the referenced standard for EQ Prerequisite Minimum Indoor Air Quality Performance?
 - A. ASHRAE 62.2-2010
 - B. Chartered Institution of Building Services Engineers (CIBSE) Applications Manual AM10
 - C. SMACNA
 - D. ASHRAE 52.2-2007
 - E. ASHRAE 170-2008

4. For EQ Prerequisite Minimum Indoor Air Quality Performance which of these are requirements for projects using natural ventilation strategies? [Choose two]
 - A. Provide a direct outdoor airflow measurement device
 - B. Balance outdoor airflow to the design minimum outdoor airflow rate
 - C. An alarm must indicate when any one of the openings is closed during occupied hours
 - D. Monitor carbon dioxide (CO₂) concentrations

5. For EQ Prerequisite Minimum Indoor Air Quality Performance which of these are requirements for projects that include residential units? [Choose two]
 - A. No decorative log heaters
 - B. Solid glass enclosures on indoor fireplaces
 - C. Must design all units using radon-resistant construction techniques
 - D. Perform a Blower Door test using ASTM E779

6. Mechanically ventilated spaces for projects using LEED BD+C: Healthcare must meet what standard?
 - A. ASHRAE 62.2-2010
 - B. Chartered Institution of Building Services Engineers (CIBSE) Applications Manual AM10
 - C. SMACNA
 - D. ASHRAE 52.2-2007
 - E. ASHRAE 170-2008

7. EQ Prerequisite Minimum Indoor Air Quality Performance requires that all projects in a nonattainment area for fine particulate matter, must install filters with at least what minimum efficiency reporting value (MERV)?
 - A. 8
 - B. 11
 - C. 13
 - D. 15

8. In occupied spaces where is the breathing zone?
 - A. 4 to 6 feet above finished floor
 - B. 2 to 5 feet above finished floor
 - C. 3 to 6 feet above finished floor
 - D. Within 8 feet above finished floor

9. To comply with requirements for EQ Prerequisite Environmental Tobacco Smoke Control where must all designated smoking areas be located?
 - A. Inside, in a dedicated smoking room that has self-closing doors and separate exhaust system
 - B. Outside, 25 feet from all entries
 - C. Outside, 10 feet from all entries, outdoor air intakes, and operable windows
 - D. Outside, 25 feet from all entries, outdoor air intakes, and operable windows

10. For LEED BD+C: New Construction projects that include residential units which of these must be implemented to comply with EQ Prerequisite Environmental Tobacco Smoke Control? [Choose two]
 - A. Weather-strip all doors leading from residential units into common hallways
 - B. CO₂ monitors on all floors
 - C. Seal all penetrations in the walls
 - D. Prohibit smoking in all units

11. EQ Prerequisite Minimum Acoustic Performance requires that projects achieve what level of maximum background noise from HVAC equipment?
 - A. 35 dBA in classroom spaces
 - B. 35 dBA in classrooms and other core learning spaces
 - C. 40 dBA in classroom spaces
 - D. 40 dBA in classrooms and other core learning spaces

12. EQ Prerequisite Minimum Acoustic Performance requires that projects design learning spaces to meet which of these acoustic performance areas? [Choose three]
 - A. Crosstalk
 - B. Exterior Noise
 - C. HVAC Background noise
 - D. Reverberation Time
 - E. Sound Transmission

13. EQ Prerequisite Minimum Acoustic Performance requires that projects determine the sound absorption properties using sound absorption coefficients at what frequencies? [Choose three]
 - A. 500 Hz
 - B. 1000 Hz
 - C. 1500 Hz
 - D. 2000 Hz

14. Which of these are needed to calculate the reverberation time? [Choose two]
 - A. Room volume
 - B. NRC
 - C. Room area
 - D. Total sound absorption in the room

15. Which of these will help projects to meet the requirements for EQ Credit Enhanced Indoor Air Quality Strategies?
- A. Separate drains for hazardous liquids
 - B. Roll-out mats maintained on a weekly basis by a contracted service organization
 - C. Permanently installed grates 8 feet long
 - D. MERV 8 filters
16. Which of these is a strategy for Interior Cross-Contamination Prevention in spaces where hazardous gases or chemicals may be present or used? [Choose two]
- A. A minimum exhaust rate of 0.30 cfm per square foot
 - B. Ventilation particle filters of MERV 8
 - C. Hard lid ceilings
 - D. Self-closing doors
17. To minimize and control the entry of pollutants into the building project thresholds can be verified for outdoor air contaminant concentrations at outdoor air intakes using what test?
- A. ASHRAE 62.2-2010
 - B. Gaussian dispersion analyses
 - C. National Ambient Air Quality
 - D. CIBSE AM10 air flow analyses
 - E. CBECS
18. Which of these may be excluded for determining areas of interior cross-contamination prevention?
- A. Copier in a shared office
 - B. Laundry room
 - C. Housekeeping supply room
 - D. Printer in a personal office
19. To achieve EQ Credit Enhanced Indoor Air Quality Strategies increased ventilation projects must increase breathing zone outdoor air ventilation rates to all occupied spaces by at least what percentage above the minimum rates as determined in EQ Prerequisite Minimum Indoor Air Quality Performance?
- A. 15%
 - B. 30%
 - C. 40%
 - D. 50%
20. EQ Credit Low-Emitting Materials requires that all paints and coatings wet-applied on site must meet what applicable VOC limits standards? [Choose two]
- A. California Air Resources Board (CARB) 2007, Suggested Control Measure (SCM) for Architectural Coatings
 - B. South Coast Air Quality Management District (SCAQMD) Rule 1168
 - C. California Department of Public Health (CDPH) Standard Method v1.1
 - D. South Coast Air Quality Management District (SCAQMD) Rule 1113
21. EQ Credit Low-Emitting Materials requires that all adhesives and sealants wet-applied on site must meet the applicable chemical content requirements of which standard?
- A. California Air Resources Board (CARB) 2007, Suggested Control Measure (SCM) for Architectural Coatings
 - B. South Coast Air Quality Management District (SCAQMD) Rule 1168
 - C. California Department of Public Health (CDPH) Standard Method v1.1
 - D. South Coast Air Quality Management District (SCAQMD) Rule 1113

22. What is considered the interior of a building for EQ Credits?
- A. Materials applied on site
 - B. Everything within the waterproofing membrane
 - C. Everything within the weatherproofing system
 - D. The waterproofing membrane
23. Laboratories that conduct the VOC emissions tests specified in EQ Credit Low-Emitting Materials must be accredited under which of these standards?
- A. CDPH
 - B. BIFMA
 - C. ISO
 - D. ANSI
24. Which of these materials are inherently non-emitting sources of VOCs? [Choose three]
- A. Clay brick walkway
 - B. Oak flooring
 - C. Concrete patio
 - D. Furniture
 - E. Unfinished oak flooring
25. For EQ Credit Low-Emitting Materials building products must be tested and determined compliant for general emissions evaluation in accordance with what standard?
- A. CDPH
 - B. BIFMA
 - C. ISO
 - D. ANSI
26. For EQ Credit Low-Emitting Materials which of these is a primary human health concern for new furniture and furnishings?
- A. Methylene chloride
 - B. Perchloroethylene
 - C. VOC
 - D. PM2.5
 - E. Formaldehyde emissions
27. A subcontractor mistakenly used 50 liters of a faux finish coating on all of the interior office walls with a VOC content which exceeded the requirement. What can the project team do?
- A. Paint over the area with a compliant coating
 - B. Tear out the office walls
 - C. Use the VOC budget method
 - D. The project cannot earn the credit
28. To earn EQ Credit Construction Indoor Air Quality Management Plan what must projects do? [Choose three]
- A. Meet SMACNA standards
 - B. Protect absorptive materials stored on-site from moisture damage
 - C. Do not operate permanently installed air-handling equipment during construction
 - D. Install MERV 13 filters if permanent air-handling equipment is used during construction
 - E. Install MERV 8 filters if permanent air-handling equipment is used during construction

29. What is the referenced standard for filtration media used in air-handling equipment?
- A. ASHRAE 90.1
 - B. ASHRAE 62.2
 - C. ASHRAE 55
 - D. ASHRAE 52.2
30. Which of these are required for projects earning EQ Credit Construction Indoor Air Quality Management Plan if a permanently installed HVAC system must be used during construction?
- A. Install filtration to protect the return side of the system
 - B. Cover all returns with plastic
 - C. Seal all ductwork
 - D. Replace all filtration media weekly
31. Which of these is a SMANCA guideline that applies to projects earning EQ Credit Construction Indoor Air Quality Management Plan? [Choose three]
- A. HVAC Protection
 - B. Flush-Out
 - C. Housekeeping
 - D. Scheduling
 - E. Air-Quality Testing
32. What documentation is required for EQ Credit Construction Indoor Air Quality Management Plan? [Choose two]
- A. Photographs of indoor air and environmental quality measures
 - B. Record of filtration media
 - C. Location of temporary air-handlers
 - D. Annotated photographs of indoor air and environmental quality measures
33. What total quantity of outside air must be introduced into an 80' x 120' x 10' ceiling height project space to meet the flush-out requirements for EQ Credit Indoor Air Quality Assessment, Option 1. Flush Out?
- A. 11,200,000 cf
 - B. 134,400,000 cf
 - C. 1,344,000,000 cf
 - D. 33,600,000 cf
34. When performing a building flush-out to meet the requirements of EQ Credit Indoor Air Quality Assessment, Option 1. Flush-Out what volume of air must be supplied?
- A. 3,500 CF/SF
 - B. 0.3 CFM
 - C. 14,000 CF/SF
 - D. 2,000 CF/SF
35. A LEED BD+C: New Construction project is being built in an EPA nonattainment area. The project team is planning to earn EQ Credit Indoor Air Quality Assessment, Option 2. Air-Testing. Which of these contaminants must the project be tested for? [Choose three]
- A. PM2.5
 - B. PM10
 - C. CO
 - D. CO₂
 - E. Ozone

36. What is the minimum ventilation rate required for EQ Credit Indoor Air Quality Assessment, Option 1. Flush-out during occupancy?
- A. 0.3 CFM
 - B. 0.5 CFM
 - C. 0.6 CFM
 - D. 0.8 CFM
37. EQ Credit Thermal Comfort Design requires projects to design heating, ventilating, and air-conditioning (HVAC) systems and the building envelope to meet the requirements of what standard? [Choose three]
- A. CEN Standard EN 15251
 - B. ASHRAE 90.1
 - C. ASHRAE 62.2
 - D. ASHRAE 55
 - E. ASHRAE 52.2
 - F. ISO 7730
38. Thermal comfort controls should allow occupants, whether in individual spaces or shared multioccupant spaces, to adjust at least one of which of the following in their local environment? [Choose four]
- A. Air quality
 - B. Air temperature
 - C. Drafts
 - D. Radiant temperature
 - E. Air speed
 - F. Humidity
39. Which of these is a strategy that could be used to earn EQ Credit Interior Lighting, Option 2. Quality Lighting? [Choose two]
- A. Lamp life
 - B. On-off switches
 - C. All regularly occupied spaces have a task lamp
 - D. Exterior window shades
 - E. Color rendering index (CRI)
40. How can projects demonstrate compliance for EQ Credit Daylight? [Choose three]
- A. sDA simulation
 - B. Illuminance simulation
 - C. Daylight illuminance measurement
 - D. Modeling
41. Which of these is an acceptable glare control device for EQ Credit Daylight? [Choose three]
- A. Fixed fins
 - B. Curtains
 - C. Frit glazed treatment
 - D. Interior shades
 - E. Movable screens
 - F. Fixed louvers
42. Which of these spaces can be excluded from the requirements for EQ Credit Quality Views? [Choose two]
- A. Atria
 - B. Enclosed office
 - C. Gymnasium
 - D. Auditorium
 - E. Classroom

43. What are the performance areas that must be addressed for EQ Credit Acoustic Performance? [Choose four]
- A. HVAC background noise
 - B. Noise criteria
 - C. Sound transmission
 - D. Reverberation time
 - E. Sound reinforcement and masking systems
44. To satisfy the EQ Credit Acoustic Performance LEED BD+C: Healthcare projects should specify and install finish materials with a noise reduction coefficient (NRC) rating of at least what value or higher?
- A. 0.70
 - B. 0.04
 - C. 35
 - D. 60
45. What room surfaces must be considered when calculating the average sound absorption coefficient for each space type for EQ Credit Acoustic Performance? [Choose three]
- A. Partitions
 - B. Walls
 - C. Ceilings
 - D. Furniture
 - E. Floors