



## LEED AP Exam Preparation- Reference Guide Study Outline

LEED for New Construction, Version 2.2 (NC, v. 2.2)

The LEED Reference Guide is a comprehensive manual detailing the LEED process, intent, and requirements. Learning the Reference Guide is critical for passing the LEED Accreditation Exam. This document outlines the LEED (NC, v. 2.2) Reference Guide and highlights important nuances helpful for passing the exam. The Reference Guide is organized in categories based on LEED Prerequisites and Credits. This outline parallels the Reference Guide by providing page numbers referring to relevant information.

### General Study Guidelines

When preparing for the LEED exam, the following points should be considered for all credits:

- The test taker should be familiar with the intent, requirements, and submittals for each LEED credit. The test will apply those requirements to situational questions.
- Understand the synergies between different credits and their associated strategies for compliance.
- Know which credits and strategies are critical and must be addressed early in the design process.
- Know the key disciplines, definitions, and reference standards associated with each credit.

### LEED Process

- Recognize what the USGBC provides upon project registration. (p. 15)
- Understand the difference between LEED rating systems. (p. 14)
- Understand what Credit Interpretation Rulings (CIRs) are and what they provide. (p. 15)
- Understand the Application, Review, and Certification process for projects. (pgs. 15, 16)

### LEED Prerequisites and Credits

#### Sustainable Sites

- **General**
  - Know which credits are most relevant to maintain a consistent definition of site boundary. (pgs. 38, 68, 71, 92, 101)
- **SSp1 Erosion & Sedimentation Control**
  - Know the concerns and strategies addressed by this credit. (pgs. 23, 24)
- **SSc3 Brownfield Redevelopment**
  - Know the definitions of a Brownfield, the level of remediation required, the submittals required to document the environmental assessment, and associated actions to take. (p. 43)

- **SSc5.1 Site Development: Protect or Restore Habitat**
    - Understand the importance of using native or adaptive vegetation to meet compliance for previously developed sites. (p. 67)
  - **SSc6.1 Stormwater Design: Quantity Control**
    - Know the best strategies for minimizing stormwater runoff volume. (p. 76)
    - Understand the differences between the options for compliance and the relevant factors associated with each option. (p. 75)
  - **SSc7.1 Heat Island Effect Non-Roof**
    - Know the landscaping strategies which would contribute to reduced heat island effect. (pgs. 90, 117)
    - Know the benefits of open-grid paving across multiple credits / green building goals. (pgs. 76, 89)
    - Know the definitions of and relationships between Emissivity and Infrared Emittance. (p. 93)
  - **SSc7.2 Heat Island Effect Roof**
    - Know which credits are associated with vegetated roofs. (pgs. 67, 71, 98)
  - **SSc8 Light Pollution Reduction**
    - Be able to distinguish between the various requirements: indoor lighting, exterior lighting, lighting power densities, and IESNA specific zones. (p. 101)
    - Understand potential strategies for this credit and their synergies with energy conservation goals. (pgs. 105)
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## Water Efficiency

- **WEc1.1 Water Efficient Landscaping**
    - Know design principles and strategies that would contribute to this credit. (p. 117)
  - **WEc2 Innovative Wastewater Technologies**
    - Understand the synergies between credits WEc2 and WEc3. (p. 128)
    - Know the inputs for the calculation for wastewater reduction. (pgs. 129, 130, and 131)
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## Energy & Atmosphere

- **EAp1 Fundamental Commissioning**
  - Know who serves as a good commissioning authority and what they should do. (p. 154)
- **EAp2 Minimum Energy Performance**
  - Know the intent of ASHRAE standard 90.1 2004. (p. 175)
- **EAp3 Fundamental Refrigerant Management**
  - Know building systems affected by this credit. (p. 170)
- **EAc1 Optimize Energy Performance**
  - Understand the potential benefits from proper building orientation. (p. 178)
  - Understand the four fundamental strategies that increase energy performance. (p. 178)
  - Know the Exceptional Calculation Method and when it should be used. (pgs. 183, 184)
  - Understand process loads and how they should be accounted. (pgs. 182, 183)
  - Know the basic compliance paths and the difference between prescriptive vs performance methods. (pgs. 173, 174)

- **EAc2 On-site Renewable Energy**
  - Know which technologies can contribute to this credit. (pgs. 198, 199)
- **EAc3 Enhanced Commissioning**
  - Know the tasks which must be completed by the commissioning authority. (p. 205)
  - Know the difference between Fundamental Commissioning and Enhanced Commissioning. (p.205, 154)
- **EAc4 Enhanced Refrigerant Management**
  - Understand the inputs necessary to calculate compliance. (p. 217)
- **EAc5 Measurement & Verification**
  - Know the measurement & verification process. Know the details of Option B & D. (pgs. 221, 222)
- **EAc6 Green Power**
  - Know the intended outcome of supporting and purchasing Green Power. (p. 230)

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## Materials & Resources

- **General**
  - Understand in detail, Table 2: MR Credit Metrics. (p. 235)
- **MRp1 Storage & Collection of Recyclables**
  - Know which materials must be recycled to meet requirement. (p. 237)
- **MRc1 Building Reuse**
  - Know the limitation on a square footage addition to an existing building that still allows the project to qualify for this credit. (p. 241)
  - Know that a project that is incorporating an existing building but does not meet the requirement for MRc1 may apply the reused building structure and materials toward credit MRc2. (p. 244)
  - Understand how and what to include in building reuse calculations. (p. 241-243)
- **MRc3 Materials Reuse**
  - Know the credits for which salvaging materials may apply. Be able to differentiate between recycled content, materials reuse, regional materials, and building reuse. (pgs. 241-243, 259, 263, 272)
- **MRc4 Recycled Content**
  - Know the definition of Post Consumer vs. Pre Consumer recycled materials. (p. 263)
- **MRc6 Rapidly Renewable Materials**
  - Know the variables for calculating compliance for this credit. (p. 278)
  - Know common materials that contribute to this credit. (p. 278)
- **MRc7 Certified Wood**
  - Know the Chain-of-Custody requirements and the types of wood products included in the calculation for compliance to this credit. (p. 283)

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## Indoor Environmental Quality

- **General**
  - Know how much time the typical American spends indoors. (p. 287)
- **EQp1 Indoor Environmental Quality**
  - Know which credits reference ASHRAE Standard 62.1. (p. 288, 307)
- **EQp2 Environmental Tobacco Smoke Control**
  - Understand concerns addressed by this credit. (p. 298)
- **EQc1 Outdoor Air Delivery Monitoring**
  - Know how strategies to meet this requirement can affect overall energy performance of the building. (pgs. 301, 303-304)
- **EQc3.1 Construction IAQ Management Plan: During Construction**
  - Know the details of each requirement for this credit. (p. 317)
  - Know which member of the project team is most responsible for the achievement of this credit and what documents will support compliance. (p. 318)
- **EQc3.2 Construction IAQ Management Plan: Before Occupancy**
  - Know and be able to distinguish between the compliance paths available for projects. (p. 323)
- **EQc4.1 Low-Emitting Materials Adhesives & Sealants**
  - Be able to distinguish between the requirements for non-aerosol and aerosol adhesives as well as adhesives used on the exterior of the building. (pgs. 333-334)
  - Be able to distinguish which standard is referenced by credits EQ4.1, EQ4.2, and EQ4.3. (pgs. 333, 337, 341)
- **EQc6.2 Controllability of Systems: Thermal Comfort**
  - Know primary factors covered by ASHRAE 55-2004. (p. 361)
  - Know the credits for which under-floor air distribution systems may apply. (p. 361, 373)
- **EQc8.1 Daylight & Views 75% of Spaces**
  - Know which variables are included in the calculation for the Daylight Glazing Factor. (p. 373 (Option 1))
  - Know why shading a building's fenestration is desirable. (pgs. 180-181, 374)
  - Know what the "Glazing Factor" represents. (p. 375)
  - Know the height requirements associated with Vision Glazing. (p. 388)

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## Innovation in Design

- **General**
  - Know that ID credits can be received by reaching the next incremental level or doubling of the highest credit requirement. (p.392)
  - Know both types of strategies with which projects can achieve ID credits. (p. 392)
  - Know the general form of what is to be included with ID credit submittals. (p. 391)