LEED v4

Exherpt from Leed Green Associate V4 Exam Compete Study Guid, by Togay Koralturk, 2016

INTERIOR LIGHTING – CREDIT

- 1-2 Points

CREDIT SUMMARY

Just like thermal comfort, interior lighting is another factor that affects the productivity and comfort of building occupants. In summary, carefully illuminated spaces with lighting controls provided for individuals and groups consequently result in increased comfort levels and productivity rates.

This credit aims to provide good interior lighting by requiring the projects to provide lighting controls for at least 90% of the individual occupant spaces and/or following the lighting quality standards under option 2.

To measure the amount of illumination that falls onto a surface, the term **footcandle** is used, which is equal to one lumen per square foot.

CREDIT INTENT

Promoting building occupants' productivity, well-being and comfort with providing high-quality lighting.

CREDIT REQUIREMENTS

Pursue one or both of the following two options.

Option 1: Lighting control - 1 point

For at least **90%** of the individual occupant spaces, provide individual lighting controls which enable occupants to adjust the lighting to suit their preferences. The individual lighting should contain at **least three lighting levels (on, off, midlevel)**. Midlevel should be between 30% to 70% of the maximum illumination level (daylight contributions are not included).

For all shared multi-occupant spaces, all of the following requirements should be met:

- Provide multizone control systems that enable occupants to adjust the lighting to meet group needs with at least three lighting levels or scenes (on, off, midlevel)
- Lighting for any presentation or projection wall must be separately controlled by the occupants

- Switches or manual controls must be in the same space with the controlled luminaires. The person operating the controls should be able to have a direct line of sight to the controlled luminaires.

AND/OR

Option 2: Lighting quality - 1 point

Choose four of the eight following strategies.

1. Use light fixtures with a luminance of less than 2,500 cd/m2 between 45 and 90 degrees from nadir for all regularly occupied spaces.
2. Use light sources with a CRI of 80 or higher for the entire project.
3. For 75% of the total connected lighting load, the light sources should have a rated life (or L70 for LED sources) of at least 24,000 hours (at 3-hour per start, if applicable).
4. For all regularly occupied spaces, use direct-only overhead lighting for 25% or less of the total connected lighting load.
5. For 90% of the regularly occupied floor area, projects should meet the following thresholds for area-weighted average surface reflectance: 85% for ceilings, 60% for walls and 25% for floors.
6. Select furniture finishes to meet the following thresholds for area-weighted average surface reflectance: 45% for work surfaces and 50% for movable partitions.
7. For 75% of the regularly occupied floor area, meet ratio of average wall surface illuminance to average work plane illuminance in order not to exceed 1:10. Strategy 5 and 6 should be also met or demonstrate area-weighted surface reflectance of 60% for walls.
8. For 75% of the regularly occupied floor area, meet ratio of average ceiling illuminance to work surface illuminance in order not to exceed 1:10. Strategy 5 and 6 should be also met or demonstrate area-weighted surface reflectance of 85% for ceilings.

KEY THINGS TO REMEMBER

- In option 1, individual lighting controls should be provided for **90%** of the individual occupant spaces and individual lighting should contain at least three lighting levels (on, off, mid-level).
- Footcandle is a measurement of the amount of illumination that falls on to a surface, which is equal to one lumen per square foot.