

**INTERPRETATION IC 90.1-2019-4 OF
ANSI/ASHRAE/IES STANDARD 90.1-2019
Energy Standard for Buildings Except Low-Rise Residential Buildings**

Date Approved: June 5, 2020

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Reference: This request for interpretation refers to the requirements presented in ANSI/ASHRAE/IES Standard 90.1-2019, Tables 9.4.2-2 and G3.6, regarding Appendix G baseline building exterior lighting.

Background: Projects using Appendix G must include exterior lighting in both the proposed building design and the baseline building design. Section G1.2.1 requires the proposed building design to comply with the mandatory exterior lighting power allowances in Section 9.4.2 and the budget building design is required to comply with exterior lighting power requirements in Table G3.1 Part 6 which includes power allowances for Tradeable surfaces described in Table 3.6.

Starting in 2016 the requirements in Appendix G were changed to create a stable independent baseline building design representing 2004 design requirements. The exterior lighting categories for tradeable surfaces in Table G3.6 are the same exterior categories described in 90.1-2004.

Between 2016 and 2004 the exterior lighting power allowances in ASHRAE 90.1 have been made more stringent and subsequently additional tradeable surface categories were added to address specific use cases. As a result of these changes the tradeable surface categories in Table 9.4.2-2 do not align with the tradeable surface categories in Table G3.6. This difference creates confusion about how to correctly calculate the baseline building design exterior lighting power.

Interpretation No.1: The calculation of exterior lighting power for tradeable surfaces in the baseline building design is intended to be representative of the exterior lighting power allowance a project would have received circa 2004. Any tradeable surfaces included in Table 9.4.2-2 that are not included in Table G3.6 must be mapped to the most applicable category.

Question No.1: Is this interpretation correct?

Answer No.1: No.

Comments: In Table G3.1.1(6) the requirement for exterior lighting in the baseline building is for exterior lighting in the proposed design to be mapped to the closest, appropriate category in Table G3.6 irrespective of the categories available in Table 9.4.2-2. Categories in Table 9.4.2-2 that do not have an appropriate category in Table G3.6 qualify as “other” and should be modeled the same in the baseline design as in the proposed design following Table G3.1 #6, baseline building performance column.

Interpretation No.2: The exterior lighting power allowance calculated for the baseline building design does not determine whether a proposed design complies with the mandatory requirements of ASHRAE 90.1. Therefore, there may be a case where the exterior lighting power in the baseline building design is lower than the exterior lighting power in the proposed building design.

Question No.2: Is this interpretation correct?

Answer No. 2: Yes.

Interpretation No.3: Tradeable surface “Building Grounds, Dining Area” in Table 9.4.2-2 shall map to “Building Grounds, Special feature areas” in Table G3.6 even though the power allowance may be different.

Question No.3: Is this interpretation correct?

Answer No. 3: No.

Comments: Dining area exterior lighting is not covered under the categories in Table G3.6 so the baseline exterior lighting power should be the same as in the proposed. However, dining area exterior lighting power allowance is covered under 9.4.2 and must meet the mandatory requirements of 9.4.2.

Interpretation No.4: Tradeable surface “Building Grounds, Pedestrian tunnels” in Table 9.4.2-2 shall map to “Building Grounds, Special feature areas” in Table G3.6 even though the power allowance may be different.

Question No.4: Is this interpretation correct?

Answer No. 4: No.

Comments: A pedestrian tunnel is not covered under the categories in Table G3.6 so the baseline exterior lighting power should be the same as in the proposed. However, pedestrian tunnel exterior lighting power allowance is covered under 9.4.2 and must meet the mandatory requirements of 9.4.2.

Interpretation No.5: Tradeable surface “Building Grounds, Landscaping” in Table 9.4.2-2 shall map to “Building Grounds, Special feature areas” in Table G3.6 even though the power allowance may be different.

Question No.5: Is this interpretation correct?

Answer No.5: No.

Comments: Landscape lighting is not covered under the categories in Table G3.6 so the baseline exterior lighting power should be the same as in the proposed. However, landscape lighting

exterior lighting power allowance is covered under 9.4.2 and must meet the mandatory requirements of 9.4.2.

Interpretation No.6: Tradeable surface “Entry canopies” in Table 9.4.2-2 shall map to “Canopies and Overhangs, Canopies” in Table G3.6 even though the power allowance may be different.

Question No.6: Is this interpretation correct?

Answer No.6: Yes.

Comments: As long as the allowance is only applied to entry canopies.

Interpretation No.7: Tradeable surface “Loading docks” in Table 9.4.2-2 shall map to “Building Entrances and Exits, Main entries” in Table G3.6 even though the power allowance may be different.

Question No.7: Is this interpretation correct?

Answer No.7: No.

Comments: Loading docks are not covered in Table G3.6 so the baseline exterior lighting power should be the same as in the proposed. However, loading dock exterior lighting power allowance is covered under 9.4.2 and must meet the mandatory requirements of 9.4.2.

Interpretation No.8: Tradeable surface “Pedestrian and vehicular entrances and exits” in Table 9.4.2-2 shall map to “Building Entrances and Exits, Main entries” in Table G3.6 if an entrance is considered a main building entry for pedestrians or vehicles.

Question No.8: Is this interpretation correct?

Answer No.8: Yes.

Interpretation No.9: Tradeable surface “Pedestrian and vehicular entrances and exits” in Table 9.4.2-2 shall map to “Building Entrances and Exits, Other doors” in Table G3.6 for any doors that are not considered main entries or loading docks.

Question No.9: Is this interpretation correct?

Answer No.9: Yes.

Interpretation No.10: Tradeable surface “Sales Canopies, Free standing and attached” in Table 9.4.2-2 shall map to “Canopies and Overhangs, Canopies” in Table G3.6 even though the power allowance may be different.

Question No.10: Is this interpretation correct?

Answer No.10: Yes.

Interpretation No.11: In 90.1-2016, Appendix G requirements for Tradeable Surfaces in Table G3.6 are the same as in 90.1-2019. The answers to questions 1-10 also apply to a project using 90.1-2016 Appendix G.

Question No.11: Is this interpretation correct?

Answer No.11: Yes.