

Multifamily Energy Efficiency Measures in New Construction Buildings

For high rise multifamily building, measures that are outside the scope of ASHRAE 90.1-2007 Appendix G, the ENERGY STAR Multifamily High Rise (MFHR) Program Simulation Guidelines (SG) must be used as an addendum to the P4P New Construction Simulation Guidelines if performance credit is claimed. The ENERGY STAR MFHR Simulation Guidelines are located here:

https://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/mfhr/ENERGY%20STAR%20MFHR%20Simulation%20Guidelines_Version_1%200_Rev03.pdf?Oba2-570b

Spreadsheet calculations must be submitted to justify model inputs for each of these measures. Partners may provide their own spreadsheets or use the ones provided in the ENERGY STAR MFHR Performance Path Calculator.

In-unit Lighting

Apartment lighting power density is not covered in section 9 of ASHRAE 90.1-2007. MFHR SG Sections 3.6.2.1, 3.6.2.2, 3.6.2.3 and 3.6.2.5 must be used to establish the baseline. The baseline lighting power density for apartments shall be modeled as 1.1 W/SqFt. The lighting schedule used in the baseline and proposed designs shall be equal to 2.34 hr/day. Performance credit may only be claimed for hard-wired fixtures located in apartments. Portions of apartments with no lighting specified must be modeled identically in the baseline and proposed designs. The 'In-unit Lighting' tab of the Performance Path Calculator may be used to justify model inputs.

Domestic Hot Water Demand

Performance credit for low flow fixtures such as showerheads and faucets may be claimed. MFHR SG Sections 3.9.2 and 3.9.3 must be used to model savings from low flow fixtures and calculate water savings. The 'Water Savings' tab and the 'DHW Demand' tab of the Performance Path Calculator may be used to justify model inputs.

ENERGY STAR Appliances

Performance credit for ENERGY STAR appliances such as refrigerators, clothes washers, and dishwashers may be claimed. MFHR SG Section 3.10 must be used to model savings from

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appliances and the 'Appliances' tab of the Performance Path Calculator may be used to justify model inputs.

Other Measures

This technical topic does not limit the use of the MFHR Simulation Guidelines to the three measures listed above. The MFHR Simulation Guidelines includes simulation approaches to claim savings for elevators, ENERGY STAR exhaust fans, demand controlled ventilation in parking garages, among others. Further, the MFHR Simulation Guidelines may be used to simulate building components such as heating and cooling setpoint schedules (Section 3.8.6) and baseline electric auxiliary heat for System 2 PTHP (Section 3.8.2.2). If these guidelines are used, they should be referenced in the ERP.