

COMMERCIAL ENERGY - ARCHITECTURAL PLAN REVIEW CHECKLIST

Use this checklist for all IBC-scope buildings other than Group R-2, R-3, and R-4 three stories or less.

General

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| <input type="checkbox"/> | A continuous building thermal envelope is represented on the construction drawings |
| <input type="checkbox"/> | Typical cross sections clearly indicate insulation R-value, type, and material for each unique assembly type |
| <input type="checkbox"/> | Plans clearly indicate all fenestration U-factors and solar heat gain coefficients |
| <input type="checkbox"/> | Typical cross sections clearly indicate air barrier materials and location |

Air Leakage

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| <input type="checkbox"/> | Notes indicate an air barrier method (Materials, Assemblies, or Whole Building Test) C402.5.1 |
| <input type="checkbox"/> | Exterior doors opening to spaces > 3,000 sq.ft. have vestibules, revolving doors, or air curtains. Note: Doors adjacent to revolving doors must have vestibules or air curtains. |
| <input type="checkbox"/> | Areas with 15-ft high ceilings that are > 2,500 sq.ft.: ≥ 50% of the floor area is in daylight zone under a skylight (C402.4.2). Applies to: office, lobby, atrium, concourse, corridor, storage, gymnasium/exercise center, conventions center, automotive service, manufacturing, non-refrigerated warehouses, retail store, distribution/sorting area, transportation, or workshop. |

Systems Completion and Commissioning

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|--------------------------|---|
| <input type="checkbox"/> | Lighting functional testing- Construction drawings specify that the following items will be provided to the building owner or owner's authorized <ul style="list-style-type: none"> a. Drawings that include the location and catalogue number of each lighting control; b. An operating and maintenance manual; c. A report of functional testing including results, deficiencies, and corrective actions |
| <input type="checkbox"/> | If mechanical systems commissioning is not specified, total building cooling capacity and heating capacity + service hot water capacity are clearly indicated. |

Buildings with ≥ 480,000 BTU/Hr cooling capacity or ≥ 600,000 BTU/Hr heating + water heating capacity

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|--------------------------|---|
| <input type="checkbox"/> | Notes indicate provisions for mechanical system commissioning and completion, including the name of an approved commissioning authority |
| <input type="checkbox"/> | Notes indicate a system balancing report and final commissioning report will be provided to the owner within 90 days of C.O. |
| <input type="checkbox"/> | Compliance path is clearly noted on the plans or accompanying documentation. Otherwise, assume prescriptive (C406) |

Indicate the compliance path selected by the applicant and complete the appropriate section below

| | | |
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| <input type="checkbox"/> Prescriptive | <input type="checkbox"/> COMcheck | |
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Prescriptive Path (with no tradeoffs)

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| <input type="checkbox"/> | Window area is ≤ 30% of above-grade wall area |
| <input type="checkbox"/> | R-values on plans meet IECC Table C402.1.3 or ASHRAE 90.1 Table 5.5-4 for Climate Zone 4 for each assembly |
| <input type="checkbox"/> | Fenestration U-factors are less than or equal to the values in IECC Table C402.4 |
| <input type="checkbox"/> | Fixed windows ≤ 0.38; Operable windows ≤ 0.45; Entrance doors ≤ 0.77; Skylights ≤ 0.50 |
| <input type="checkbox"/> | Fenestration SHGCs are less than or equal to the values in IECC Table C402.4. If values exceed 0.36, applicant demonstrates window orientation and overhang projection factor. |
| <input type="checkbox"/> | One Additional Efficiency Package Option is indicated on the plans and specifications are shown or there is a reference to other plans (i.e. Mech |
| <input type="checkbox"/> | Access hatches and doors (R-N1102.2.4/EC-402.2.3) |

COMcheck Envelope Compliance Certificate

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|--------------------------|---|
| <input type="checkbox"/> | Heading shows Comcheck version 4.1.1. or higher |
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Project Information

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| <input type="checkbox"/> | Energy Code = 2018 IECC or ASHRAE 90.1 (2016) |
| <input type="checkbox"/> | Location = Philadelphia, Pennsylvania |

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| <input type="checkbox"/> | Vertical Glazing/Wall Area percentage seems reasonable compared to elevation drawings |
| <input type="checkbox"/> | Construction Site address matches the plans |
| Additional Efficiency Package | |
| <input type="checkbox"/> | At least one efficiency package option is listed, and construction documents show provisions for installation of this option |
| Building Area | |
| <input type="checkbox"/> | All activity types (i.e. office) are listed and floor areas match plans |
| Envelope Assemblies | |
| <input type="checkbox"/> | Compliance field says "PASSES" |
| <input type="checkbox"/> | Assembly types match plans and each unique assembly type is listed (including cantilvered floors, floors over garages, and bump-out ceilings) |
| <input type="checkbox"/> | Assembly R-values and fenestration U-factors match plans |
| <input type="checkbox"/> | Cavity insulation R-values are not listed in the Continuous R-value column |
| <input type="checkbox"/> | Certificate is signed by the person completing the report |
| <input type="checkbox"/> | Envelope inspection checklist provided and contain references to plans/specs page numbers |

COMMERCIAL ENERGY - MECHANICAL PLAN REVIEW CHECKLIST

Information on Construction Documents

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| <input type="checkbox"/> | Equipment where combustion air is supplied through openings in an exterior wall is located outside the conditioned space or in an insulated and air sealed equipment room separating it from adjacent conditioned space (C402.5.3) |
| <input type="checkbox"/> | IMC minimum ventilation calculations for each space are clearly represented, and the ventilation system is capable of operating at the IMC minimum rate. |
| <input type="checkbox"/> | In buildings > 2 stories, air intakes, exhaust openings, and stairway/shaft vents have Class 1 motorized dampers C403.7.7 |
| <input type="checkbox"/> | Compliance path is clearly noted on the plans or accompanying documentation. Otherwise, assume prescriptive. |
| <input type="checkbox"/> | ASHRAE 183 design heating and cooling load calculation report is present and the specified equipment output capacity is not larger than the next nominal size above the design loads |
| <input type="checkbox"/> | Heating and cooling equipment efficiencies are \geq the appropriate values in IECC Tables C403.3.2 (1-9) |
| <input type="checkbox"/> | Total building cooling capacity, heating capacity, and service hot water capacity are clearly indicated |
| <input type="checkbox"/> | System does not include hot gas bypass or has variable capacity. Hot gas bypass does not exceed 50% of total capacity for systems \geq 240,000 and 25% for systems > 240,000. |

Controls

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|--------------------------|---|
| <input type="checkbox"/> | Notes indicate provisions for mechanical system commissioning and completion, including the name of an approved commissioning authority |
| <input type="checkbox"/> | Notes indicate a system balancing report and final commissioning report will be provided to the owner within 90 days of CO |
| <input type="checkbox"/> | Off-hour controls: Thermostats configured to setback to 55 degrees F and 85 degrees F cooling and have automatic start (C403.4.2) |

Buildings with \geq 480,000 BTU/Hr cooling capacity or \geq 600,000 BTU/Hr heating + water heating capacity

| | |
|--------------------------|--|
| <input type="checkbox"/> | Rated fan airflow meets or exceed required air flow |
| <input type="checkbox"/> | HVI-rated fan efficacy is $>$ or $=$ 1.4 cfm/watt for fans with $<$ 90 cfm maximum airflow |

Indicate the compliance path selected by the applicant and complete the appropriate section below

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|---------------------------------------|-----------------------------------|---|--|
| <input type="checkbox"/> Prescriptive | <input type="checkbox"/> COMcheck | <input type="checkbox"/> Performance modeling | <input type="checkbox"/> ENERGY STAR (apartments only) |
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Prescriptive Path - Use associated plan review form

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| COMcheck | |
| <input type="checkbox"/> | HVAC systems: Number, type, and capacity matches equipment schedule |
| <input type="checkbox"/> | COMcheck inspection checklist are provided and contain references for locations on plans/specs: plumbing rough-in, mechanical rough-in |