

COMMERCIAL NEW CONSTRUCTION
Massachusetts Energy Code 9th Edition
Plan Review Checklist for IECC Compliance Paths
 (To be completed before building permit is issued)



Applicant Name _____ Applicant Phone _____

Project Address _____ Permit Number _____

Type of Construction:

<input type="checkbox"/> New Construction	<input type="checkbox"/> Addition	<input type="checkbox"/> Alteration	<input type="checkbox"/> Change of Occupancy
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Select Compliance Path (C401.2):

<input type="checkbox"/> #1: ASHRAE Standard 90.1 (select one below):			
<input type="checkbox"/> Prescriptive Path	<input type="checkbox"/> Energy Cost Budget (Chapter 11)	<input type="checkbox"/> Appendix G	<input type="checkbox"/> MA Stretch Code

<input type="checkbox"/> #2: IECC Prescriptive Path
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<input type="checkbox"/> #3: IECC Performance Path (select one below)	
<input type="checkbox"/> Energy Rating Index for Multifamily up to 5 stories	<input type="checkbox"/> Passive House (PHIUS+18 or PHI)

Requirements for Chosen Compliance Path:

Compliance Path # 1: ASHRAE Standard 90.1/MA Stretch Code

For 90.1-2016 Prescriptive Path and Energy Cost Budget (Chapter 11):

<input type="checkbox"/> Attach COMcheck Report	<input type="checkbox"/> C402.3 Rooftop Solar Ready & C405.10 EV Ready*	<input type="checkbox"/> Indicate C406 Options Below
Section 406 – Must include Three (3) options		
<input type="checkbox"/> C406.2 More Efficient HVAC	<input type="checkbox"/> C406.3 Reduced LPD	<input type="checkbox"/> C406.4 Enhanced Lighting Controls
<input type="checkbox"/> C406.5 Renewable Energy	<input type="checkbox"/> C406.6 DOAS	<input type="checkbox"/> C406.7 High Efficiency SHW
<input type="checkbox"/> C406.9 Reduced Air Infiltration	<input type="checkbox"/> C406.10 Renewable Space Heating	<input type="checkbox"/> C406.11 Heavy Timber Construction

For 90.1-2016 Energy Cost Budget (Chapter 11) and Appendix G:

Compliance report for permitting must include:	1. A statement indicating that the proposed design complies with Chapter 11 or Appendix G
	2. A site-specific energy analysis report
	3. The name of the individual performing the analysis and generating the report
	4. The name and version of the compliance software tool

Massachusetts Stretch Code (90.1-2013):

<input type="checkbox"/> Provide plans and specifications demonstrating compliance with all mandatory requirements. Provide energy model documentation including inputs and outputs of the energy model and a summary report. Energy model must be based on and show to be 10% better than 90.1-2013 Appendix G.
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Compliance Path #2: IECC Prescriptive

<input type="checkbox"/> Attach COMcheck Report	<input type="checkbox"/> Meets C402 through C405	<input type="checkbox"/> C402.3 Rooftop Solar Ready & C405.10 EV-Ready*	<input type="checkbox"/> Indicate C406 Options Below
Section 406			
<input type="checkbox"/> C406.2 More Efficient HVAC	<input type="checkbox"/> C406.3 Reduced LPD	<input type="checkbox"/> C406.4 Enhanced Lighting Controls	
<input type="checkbox"/> C406.5 Renewable Energy	<input type="checkbox"/> C406.6 DOAS	<input type="checkbox"/> C406.7 High Efficiency SHW	<input type="checkbox"/> Enhanced Env. Perf
<input type="checkbox"/> C406.9 Reduced Air Infiltration	<input type="checkbox"/> C406.10 Renewable Space Heating	<input type="checkbox"/> C406.11 Heavy Timber Construction	

Compliance Path #3: IECC Performance Attach COMcheck Report Meet C402.3 Rooftop Solar Ready and C405.10 EV-Ready* Meets C405, C407, C408**Multifamily ERI-based compliance (up to 5 stories) in accordance with C407.1.1:**

Compliance report for permitting shall comply with C407.5.1 and C407.6 and include:

1. HERS compliance report with score of 55 or lower for each finished residential unit, attested to be 'based on plans'.
2. A site-specific description of unit's energy features
3. The name of the individual performing the analysis and generating the report
4. The name and version of the compliance software tool

Passive House Institute US or Passive House Institute compliance with C407.1.2**Passive House Institute US (PHIUS)**

Compliance report for permitting shall comply with C407.5.2 and C407.6 and include:

1. A WUFI or PHPP compliance report showing proposed design complies with PHI/PHIUS+2018 performance requirements and has precertification approval from PHIUS or PHI.
2. Statement that WUFI or PHPP results are based on plans.
3. Certified Passive House consultant verifies compliance.

*See Massachusetts amendments

Notes:

COMMERCIAL NEW CONSTRUCTION
Massachusetts Energy Code 9th Edition
Checklist of Required Documentation
 (To be completed by the permit applicant)



Applicant Name _____ Applicant Phone _____

Project Address _____

Type of Construction:

<input type="checkbox"/> New Construction	<input type="checkbox"/> Addition	<input type="checkbox"/> Alteration	<input type="checkbox"/> Change of Occupancy
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Select Compliance Path (C401.2):

<input type="checkbox"/> #1: ASHRAE Standard 90.1 or Massachusetts Stretch Code (select one below):
<input type="checkbox"/> Prescriptive: Provide plans and specifications demonstrating compliance with all measures of 90.1-2016 Section 5, 6,7,8,9.
<input type="checkbox"/> Energy Cost Budget (Chapter 11): Provide plans and specifications demonstrating compliance with all 90.1-2016 mandatory measures of Section 5 and all measures in 6,7,8,9.
<input type="checkbox"/> Performance Rating (Appendix G): Provide plans and specifications demonstrating compliance with all mandatory requirements. Provide energy model documentation including inputs and outputs of the energy model and a summary report. Energy model must be based on 90.1-2016 Section 11 of 90.1 2016.
<input type="checkbox"/> Massachusetts Stretch Code: All buildings over 100,000 ft ² , and new supermarkets, laboratories and conditioned warehouses over 40,000 ft ² must demonstrate energy use per square foot at least <u>10% below the energy requirements of ASHRAE 90.1-2013 Appendix G.</u>

<input type="checkbox"/> #2: IECC Prescriptive Path: Provide plans and specifications demonstrating compliance with all measures of Sections C402 through C405, C406, and C408.
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<input type="checkbox"/> #3: IECC Performance Path: Provide plans and specifications demonstrating compliance with all measures of Sections C402.3, C405, C407, C408. (select one option below)
<input type="checkbox"/> Option 1: Energy Rating Index for Multifamily up to 5 stories
<input type="checkbox"/> Option 2: Passive House (PHIUS+18 or PHI)

Requirements for Chosen Compliance Path:

Compliance Path # 1: ASHRAE Standard 90.1-2016/MA Stretch Code		
Prescriptive Path and Energy Cost Budget (Chapter 11):		
<input type="checkbox"/> Attach COMcheck Report (Code = ASHRAE 90.1)	<input type="checkbox"/> Meet C402.3 Rooftop Solar Ready & C405.10 EV-Ready	<input type="checkbox"/> Indicate C406 Options Below
Section C406 – Must Include Three (3) options		
<input type="checkbox"/> C406.2 More Efficient HVAC	<input type="checkbox"/> C406.3 Reduced LPD	<input type="checkbox"/> C406.4 Enhanced Lighting Controls
<input type="checkbox"/> C406.5 Renewable Energy	<input type="checkbox"/> C406.6 DOAS	<input type="checkbox"/> C406.7 High Efficiency SHW
<input type="checkbox"/> C406.8 Enhanced Env. Perf.	<input type="checkbox"/> C406.9 Reduced Air Infiltration	<input type="checkbox"/> C406.10 Renewable Space Heating
<input type="checkbox"/> C406.11 Type IV Heavy Timber Const.		
Performance Path: Energy Cost Budget (Chapter 11) or Appendix G:		
Compliance report for permitting must include:	<input type="checkbox"/> A statement indicating that the proposed design complies with Chapter 11 or Appendix G	
	<input type="checkbox"/> A site-specific energy analysis report	
	<input type="checkbox"/> The name of the individual performing the analysis and generating the report	
	<input type="checkbox"/> The name and version of the compliance software tool	
Massachusetts Stretch Code:		
<input type="checkbox"/> Provide plans and specifications demonstrating compliance with all mandatory requirements. Provide energy model documentation including inputs and outputs of the energy model and a summary report. Energy model must be based on and show to be 10% better than 90.1-2013 Appendix G.		

Compliance Path #2: IECC Prescriptive			
<input type="checkbox"/> Attach COMcheck Report (Code = 2018 IECC)	<input type="checkbox"/> Meets C402 through C405	<input type="checkbox"/> Meet C402.3 Rooftop Solar Ready & C405.10 EV Ready	<input type="checkbox"/> Indicate C406 Options Below
Section C406 – Must Include Three (3) options			
<input type="checkbox"/> C406.2 More Efficient HVAC	<input type="checkbox"/> C406.3 Reduced LPD	<input type="checkbox"/> C406.4 Enhanced Lighting Controls	
<input type="checkbox"/> C406.5 Renewable Energy	<input type="checkbox"/> C406.6 DOAS	<input type="checkbox"/> C406.7 High Efficiency SHW	<input type="checkbox"/> C406.8 Enhanced Env. Perf.
<input type="checkbox"/> C406.9 Reduced Air Infiltration	<input type="checkbox"/> C406.10 Renewable Space Heating	<input type="checkbox"/> C406.11 Type IV Heavy Timber Const.	

Compliance Path #3: IECC Performance		
<input type="checkbox"/> Attach COMcheck Report (Code = 2018 IECC)	<input type="checkbox"/> Meet C402.3 Rooftop Solar Ready & C405.10 EV-Ready	<input type="checkbox"/> Meets C405, C407, C408
Multifamily ERI –based compliance in accordance with C407.1.1:		
Compliance report for permitting shall comply with C407.5.1 and C407.6 and include:	<input type="checkbox"/> HERS compliance report with score of 55 or lower for each finished residential unit, attested to be 'based on plans'.	
	<input type="checkbox"/> A site-specific description of unit's energy features	
	<input type="checkbox"/> The name of the individual performing the analysis and generating the report	
	<input type="checkbox"/> The name and version of the compliance software tool	
Passive House Institute US or Passive House Institute compliance with C407.1.2		
Compliance report for permitting shall comply with C4057.5.2 and C407.6 and include:	<input type="checkbox"/> A WUFI or PHPP compliance report showing proposed design complies with PHI/PHIUS+2018 performance requirements, and evidence of precertification approval from PHIUS or PHI.	
	<input type="checkbox"/> Statement that WUFI or PHPP results are based on plans.	
	<input type="checkbox"/> Certified Passive House consultant verifies compliance.	

Construction Document Location:

Required Construction Details

Indicate primary locations within the construction documentation of the following information:

	Drawing Page(s)	Specification(s)
Building thermal envelope		
Cross section showing insulation R-values and materials for each building thermal envelope component		
Cross section showing air barrier/air sealing details		
Fenestration U-factors and solar heat gain coefficients (SHGCs)		
Mechanical systems		
Design criteria		
Equipment types, sizes and efficiencies		
Controls description		
Pipe insulation		
Fan motor horsepower (hp) and controls		
Economizer description		
Duct sealing, insulation and location		
Service water heating systems		
Equipment types, sizes and efficiencies		
Controls description		
Pipe insulation and location		
Lighting		
Lighting fixture schedule with wattage and control narrative		
Location of daylight zones of floor plans		
Other Compliance Items		
Solar Ready roof zone in accordance with Appendix CA.		
EV Ready Spaces locations in accordance with C405.10		
COMcheck Reports (Mandatory, all Projects)		

Commissioning Plan - Preliminary Commissioning Plan from commissioning agent

IBC Scope/IECC Commercial 2018 IECC Commercial [CE] | ASHRAE 90.1



Energy Code Questions?

Email: energycodesma@psdcconsulting.com

Call: 855-757-9717 (toll free)

Visit: www.masssave.com/energycode

Start Here

Is your building type listed below?

- One- and two-family dwellings and townhouses
- Groups R-2, R-3, and R-4 three stories or less

No See 2018 IECC [RE]

Is the project in a Stretch Code Community?

Yes →

No →

Is this a New Construction project?

Yes →

No See Chapter 5 for exceptions

Is your building >100,000 sqft or a supermarket, laboratory, or conditioned warehouse >40,000 sqft?

Yes →

No →

Stretch Code^{1,4}
10% improvement over ASHRAE 90.1-2013 Appendix G²

Plus 3 Additional Options



ASHRAE 90.1-2016¹

Choose a path

2018 IECC [CE]¹

- Prescriptive**
- Building Envelope (Section 5.1-5.4, 5.5 or 5.6, 5.7-5.9)
 - HVAC (Section 6)
 - Service Water Heating (Section 7)
 - Power (Section 8)
 - Lighting (Section 9)
 - Other Equipment (Section 10)

- Performance**
- Section 11: Energy Cost Budget Method or Appendix G: Performance Rating Method^{2a}
 - Mandatory Sections 5.4, 6.4, 7.4, 8.4, 9.4, 10.4

- Prescriptive**
- Building Envelope (C402)
 - Building Mechanical Systems (C403)
 - Service Water Heating (C404)
 - Electric Power and Lighting Systems (C405)
 - Additional Efficiency Package Options (C406)
 - Commissioning (C408)

- Performance**
- Energy Rating Index (ERI) for Multi-family Buildings (C407.1.1) and ERI-based Compliance (C407.3) **OR** Passive House or PHUS (C407.1.2)
- +**
- Rooftop Solar Readiness (C402.3)
 - Electrical Power and Lighting Systems (C405)
 - Compliance Software Tools (C407.4)
 - Documentation (C407.5)
 - Verification by Approved Agency (C407.6)
 - Building Commissioning (C408)

Plus 3 Additional Options



- C406.1. Choose 3 Additional Efficiency Package Options:**
- More efficient HVAC
 - Reduced lighting power density
 - Enhanced lighting controls
 - On-site renewable energy
 - Dedicated outdoor air system
 - High-efficiency service water heating
 - Enhanced envelope performance
 - Reduced air infiltration
 - Renewable space heating
 - Type IV heavy timber construction

¹ COMcheck documentation required for all compliance paths
² Site or source method may be used per MA C401.2.2
³ Additional Efficiency Package Options must be included in the standard reference design
⁴ R-use buildings ≤4 stories may comply with the residential stretch code (AA103.1)