

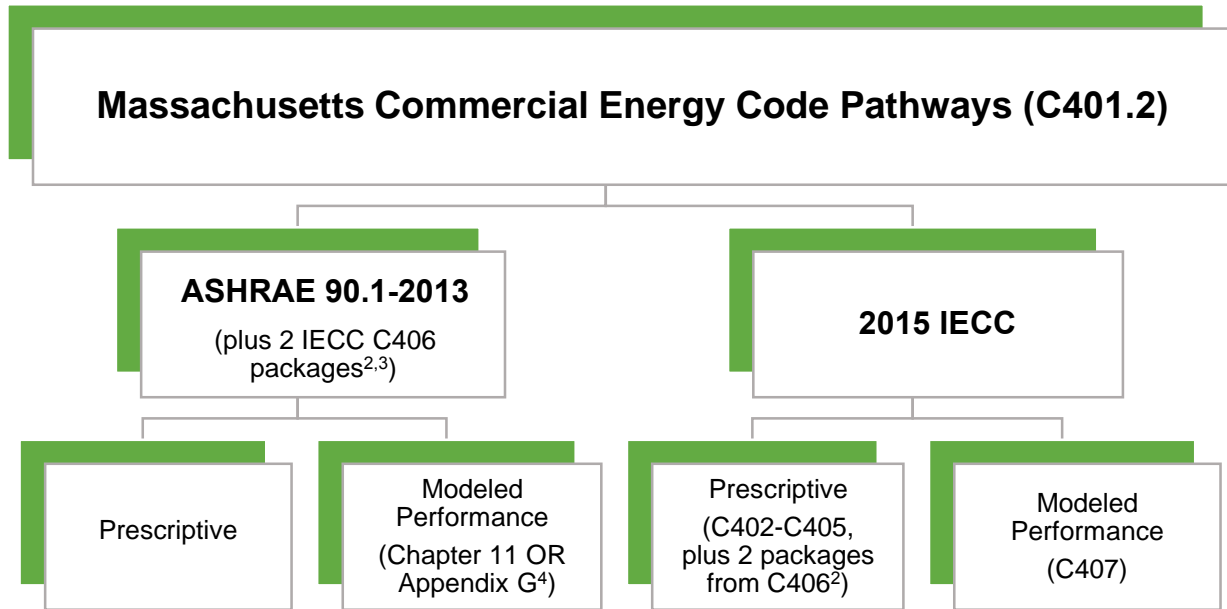


# Energy Code Compliance Paths for New Commercial Buildings

As of January 2, 2017, all new permits for commercial<sup>1</sup> buildings are subject to the latest provisions of the Massachusetts Energy Code found in Chapter 13 of MA 780 CMR. The Massachusetts Commercial Energy Code is based on the International Code Council's (ICC) 2015 edition of International Energy Conservation Code (IECC).

Either the 2015 IECC or ASHRAE Standard 90.1-2013 can be used to demonstrate compliance with the Commercial Energy Code. Each has been modified by amendments specific to the state of Massachusetts, and several amendments that relate to compliance are highlighted below; be sure to check the code for specific amendments.

Both the 2015 IECC and ASHRAE 90.1-2013 options include prescriptive and performance compliance pathways. Detailed descriptions of the compliance options are found in C401.2. The diagram below illustrates the various energy code compliance paths available.



<sup>1</sup> "Commercial" buildings are defined in the IECC as anything that is not detached one- or two-family dwellings, townhouses, or other residential occupancies three stories or fewer above grade plane.

<sup>2</sup> Only one package is required in areas not served by Mass Save® incentive programs.

<sup>3</sup> Projects following ASHRAE compliance must include reduced Lighting Power Density as one of the two packages.

<sup>4</sup> Massachusetts amendments to C401.2 specifically allow Appendix G methodology as a code compliance path.



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# Energy Code Technical Support

## ASHRAE 90.1 Paths

1. **Prescriptive-Based Compliance:** Buildings can comply with the prescriptive path in 90.1. However, a Massachusetts-specific amendment states that buildings must comply with at least two of the options from 2015 IECC Section C406. One of the selected options must be the reduced lighting LPD package (C406.3) As an exception, areas not served by Mass Save® incentive programs ([www.masssave.com](http://www.masssave.com)) need only comply with one of the Section C406 options.
2. **Modeled Performance-Based Compliance:** Buildings can utilize performance modeling to demonstrate compliance using the methodologies in either Chapter 11 or Appendix G of ASHRAE 90.1. If Appendix G is chosen, compliance can be demonstrated using either site or source energy (the conversion factors can be found in the MA code amendments). This path does allow trade-offs across different building components, however sections C402.5, C403.2, C404, C405.2, C405.3, C405.4 and C405.6 of the IECC are mandatory.

## 2015 IECC Paths

1. **Prescriptive-Based Compliance:** Buildings must meet all of the requirements of Sections C402 through C405 plus at least two of the packages from Section C406, although areas not served by Mass Save® Incentive programs ([www.masssave.com](http://www.masssave.com)) need only comply with one option.
2. **Modeled Performance-Based Compliance:** Buildings must demonstrate minimum performance when modeled in accordance with Section C407. This path does allow trade-offs across different building components. However, all projects complying with Section C407 or its approved alternatives must comply with Sections C402.5, C403.2, C404, C405.2, C405.3, C405.4 and C405.6.

## COMcheck

COMcheck (<https://www.energycodes.gov/comcheck>) is a free online tool to demonstrate compliance with either the 90.1 or the IECC prescriptive-based paths. COMcheck allows trade-offs within individual building components such as lighting, envelope and HVAC. Trade-offs cannot be made across different building components (e.g. more insulation cannot be used to allow higher lighting usage). Version 4.0.4 or later of the COMcheck tool is required. **COMcheck submittal is required with permit applications for new commercial construction. This includes the Envelope, Lighting, and Mechanical Compliance Certificates as well as Plan Review Inspection Checklist (per section 107.2.6, Submittal Documents and Construction Control).**

## Compliance with the Massachusetts Stretch Code

As of June 2017, 205 communities have adopted the Stretch Energy Code. For commercial buildings in these communities, the Stretch Code is only applicable to new buildings over 100,000 sq. ft. and new supermarkets, laboratories and conditioned warehouses over 40,000 sq. ft. Under the Stretch Code, there is only one acceptable compliance path for these building types: the **Modeled Performance-Based Compliance utilizing ASHRAE Standard 90.1 Appendix G**. Projects must demonstrate energy performance at least 10% better than the reference building defined in Appendix G. All other commercial building types must comply with the base energy code as described in the sections above - in other words, they are treated just as if they were not in a Stretch Code community.