



## Massachusetts Energy Zero Code

### *Definition of Zero Energy*

**Zero Energy Building.** Zero Energy Building is an Ultra-Low-Energy, Combustion-Free Building that sources 100% of its annual energy from Additional Renewable Energy Sources.

**Ultra-Low Energy.** Utilization of various techniques to maximize lower energy use before the application of renewables.

### *MA Energy Zero Code (MA E-Z Code)*

The MA E-Z Code was developed as an update to the existing Massachusetts Stretch Energy Code (780 CMR 9<sup>th</sup> Edition, Appendix AA). It also builds upon the zero-energy target of the AIA Zero Code appendix to the International Energy Conservation Code (IECC) 2021 by creating state specific specifications through a prescriptive energy efficiency pathway for zero energy. MA E-Z Code is backed up by successful built examples, demonstrating that these targets are generally achievable and cost effective today. There are three focus areas within this code:

1. Load Reduction & Energy Efficiency
2. Electrification
3. Renewable Energy

MA E-Z Code is a prescriptive zero energy code that focuses on prescriptive measures to drive maximum energy efficiency in the building that is supplemented by renewable energy to reach zero energy. Prescriptive measures reduce demand on building systems and utility infrastructure. By doing so, they make zero energy more cost effective from the scale of individual building owners to the scale of the entire commonwealth. The “E-Z” Prescriptive measures address the following categories:

1. Building Thermal Envelope
2. Energy Recovery Ventilation Systems
3. Allowable Fan Horsepower
4. Heat Pump Capacity
5. Service Water-heating Equipment Performance Efficiency
6. Internal Lighting Power Allowance



	AIA Zero Code	MA Energy Zero Code
<b>Energy Efficiency</b>	ASHRAE 90.1-2016 Appendix G (building performance factors, using site energy)	<p><b>Prescriptive Path</b> IECC 2021 + Massachusetts Amendments Incorporating Passive House Principles -OR- <b>Performance Path</b> ASHRAE 90.1-2016 Appendix G (matches IECC Zero Energy Appendix / AIA Zero Code) (building performance factors, using site energy or 2030 projected source fossil fuel) <b>WITH Prescriptive Backstop</b> (same as prescriptive path, but with less strict requirements)</p>
<b>Electrification</b>	n/a	<p>No Combustion, with exceptions (examples of exceptions: labs, healthcare, commercial kitchens, domestic hot water) Electric Vehicle requirements Demand Response requirements</p>
<b>Renewable Energy</b>	Many Renewable Energy Options <i>WITH</i> Weighting Factors (Some do Not Meet Additionality)	<p>Only Renewable Energy Demonstrating Additionality Allowed No Weighting Factors (MA Class I or long-term PPA from any continental US grid with greater than or equal emissions factor to that of ISO-NE) On-site Solar requirements</p>
<b>Other</b>	n/a	Addresses several additional topics; including embodied carbon, refrigerants, commissioning, and energy use disclosure