Mass Save® Energy Code Technical Support Training Offerings
Residential Energy Code Training

To schedule a training session with your group, email: energycodesma@psdconsulting.com

All courses have been approved for continuing education for MA code officials and CSL licensees.

Course 1: The 2025 Residential Stretch Code (180 min.)

The latest version of the Massachusetts Residential Stretch Energy Code (225 CMR 22) went into effect on January 1, 2023, was updated on February 14, 2025, and is in line with the 10th Edition of the Massachusetts State Building Code (780 CMR). The objective of this training program is to provide information to code enforcement officials, contractors, and design professionals regarding changes between the 2018 and 2021 IECC, the stretch code, and the new Municipal Opt-in Specialized Code. The newest version of the Stretch Energy Code brings several significant modifications. The 3-hour course will offer a comprehensive overview of these subjects and more.

Module 1.1: Overview (60 min.)

The latest version of the Massachusetts Residential Stretch Energy Code (225 CMR 22) went into effect on January 1, 2023, was updated on February 14, 2025, and is in line with the 10th Edition of the Massachusetts State Building Code (780 CMR). The objective of this course is to highlight the changes to the new 2025 Residential Stretch Energy Code. Topics discussed will include changes to compliance path options, new requirements for prescriptive path users, and changes to the Energy Rating Index (ERI) and Passive House Compliance Paths along with additional efficiency requirements. Changes to solar readiness and Electric Vehicle wiring will be discussed. The new municipal opt-in code will also be briefly summarized.

Module 1.2: Key Changes (60 min.)

The latest version of the Massachusetts Residential Stretch Energy Code (225 CMR 22) went into effect on January 1, 2023, was updated on February 14, 2025, and is in line with the 10th Edition of the Massachusetts State Building Code (780 CMR). This 1-hour training program will review new energy code provisions in the Massachusetts 10th Edition of the Building Code and significant changes between the 2018 and 2021 International Energy Conservation Code (IECC). It will discuss new requirements of the code since the 2018 IECC, and what additional efficiency requirements apply to stretch code projects.

Module 1.3: Solar Ready & EV (60 min.)

The latest version of the Massachusetts Residential Stretch Energy Code (225 CMR 22) went into effect on January 1, 2023, was updated on February 14, 2025, and is in line with the 10th Edition of the Massachusetts State Building Code (780 CMR). During this 1-hour course, we will cover the new solar-ready provisions, including scope, solar-ready rooftop area requirements, exceptions, roof orientations, documentation, interconnection pathways and roof loads, and electrical requirements. The second portion of this course covers EV ready requirements, including number of parking spaces, wiring requirements, and exceptions. Frequently asked questions about both topics will also be addressed.

Course 2: Residential Existing Buildings (180 min.)

Module 2.1: Overview (60 min.)

Residential renovations, alterations, repairs, and additions make up the largest portion of building permit applications, yet there is confusion as to when the new energy code requires HERS ratings on these projects and when it does not. This course will provide an overview of the new requirements for existing residential buildings. Solar readiness and how it applies will also be discussed. This course will cover several of the most common types of existing home projects and describe the applicability of the most important energy code provisions.

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Module 2.2: Additions (60 min.)

This course covers how an addition is impacted by the new energy code. It also outlines the HERS process and requirements. What is a passing score for an addition? How does solar readiness apply to additions? Do all additions need blower door testing? Examples of different types of additions are used in the course to show when a HERS rating is needed and not needed.

Module 2.3: Alterations (60 min.)

This course covers how an alteration is impacted by the new energy code. It also outlines the HERS process and requirements. What is a passing score for an alteration? How does solar readiness apply to alterations? Do all alterations need blower door testing? Examples of different types of alterations are used in the course to show when a HERS rating is needed and not needed.

Course 3: Ventilation for Tight Homes: Air Sealing Improving IAQ (180 min.)

Module 3.1: Air barrier and Insulation Installation (60 min.)

The installation of a continuous air and thermal barrier is perhaps the best and most cost-effective way to reduce energy waste and save money on utility bills; at the same time, important details are often missed. This course will be framed around the 2021 IECC Air Barrier and Insulation Installation criteria found in Table R402.4.1.1 with photos and graphics to illustrate noncompliant and compliant installation of critical details like attic penetrations, wall-to-ceiling transitions, rim joists, garage walls, knee walls, and tubs and showers on exterior walls. Installing and inspecting insulation to meet code and manufacturer requirements will also be discussed.

Module 3.2: Whole-House Mechanical Ventilation (60 min.)

Mechanical ventilation is as important to indoor air quality as it is for energy conservation. This course will cover the 2021 IECC, 2021 International Residential Code (IRC), and Massachusetts amendments relating to whole-house mechanical ventilation system requirements. This will include when whole-house ventilation is required, how to calculate the minimum design airflow rate, and how to verify installed airflow rates. This course will also provide an overview of different ventilation systems–exhaust only, supply-only and balanced ventilation, including Energy Recovery Ventilators (ERVs) and Heat Recovery Ventilators (HRVs)–along with the pros and cons of each type of system.

Module 3.3: Mechanical Ventilation for Code Compliance (60 min.)

The new requirement of HRV and ERV only systems will be discussed, as well as other code requirements for ventilation systems in residential buildings. This will include when whole-house ventilation is required, how to calculate the minimum design airflow rate, and how to verify installed airflow rates. This course will also briefly summarize the content of Module 3.2.

Course 4: Efficient, Effective, and Code Compliant HVAC and DHW (180 min.)

Module 4.1: Mechanical Systems and Service Water Heating (60 min.)

Mechanical systems and service water heating systems are key elements to energy performance of residential buildings. At the same time, code provisions related to these systems are among those with least code compliance. This course covers code provisions with the highest energy impacts and suggestions for verifying compliance during plan reviews and inspections. Topics will include mechanical system sizing, mechanical piping insulation, controls such as programmable thermostats, heat pump supplementary heat and hot water boiler outdoor temperature setback; circulation systems and demand recirculation systems for hot water, insulation around piping in different scenarios, drain water heat recovery, and heated swimming pools. This course has been updated to reflect the new 2021 IECC requirements.

Module 4.2: Equipment Sizing: Manuals J, S, and D (60 min.)

According to a 2015-16 study on single-family residential homes, only 14% of homes meet the code requirement of designing mechanical equipment based on ACCA Manual S and Manual J. This course covers Manual S requirements and why following Manual S would not only lower energy bills, but also increase comfort. The discussion will include the ACCA design process, as well as the Manual J load calculation process and modeling, which is the first step in sizing equipment properly. It will continue with Manual S oversizing provisions, available software tools to carry out Manual S calculations, and ends with a case study demonstrating how the Manual J and Manual S process works. This course has been updated to reflect the new 2021 IECC requirements.

Module 4.3: Duct Sealing, Testing, and Design (60 min.)

This course discusses code requirements for duct testing, prescriptive duct leakage requirements, and duct insulation and air sealing requirements. With a discussion on best practices in duct insulation, this course will discuss Manual D, which is a process to design duct systems and is required by code. This course has been updated to reflect the new 2021 IECC requirements.

Course 5: Municipal Opt-In Specialized Energy Code for Residential Buildings (60 min.)

Massachusetts recently introduced a new energy code that is available for municipal adoption that goes beyond the typical Stretch Code requirements called the Municipal Opt-In Specialized Energy Code also known as the Specialized Code. This course will provide a comprehensive summary of the requirements of the Specialized Code as they relate to residential buildings and will provide additional background information about the energy code landscape in Massachusetts, as well as applicable Stretch Code provisions that are relevant to the Specialized Code, including electric vehicle readiness, third party compliance paths like HERS and Passive House, and Solar Readiness.

Course 6: The Massachusetts Stretch Code for HERS Raters (180 min.)

The Massachusetts Stretch Energy Code incorporates a blend of energy rating requirements and International Energy Conservation Code (IECC) requirements, which often leads to confusion. This course covers the requirements of the Energy Rating Index (ERI) path, as amended by Massachusetts, and IECC "mandatory" requirements. This course, specifically designed for HERS Raters, reviews details of the ERI path, including rating standard options, renewable energy bonuses, and verification and documentation requirements. It will also discuss every IECC requirement that is mandatory under the ERI path, including envelope, mechanical system, service hot water, and whole-house mechanical ventilation. The Stretch Code requires a completed ENERGY STAR Thermal Enclosure System Checklist, and this course will provide a review of the items required on this checklist in comparison to the IECC Air Barrier and Insulation Installation Criteria, which are also required. The course will also describe duct leakage testing requirements, including IECC and RESNET 301 testing exemptions and related modeling issues. Finally, the course will briefly touch on the alternative ERI path (Passive House), EV-Ready requirements, and solar-ready requirements.