



# Plan Review- COMcheck™ for an Existing Commercial Building 2015 IECC and 9<sup>th</sup> Edition: Commercial

Massachusetts Energy Code  
Technical Support Program



We Speak  Building



## What Is Mass Save®?



- Mass Save® is an initiative sponsored by Massachusetts' gas and electric utilities and energy efficiency service providers, including
  - The Berkshire Gas Company
  - Cape Light Compact
  - Columbia Gas of Massachusetts
  - Eversource Energy
  - Liberty Utilities
  - National Grid
  - Unitil
- The Sponsors of Mass Save work closely with the Massachusetts Department of Energy Resources to provide a wide range of services, incentives, trainings, and information promoting energy efficiency that help residents and businesses manage energy use and related costs.



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of Massachusetts  
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## Existing Buildings . . .



- Renovations dominate permit applications
- Compliance requirements can be confusing
- There are tremendous opportunity for energy savings
- Like new construction COMcheck™ can assist with compliance documentation.

5

## Today's Objectives



- ✓ Be able to determine the type of existing building project being proposed
  1. Addition
  2. Alteration
  3. Repair
- ✓ How to apply the Energy Code to an Existing Building Project
- ✓ How to apply the Energy Code to a Change of Occupancy or Use
- ✓ How to use COMcheck™ for documentation



## Compliance and Plan Review



- ✓ In general, Energy Code does not apply to Existing Buildings (C501.2)
- ✓ Only those areas of a building impacted by the permitted construction are subject to compliance.
- ✓ Energy Code is **not** retroactive!
  - ✓ *If existing systems are not impacted by new work; they are **not** required to be updated.*

7

## Compliance and Plan Review



Example:

### ***Project – Addition to existing offices***

#### Background:

- Existing Offices supported by RTU w/out Economizer
- New Offices to use completely new and separate HVAC system and ducts

#### Compliance Requirements:

- ✓ Existing System does not need to comply with current codes
- ✓ New System for addition must comply
- ✓ If economizer is required (new system) by code it must be added; a FDD must be included
- ✓ New System may require commissioning

8

## Compliance and Plan Review



- ✓ Alterations, Additions, Repairs and Change of Occupancy/Use must comply with IBC, Energy Code and 9<sup>th</sup> Edition of 780 CMR 13.00: Energy Efficiency
- ✓ *Historic Buildings are exempt from the Energy Code (C501.6)*
- ✓ *Where compliance is required Alterations, Additions, Repairs and Changes or Occupancy/Use may comply via ASHRAE 90.1-2013 path (C501.7)*

9

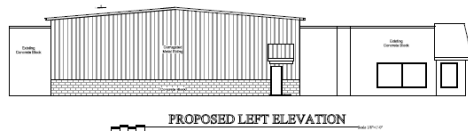
## (C502) Additions . . .



Chapter 2 defines an Addition as:

**ADDITION.** An extension or increase in the *conditioned space* floor area or height of a building or structure.

This reflects new construction added to existing buildings.



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10

## (C502) Additions . . .



- ✓ Addition may comply on its own merits
- or
- ✓ The existing building and Addition may be combined for compliance
- or
- ✓ If the addition and all existing components do not increase the overall UA or energy use – the project complies.

*Use COMcheck™ for the UA Calculation*

11

## (C502) Additions . . .



- ✓ Only the Addition must comply with the Energy Code (C502.2) *UNLESS the "Addition + Existing building" approach is used (previous slide)*
- ✓ New Work must comply with current requirements
- ✓ Existing Building – parts that are not "touched" do not have to be brought up to code.
- ✓ Any portion of the existing building that is uncovered or modified during the addition project must comply.
  - ✓ If a wall cavity is opened and found to be uninsulated – the full cavity must be filled with material having an R-value of 3 per inch or greater.
- ✓ New Mechanical, SWH or Electrical must comply as if new construction

### Compliance:

- ✓ Prescriptive – shall comply with C502.2.1 through C502.2.6.2
- ✓ Addition can comply using ANSI/ASHRAE/IESNA 90-1-2013

12

## (C503) Alterations . . .



Chapter 2 defines an Alteration as:

**ALTERATION.** Any construction, retrofit or renovation to an existing structure other than repair or addition that requires a permit. Also, a change in a building, electrical, gas, mechanical or plumbing system that involves an extension, addition or change to the arrangement, type or purpose of the original installation that requires a permit.

This definition actually includes two separate definitions: one that applies to building construction and the other to building systems. An alteration is any modification or change made to an existing installation. For example, changing refrigerant types or heat transfer fluids in a system are considered alterations. This definition specifically excludes additions or repairs and also ties the term to situations where a permit is required. See Chapter 1 of the IBC, IMC, IPC and the *International Fuel Gas Code*® (IFGC®) for the information regarding when a permit is required.

14

## (C503) Alterations . . .



- ✓ As with Additions, new work must comply with current requirements for new work
- ✓ Any alteration to an existing system involving new work is subject to requirements of the Energy Code
- ✓ Alterations must not cause an existing building or system to be **less** compliant or **use more energy** than before changes were made.

15

## (C503) Alterations . . .



### Exceptions:

1. Storm windows installed over existing fenestration
2. Surface-applied window film installed on existing single-pane *fenestration* assemblies reducing solar heat gain
3. Existing ceiling, wall or floor cavities exposed during construction, provided that these cavities are filled with insulation.
4. Construction where the existing roof, wall or floor cavity is not exposed

16

## (C503) Alterations . . .



### Exceptions (continued):

5. Roof recover
6. *Air barriers* shall not be required for *roof recover* and roof replacement where the *alterations* or renovations to the building do not include *alterations*, renovations or *repairs* to the remainder of the building envelope
7. *Alterations* that replace less than 50 percent of the luminaires in a space, provided that such *alterations* do not increase the installed interior lighting power.

17

## (C503) Alterations . . .



- ✓ Changes in space conditioning –
  - ✓ Any nonconditioned or low-energy space that is altered to become conditioned space must be brought into full compliance
- ✓ Building Envelope –
  - ✓ New Building Envelope assemblies that are part of the alteration shall comply
- ✓ Roof Replacement –
  - ✓ Roof replacement involves removing roof covering and replacing or repairing parts of the roof deck
  - ✓ The roof assembly is exempt if any exposed roof framing cavities are already filled with insulation and left unexposed
  - ✓ *Most commercial applications have insulation above deck and therefore the insulation must be upgraded to meet code requirements*

18

## (C504) Repairs . . .



Chapter 2 defines a Repair as:

**REPAIR.** The reconstruction or renewal of any part of an existing building for the purpose of its maintenance or to correct damage.

- This definition makes it clear a repair is limited to work on the item and does not include complete or substantial replacement or other new work
- Repairs are not required to comply with the Energy Code

19



## (C504) Repairs . . .



Work considered to be repairs . . .

- ✓ Glass-only replacements in an existing sash and frame
- ✓ Roof repairs
- ✓ Air barriers shall not be required for *roof repair* where the repairs to the building do not include *alterations*, renovations or *repairs* to the remainder of the building envelope.
- ✓ Replacement of existing doors that separate conditioned space from the exterior shall not require the installation of a vestibule or revolving door, provided that an existing vestibule that separates a conditioned space from the exterior shall not be removed
- ✓ *Repairs* where only the bulb, the ballast or both within the existing luminaires in a space are replaced, provided that the replacement does not increase the installed interior lighting power.

20

## (C505) Change of Occupancy or Use



- ✓ A change in occupancy that **does not** result in an increase in demand for either fossil fuel or electrical energy does not need to comply to the Energy Code.
- ✓ When the use of a space is changed to another use, the installed lighting wattage shall comply with Section 405.4

22

## COMcheck™



COMcheck™ is a free software developed by the U.S. Department of Energy to assist designers, builders and contractor to determine whether new commercial buildings, additions, and alterations meet the requirements of the IECC and ASHRAE Standard 90.1.

COMcheck™ simplifies compliance for building officials, plan checkers, and inspectors by allowing them to quickly analyze a project.



Two versions are available:

1. COMcheck™ for Windows – a desktop version
2. COMcheck™- Web – online version

Available at:

<https://www.energycodes.gov/comcheck>

**COMcheck™ reports are required per 9<sup>th</sup> Edition,  
780 CMR**

Image from [www.energycodes.gov/comcheck](http://www.energycodes.gov/comcheck)

23

## Help From COMcheck™



The Mandatory COMcheck™ documents are of great help in the Plan Review Process:

- Quality Control check for submitter
- Provides more complete submittal, saving time
- Provides plan review and site inspection document



### COMcheck Software Version 4.0.8.2

#### Inspection Checklist

Energy Code: 2015 IECC

Requirements: 59.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirement, the user certifies that a code requirement will be met and how that is documented is being claimed. Where compliance is itemized in a separate table, a reference to that table

Section # & Req.ID	Plan Review	Complies?	Comments/Ass
C103.2 [PR1]	Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

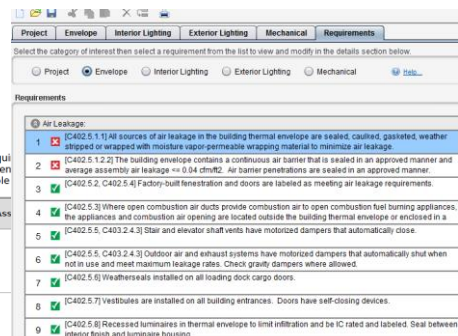


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24

## Using COMcheck™ For Compliance



Let's take a look at how to use COMcheck™ for compliance

COMcheck-Web™

Project title: 2015 IECC

2015 IECC

Register | Forgot/Reset Password?

Log In

New Project

PROJECT ENVELOPE INT. LIGHTING EXT. LIGHTING MECHANICAL REQUIREMENTS Reports

Code/Location

Code: 2015 IECC

State: Massachusetts

City: Boston

If your location is not included here, choose a nearby location with similar weather conditions.

Project Type

New Construction  Addition  Alterations

Project Details (optional)

This information will appear on the compliance report. [Edit Project Details...](#)

Notes:

Building Envelope Area Types

Interior Lighting Method and Areas

Exterior Lighting Areas

Building Area	Area Description	Space Conditioning	Area
1	Select Area Type...		

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26

## Using COMcheck™ For Compliance



Project Tab Screen for New Construction

New Project

PROJECT ENVELOPE

Code/Location

Code: 2015 IECC

State: Massachusetts

City: Boston

If your location is not included here, choose a nearby location with similar weather conditions.

Project Type

New Construction  Addition  Alterations

Compliance Options

Efficiency: Unspecified

Air Barrier: Unspecified

Project Details (optional)

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27

# Using COMcheck™ For Compliance



## Project Tab Screen for Addition

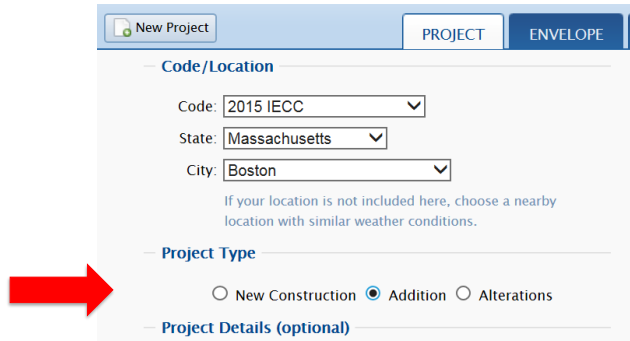


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28

# Using COMcheck™ For Compliance



## Project Tab Screen for Alteration

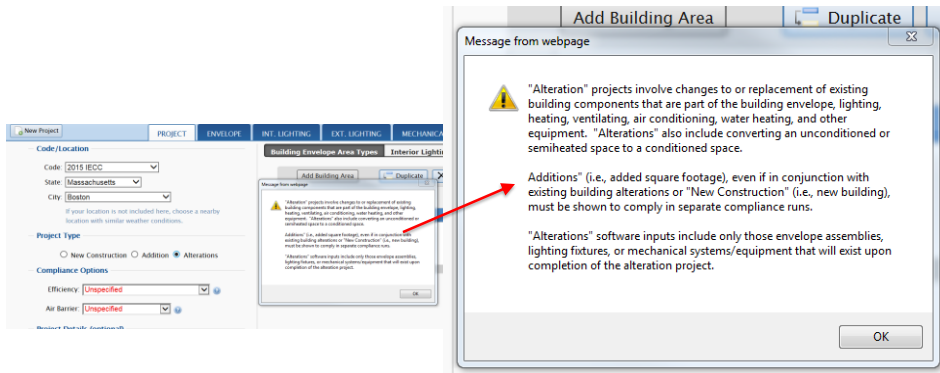


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29

## Using COMcheck™ For Compliance



### Project Tab for Building Area Option -

- Divides the building by use for mixed-use projects
- Drop down lists allows for many different uses

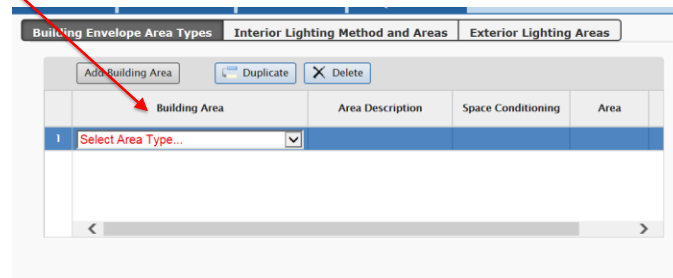


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30

## Using COMcheck™ For Compliance



### Project Tab for Interior Lighting Method and Areas

- Can use the Whole Building Method or
- Building Area Method for interior lighting compliance

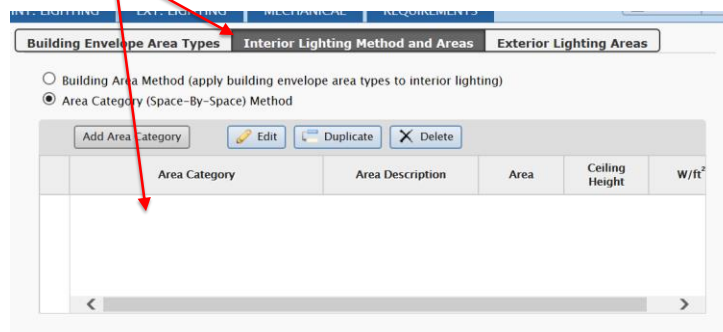


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31

## Using COMcheck™ For Compliance



### Project Tab for Exterior Lighting Areas

- Allows for selection of typical zones
- Further selects Exterior Lighting Area to compute allowable lighting density

Building Envelope Area Types Interior Lighting Method and Areas Exterior Lighting Areas

Zone: Neighborhood business district

Add Exterior Area Duplicate Delete

	Exterior Lighting Area	Area Description	Quantity	W/Unit	Tradable
1	Plaza area		0 ft <sup>2</sup>	0.14	Yes

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32

## Using COMcheck™ For Compliance



### Envelope Tab

- For **Additions** works the same as *New Construction*
  - Enter all the assemblies and properties of the Addition **ONLY**

New Project PROJECT ENVELOPE INT. LIGHTING EXT. LIGHTING

Row: Edit Duplicate Move Up Move Down Delete

Add: Roof Skylight Ext. Wall Window Door Basement Floor

Component	Assembly	Orientation	Building Area Type	Fenestration
Use the Component Buttons above to create a description of your building.				

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33

## Using COMcheck™ For Compliance



### Envelope Tab

- For *Alterations* works the same as *New Construction*
- Enter only assemblies and properties for **Alterations**

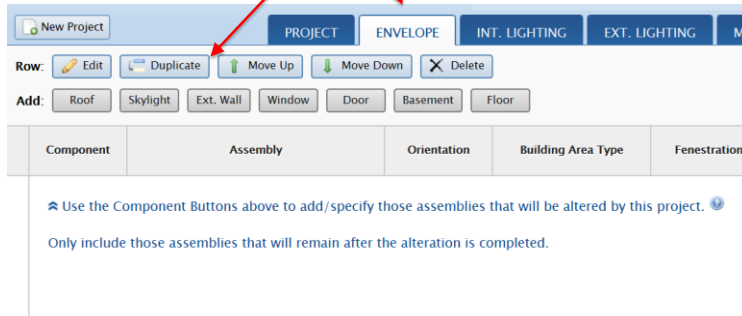


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## Using COMcheck™ For Compliance



- Verify R-Values, insulation location, type and thickness
- Compare to data on COMcheck™

- 2A Vinyl Faced R-11 + R-25 Liner System by PEMB. Manufacturers Provide Thermal Blocking at Steel Support Members
- 2B R-30+ 1/8" Foam Tape (Lamtec Corporation (U-Valle of 0.652))

Data from Plan

**COMcheck™ Data**

Envelope Assemblies	Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor <sub>req</sub>
Roof 1: Metal Building, Standing Seam, Liner System with Thermal Blocks (c), [Bldg. Use 1 - Sales Floor]		1722	11.0	25.0	0.038	0.035
Roof 2: Metal Building, Standing Seam, Liner System with Thermal Blocks (d), [Bldg. Use 1 - Sales Floor]		1536	11.0	25.0	0.038	0.035
Exterior Wall 1: Metal Building Wall, Single Layer Mineral Fiber, [Bldg. Use 1 - Sales Floor]		4219	30.0	0.0	0.147	0.052
Window 1: Metal Frame with Thermal Break:Fixed, Perf. Specs.: Product ID Storefront, SHGC 0.37, PF 1.00, [Bldg. Use 1 - Sales Floor] (b)		174	---	---	0.350	0.380
Door 1: Insulated Metal, Swinging, [Bldg. Use 1 - Sales Floor]		21	---	---	0.410	0.370
Door 3: Glass (> 50% glazing):Metal Frame, Entrance Door, Perf. Specs.: Product ID 106, SHGC 0.37, PF 1.00, [Bldg. Use 1 - Sales Floor] (b)		42	---	---	0.350	0.770
Exterior Wall 2: Metal Building Wall, Single Layer Mineral Fiber, [Bldg. Use 1 - Sales Floor]		648	30.0	0.0	0.147	0.052
Exterior Wall 3: Metal Building Wall, Single Layer Mineral Fiber, [Bldg. Use 2 - Receiving]		1033	30.0	0.0	0.147	0.052
Door 2: Insulated Metal, Swinging, [Bldg. Use 2 - Receiving]		42	---	---	0.410	0.370
Floor 1: Slab-On-Grade:Unheated, Vertical 4 ft., [Bldg. Use 1 - Sales Floor] (c)		338	---	10.0	0.480	0.540
Floor 2: Slab-On-Grade:Heated, Vertical 4 ft., [Bldg. Use 1 - Sales Floor] (c)		70	---	10.0	0.780	0.790

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## Using COMcheck™ For Compliance



### ☐ Verify Envelope Areas –

- ☐ Compare your calculations with COMcheck™

#### Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value
Roof 1: Metal Building, Standing Seam, Liner System with Thermal Blocks (d), [Bldg. Use 1 - Sales Floor]	7722	11.0
Roof 2: Metal Building, Standing Seam, Liner System with Thermal Blocks (d), [Bldg. Use 1 - Sales Floor]	1536	11.0
Exterior Wall 1: Metal Building Wall, Single Layer Mineral Fiber, [Bldg. Use 1 - Sales Floor]	4219	30.0
Window 1: Metal Frame with Thermal Break:Fixed, Perf. Specs.: Product ID Storefront, SHGC 0.37, PF 1.00, [Bldg. Use 1 - Sales Floor] (b)	174	---
Door 1: Insulated Metal, Swinging, [Bldg. Use 1 - Sales Floor]	21	---
Door 3: Glass (> 50% glazing):Metal Frame, Entrance Door, Perf. Specs.: Product ID 106, SHGC 0.37, PF 1.00, [Bldg. Use 1 - Sales Floor] (b)	42	---
Exterior Wall 2: Metal Building Wall, Single Layer Mineral Fiber, [Bldg. Use 1 - Sales Floor]	648	30.0
Exterior Wall 3: Metal Building Wall, Single Layer Mineral Fiber, [Bldg. Use 2 - Receiving]	1033	30.0
Door 2: Insulated Metal, Swinging, [Bldg. Use 2 - Receiving]	42	---
Floor 1: Slab-On-Grade:Unheated, Vertical 4 ft., [Bldg. Use 1 - Sales Floor] (c)	338	---
Floor 2: Slab-On-Grade:Heated, Vertical 4 ft., [Bldg. Use 1 - Sales Floor] (c)	70	---

36

## Using COMcheck™ For Compliance



### Interior Lighting Tab

- ☐ Must add building use categories on Project Tab
- ☐ For both Additions and Alterations Enter data for new work only

Fixtures cannot be added until building use categories have been specified on the Project screen.

37



# Using COMcheck™ For Compliance



Interior Lighting and Exterior Lighting are considered separately

First Step (interior) is to determine the path of compliance

- ✓ Building Area Method or
- ✓ Space by Space Method

The best and easiest way to review is to use the COMcheck™ reports

Verify the information in COMcheck™ with that provided on drawings

## COMcheck Software Version 4.0.8.2 Interior Lighting Compliance Certificate

### Project Information

Energy Code: 2015 IECC  
 Project Title: Retail Store  
 Project Type: New Construction

Construction Site: 123 Main Street, Worcester, MA  
 Owner/Agent: Retailer  
 Designer/Contractor: Architects R Us

**Additional Efficiency Package(s)**  
 High efficiency HVAC. Systems that do not meet the performance requirement will be identified in the mechanical requirements checklist report.

### Allowed Interior Lighting Power

A Area Category	B Floor Area (ft <sup>2</sup> )	C Allowed Watts / ft <sup>2</sup>	D Allowed Watts (B X C)
1-Sale Area (Retail/Sales Area)	7767	1.59	12350
2-Receiving (Warehouse/Fine Material Storage)	1010	0.95	960
Total Allowed Watts =			13309

### Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
<b>1-Sale Area (Retail/Sales Area)</b>				
LED 4: A/A1: 4' LED Linear 2-10' cables: LED Linear 15W:	2	76	30	2280
LED 5: B: 2' LED Linear Surface Mt: LED Linear 15W:	1	4	15	60
LED 6: D: Emer/Exit Combo: LED MR 2W:	2	3	4	12
LED 7: E: Emergency Light: LED MR 2W:	2	12	4	48
LED 8: F: Emergency Light: LED MR 2W:	2	3	2	6
<b>2-Receiving (Warehouse/Fine Material Storage)</b>				
LED 1: A: 4' LED Linear 2-10' cables: LED Linear 15W:	2	4	30	120
LED 2: D: Emer/Exit Combo: LED MR 2W:	2	1	4	4
LED 3: E: Emergency Light: LED MR 2W:	2	1	4	4
Total Proposed Watts =				2534

Interior Lighting PASSES: Design 81% better than code

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38

# Using COMcheck™ For Compliance



## Exterior Lighting Tab

- Zone and Components will be populated based on data provided on Project Tab
- Type of Lighting and properties to be entered

The screenshot shows the software interface with the 'EXTERIOR LIGHTING' tab active. A table lists components, with 'Plaza area (0 ft²)' selected. Below the table, it states 'Tradable Wattage Totals: No exterior fixtures are defined.' Red arrows point from the text in the red box above to the 'Plaza area' row and the 'Tradable Wattage Totals' text.

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39

## Using COMcheck™ For Compliance



Use COMcheck™ to compare and verify:

- Area/Surface Category
- Quantities
- Allowed Wattage
- Compliance Calculation

**COMcheck Software Version 4.0.8.2**  
**Exterior Lighting Compliance Certificate**

**Project Information**

Energy Code: 2015 IECC  
Project Title: Retail Store  
Project Type: New Construction  
Exterior Lighting Zone: 2 (Neighborhood business district)

Construction Site: 123 Main Street, Worcester, MA  
Owner/Agent: Retailer  
Designer/Contractor: Architects R Us

**Allowed Exterior Lighting Power**

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Parking Lot (Parking area)	14834 #2	0.06	Yes	889
Side Walls (Illuminated area of facade wall or surface)	450 #2	0.1	No	45
Front Facade (Entry canopy)	950 #2	0.25	Yes	238
Total Tradable Watts (a) =				1172
Total Allowed Watts =				1172
Total Allowed Supplemental Watts (b) =				600

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.  
(b) A supplemental allowance equal to 600 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

**Proposed Exterior Lighting Power**

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Parking Lot (Parking area 14834 #2): Tradable Wattage				
LED 1: Pole Mt. LED Roadway-Parking Unit 88W	2	6	88	516
Side Walls (Illuminated area of facade wall or surface 450 #2): Non-Tradable Wattage				
LED 2: G. Wall Packs LED Other Fixture Unit 36W	1	5	36	180
Front Facade (Entry canopy 950 #2): Tradable Wattage				
LED 3: H. Area Light on Arm: LED Other Fixture Unit 125W	1	4	147	588
Total Tradable Proposed Watts =				1104

**Exterior Lighting PASSES: Design 31% better than code**

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40

## Using COMcheck™ For Compliance



### Mechanical Tab

- List the Mechanical Systems to be used by the **Addition**
- If the existing system is to be used for the Existing Building as well as the Addition – enter that as one system
- Otherwise – do NOT enter the existing system

New Project

PROJECT ENVELOPE INT. LIGHTING EXT. LIGHTING **MECHANICAL**

Row: Edit Duplicate Move Up Move Down Delete

Add: HVAC System Heat Pump Plant Water Heating

Component	Equipment Type	Quantity	Equipment Capacity	Fuel Type/Heat Source	Condenser Type	Fan System
<a href="#">Use the mechanical equipment buttons above to list the mechanical systems in your building.</a>						

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41

## Using COMcheck™ For Compliance



### Mechanical Tab

- List the Mechanical Systems to be used by the **Alteration** Only

Use the mechanical equipment buttons above to add/specify those mechanical systems that will be altered by this project. Only include those systems that will remain after the alteration is completed.

Component	Equipment Type	Quantity	Equipment Capacity	Fuel Type/Heat Source	Condenser Type	Fan System
<p>Use the mechanical equipment buttons above to add/specify those mechanical systems that will be altered by this project. Only include those systems that will remain after the alteration is completed.</p>						

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42

## Using COMcheck™ For Compliance



Use COMcheck™ to compare and verify:

- The equipment shown on drawings
- Efficiencies
- Controls



COMcheck Software Version 4.3.5.1

### Mechanical Compliance Certificate

#### Project Information

Energy Code: 2015 IECC  
 Project Title: [REDACTED]  
 Location: [REDACTED]  
 Climate Zone: [REDACTED]  
 Project Type: [REDACTED]

Construction Site: [REDACTED]

Owner/Agent: [REDACTED]

Designer/Contractor:  
 Arthur Pakatar  
 The Pakatar Group, LLC  
 27 Colchess Road  
 Water-Vliet, New York 12189  
 518-674-1504  
 art@thepakatargroup.com

#### Additional Efficiency Package(s)

Reduced interior lighting power. Requirements are implicitly enforced within interior lighting allowance calculations.

#### Mechanical Systems List

##### Quantity System Type & Description

1 HVAC System (Single Zone w/ PerimeterSystem);  
 Heating: 1 each - Duct Furnace, Gas, Capacity Unknown  
 Proposed Efficiency = 95.00% Eo, Required Efficiency = 90.00% Eo  
 Cooling: 1 each - Split System, Capacity Unknown, Air-Cooled Condenser, Air Economizer  
 Proposed Efficiency = 13.00 SEER, Required Efficiency: 13.00 SEER

#### Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2015 IECC requirements in COMcheck Version 4.3.5.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

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43

## Using COMcheck™ For Compliance



Use COMcheck™ Inspection Checklist to:

- Review what code sections that are applicable
- Verify the information and/or documentation is provided
- See what works and what doesn't

### COMcheck Software Version 4.0.8.2 Inspection Checklist

Energy Code: 2015 IECC

Requirements: 59.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req. ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR1]	Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

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## QUESTIONS?



## Energy Code Support



Questions about the energy code?

**Energy Code Support Hotline:**

855-757-9717

**Energy Code Support Email:**

energycodesma@psdconsulting.com

47

## New Buildings and Major Renovations – Commercial



- **Incentives for efficiency levels beyond code and/or industry standard baselines:**
  - **Whole building incentives**
  - **System incentives including**
    - Air Compressors
    - Chillers
    - Lighting and Lighting Controls
    - Gas-Fired Heating Equipment
    - Variable Speed Drives
    - Custom Measures
    - And more

We also offer incentives and rebates for existing buildings.  
Please visit [www.MassSave.com](http://www.MassSave.com) for the details

48



We Speak Building



Energy Code Technical Support Program

# Thanks!

**Art Pakatar**  
**Leidos Energy Code Trainer**

Massachusetts Energy Code  
Technical Support Program



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