

How to use the 2021 WSEC-C Compliance Documentation Webtool



WSEC Commercial Technical Support Team:

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WSEC Commercial Technical Support




Duane Lewellen,
Lewellen Associates

- On-call technical support thru 3 avenues
 - Telephone hot line – **360-539-5300**
 - Online form – **<https://www.waenergycodes.com>**
 - Email inquiries – **com.techsupport@waenergycodes.com**
- Classroom and webinar training
- We administer the technical support and compliance documentation webtool

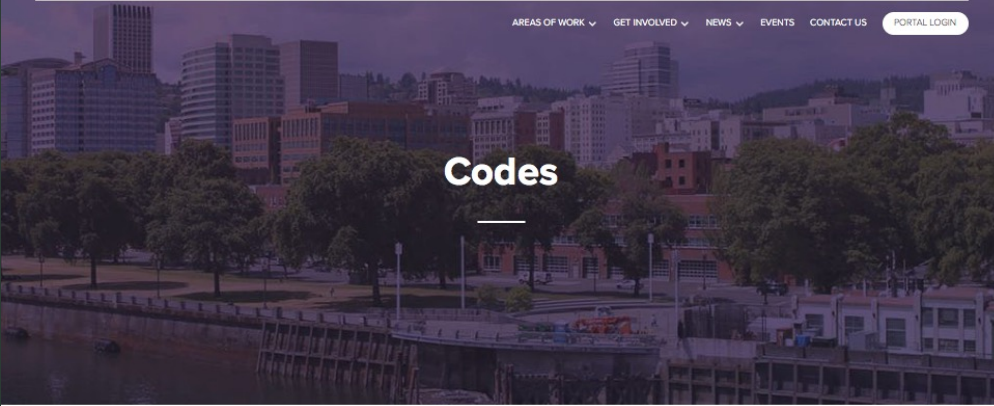


Lisa Rosenow, ETC



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Codes

Increasing progressive effectiveness of energy codes


The NEEA Codes and Standards program supports regional stakeholders in the development and adoption, training and implementation of energy codes. States engage in the code development process along different cycles and code versions, but all states now use the International Energy Conservation Code (IECC) as a baseline for their commercial energy codes. All states except Oregon now use the IECC as the basis of their residential code. The adoption of codes is the responsibility of state code boards or agencies. Official state-by-state energy code information can be found on state building code websites:

Idaho - <http://dbs.idaho.gov/boards/index.html>

Oregon - <http://www.cbs.state.or.us/external/bcd/>


Washington - <https://sbcc.wa.gov/>

Montana - <http://svc.mt.gov/gov/boards/>




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Commercial: Blake Shelide
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Commercial:
com.techsupport@waenergycodes.com

WSEC technical support services are made possible thanks to the generous support of the Northwest Energy Efficiency Alliance

www.neea.org

Today's Presentation

- This presentation represents ETC's *unofficial* interpretation of WA State Energy Code intent.
- Our technical support team is not an affiliate, nor do we speak for the Washington State Building Code Council (SBCC).
- The WSEC commercial technical support we provide is advisory only and non-binding.



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WSEC DOCUMENTS



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Welcome to the WSEC Commercial Technical Support Website

The effective date of the 2021 WSEC is MARCH 15TH, 2024. Refer to announcement on the [SBCC webpage](#).

This website provides helpful technical resources and supports the process of demonstrating compliance with the Washington State Energy Code (WSEC) Commercial Provisions. Features and resources available include an energy code documents portal, compliance documentation forms and **online tools**, searchable frequently asked questions feature and one-on-one technical support. The online compliance documentation webtool includes a code edition selector so users can select the applicable WSEC edition for their commercial project. This online resource is chock full of helpful information and compliance verification tools.

Compliance with the Energy Code is required throughout WA State for all new construction, additions and retrofit projects. When submitting your project for a building, electrical or mechanical permit, information required includes the Code provisions that apply to the project and the design measures taken to comply with these provisions. Select the Jurisdiction Information icon for specific information about each jurisdiction.

2021 WSEC-C EDITION WEBTOOLS FOR ENVELOPE, LIGHTING & MECHANICAL ARE AVAILABLE NOW!!! These online tools are available to start navigating the new requirements of the 2021 WSEC-C.

READY TO GET STARTED? Select Compliance Tools in the left sidebar.



Fact sheets, on-demand webinars
and classroom trainings

WSEC Education



Jurisdiction contact information,
WSEC compliance submittal
requirements

Jurisdiction Information




Code documents, official
interpretations and amendments

WSEC Documents

Topics we'll discuss today ~


1. Technical support resources
2. General project information
3. Lighting compliance features
4. Envelope compliance features
5. Mechanical compliance features
6. Compliance documentation output reports
7. Questions and answers

Technical Support

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Home Contact Us My Projects Logout

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MY ACCOUNT

COMPLIANCE TOOLS

WSEC DOCUMENTS

NEWSROOM

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EDUCATION AND RESOURCES


ON DEMAND TRAINING

ASK A WSEC QUESTION

JURISDICTION INFORMATION


Ask a Question

Do you have questions about the WSEC commercial provisions or the compliance documentation tools? Technical support is available. Peruse our frequently asked questions menu for answers to common and not-so-common questions shared with us by your industry colleagues. Would you like to correspond via email or speak with a WSEC technical expert? Complete a request form and a WSEC expert will contact you.




Menu of questions and answers for various WSEC topics

Frequently Asked Questions



Describe your question(s) and contact a WSEC technical expert

WSEC Technical Support



How to find what you are looking for

Navigating Website

Technical Support



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[Home](#)

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[My Projects](#)

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JURISDICTION INFORMATION



RESIDENTIAL SUPPORT



GENERAL



ADMIN



Washington State Energy Code Technical Support

[Go Back to Previous Page](#)

Select a general technical support topic from the drop-down menu, complete the online inquiry form below and select Submit. For questions regarding the **WSEC-C Commercial Provisions** and **WSEC Commercial Compliance Documentation Webtool**, a member of our technical support team will respond to your inquiry within two business days.

Refer to Additional Technical Support Topics below for information regarding technical support for the WSEC-R Residential Provisions, the Total System Performance Ratio (TSPR) webtool, the Seattle Energy Code and the Clean Buildings Act

Select A Technical Support Topic

(Select One)



Inquiry Information

All fields with an ★ are required

★ Briefly explain what your inquiry
is about


Related WSEC Section Numbers

Technical Support Topics

- Technical support for the **WSEC commercial** requirements
- **WSEC webtool technical support**
- TSPR webtool assistance by PNNL
- WSU Energy Extension technical support for the WSEC residential requirements
- Seattle Energy Code
- WA State Clean Bldgs Performance Standard


The screenshot shows the Washington State Energy Code Technical Support webtool interface. The header includes the logo and navigation links: Home, Contact Us, My Projects, and Logout. The left sidebar contains a user profile for Lisa Rosenow with a LOGOUT button, and a menu with options: MY ACCOUNT, COMPLIANCE TOOLS, WSEC DOCUMENTS, NEWSROOM, TECHNICAL SUPPORT, EDUCATION AND RESOURCES, ON DEMAND TRAINING, ASK A WSEC QUESTION, JURISDICTION INFORMATION, RESIDENTIAL SUPPORT (highlighted with a red box), GENERAL, and ADMIN. The main content area is titled "Washington State Energy Code Technical Support" and includes instructions to select a technical support topic from a drop-down menu. A dropdown menu is open, showing a list of options: "✓ (Select One)", "Ask a 2018 WSEC-C Commercial Question", "Ask a 2021 WSEC-C Commercial Question", "Request WSEC-C Webtool assistance" (highlighted with a blue bar), "Request WSEC-C TSPR Webtool assistance", "Ask a WSEC-R Residential Question", "Ask a Seattle Energy Code Question", and "Ask a Clean Building Energy Performance Standard Question". Below the dropdown, there is a text input field labeled "Briefly explain what your inquiry is about" and a section for "Related WSEC Section Numbers".

Your Account Project List

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HomeContact UsMy ProjectsLogout

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MY ACCOUNT

COMPLIANCE TOOLS

WSEC DOCUMENTS

NEWSROOM

TECHNICAL SUPPORT

RESIDENTIAL SUPPORT

GENERAL

ADMIN

My Projects

[New Project](#)

Features include project specific WSEC provision requirements lists and interactive compliance documentation forms for envelope, lighting and mechanical. Click on **NEW PROJECT** button to explore this compliance documentation tool.

Search:

Last Update	Project Title	Project Address	Code Edition	Status	Manage Project
10/15/2025	Sample Department Store	1234 Main Street Shoreline, King County, WA 98133	2021 WSEC	<div>In Progress</div>	Edit Share Delete
10/15/2025	Lighting Upgrade Project Shared with Kelly Lee	1234 Main Street WA County, WA 98501	2021 WSEC	<div>In Progress</div>	Edit Share Delete

Share Your Project

The screenshot displays the Washington State Energy Code (WSEC) portal interface. A modal window titled "Share Your Project - Sample Department Store" is open, prompting the user to "Enter an email to invite another team member to view and edit your project." The modal includes an "Email Address" input field containing "team_member@abconstruction.com" and a "Share" button. A red arrow points from the "Share" button in the modal to the "Share" button in the "Manage Project" dropdown of the "Lighting Upgrade Project" in the project list below.

Share Your Project - Sample Department Store

Enter an email to invite another team member to view and edit your project.

Email Address: [Share](#)


Project List:

Last Update	Project Title	Project Address	Code Edition	Status	Manage Project
10/15/2025	Sample Department Store	1234 Main Street Shoreline, King County, WA 98133	2021 WSEC	In Progress	Edit Share Delete
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General Project Information

New Project

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HomeContact UsMy ProjectsLogout

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MY ACCOUNT

COMPLIANCE TOOLS

CREATE NEW PROJECT

2015 WSEC EXCEL FORMS

2018 & 2021 WSEC WEBTOOLS

WSEC DOCUMENTS


NEWSROOM

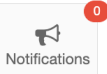
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RESIDENTIAL SUPPORT

GENERAL

ADMIN

Get Started

Notifications

1
Step 1
Project Information

2
Step 2
Discipline Information

3
Step 3
Download and Submit

Close

GET STARTED - To set up a new project, select the energy code edition that the project is required to comply with. Note that once the energy code edition has been selected and saved, this project detail cannot be changed. The next step is to enter all applicable general project information. Under *Project Type*, select whether the project is new construction, an alteration or a combination project such as an addition + alteration. Check boxes selected under *Project Scope - Disciplines* activates each discipline webtool, which are then accessed under Step 2 - Discipline Information. For more detailed instructions, select the Get Started button in the upper right corner of this webpage.

Project Information

To set up a project, enter general information about the overall project scope and identify all disciplines that will be included.

Select Energy Code

Select the edition of the energy code that the project is required to comply with based on the estimated permit submittal date.


★ Energy Code

☐ 2015 Washington State Energy Code


☐ 2018 Washington State Energy Code

☐ 2021 Washington State Energy Code

Step 1 - General Project Information

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COMPLIANCE TOOLS

CREATE NEW PROJECT

2015 WSEC EXCEL FORMS

2018 & 2021 WSEC WEBTOOLS

WSEC DOCUMENTS

NEWSROOM

TECHNICAL SUPPORT

RESIDENTIAL SUPPORT

GENERAL

ADMIN

1
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★ Energy Code

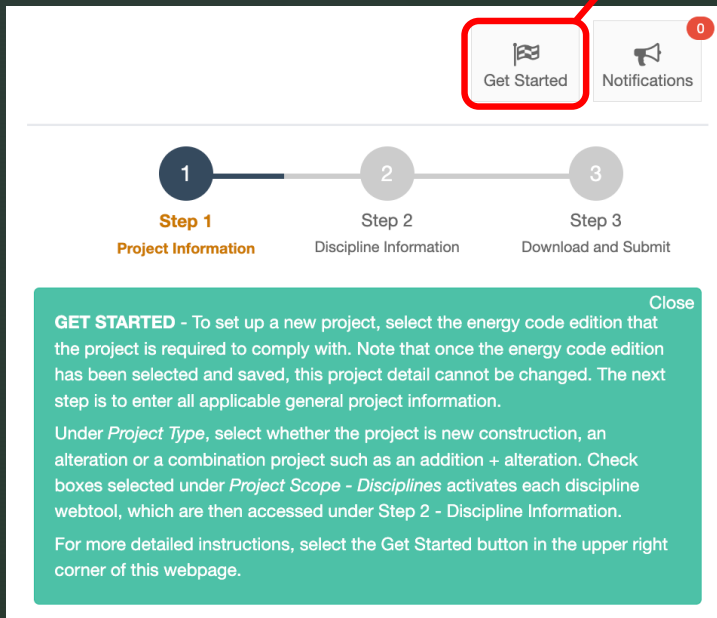
i

☐ 2015 Washington State Energy Code

☐ 2018 Washington State Energy Code

☐ 2021 Washington State Energy Code

General Instructions



GET STARTED - To set up a new project, select the energy code edition that the project is required to comply with. Note that once the energy code edition has been selected and saved, this project detail cannot be changed. The next step is to enter all applicable general project information.

Under *Project Type*, select whether the project is new construction, an alteration or a combination project such as an addition + alteration. Check boxes selected under *Project Scope - Disciplines* activates each discipline webtool, which are then accessed under Step 2 - Discipline Information.

For more detailed instructions, select the Get Started button in the upper right corner of this webpage.

Close

WSEC DISCIPLINE INFORMATION INSTRUCTIONS

Getting Started

There are three steps to completing WSEC compliance documentation using this new webtool.

- *Step 1 Project Information* – Information entered under Step 1 is applied to and informs all disciplines in the webtool.
- *Step 2 Discipline Information* – Each discipline compliance documentation webtool is activated by selecting the discipline on the Project Information page.
- *Step 3 Print and Submit* – After all necessary information has been entered and compliance with all applicable WSEC provisions have been verified, go to Step 3 to generate PDF files of your WSEC compliance documentation. These files may be printed and turned into the jurisdiction or submitted electronically as a PDF file through the jurisdiction's online permit submittal system. Refer to Jurisdiction information for contact and permit submittal information.

Smart Tools

- *Smart Requirements Lists* – These tools generate a consolidate list of applicable WSEC provisions for the project for each discipline based on answers provide for general and discipline specific questions. Smart Requirements Lists may be used as a design or QA/QC tool, and are included in the permit submittal documentation for code compliance.
- *Smart Compliance Documentation Consoles* – Consoles are where detailed information about the proposed envelope, lighting and mechanical systems are entered. Compliance verification within the consoles checks individual projects details and overall project compliance information. For envelope this includes prescriptive insulation requirements and if applicable, component performance (UA trade-off) calculations. For lighting this includes lighting power allowance and proposed lighting power density calculations. For mechanical this includes equipment efficiencies including better than code multipliers applied to these efficiencies to qualify for various provision exceptions. Consoles generate WSEC compliance documentation output forms that are submitted to a jurisdiction along with the project plans.

Is this a test project?

Checking out the new compliance tool? Feel free to set up test projects and explore the various features of the new WSEC compliance documentation webtools. Please indicate if the project is a test by selecting Yes to this question under Project General Information.

Project Location and Applicant Information

Provide contact information for the team member who is responsible for submitting WSEC compliance documentation to the jurisdiction and can answer questions the jurisdiction may have about how the project complies with the WSEC.

How to document the Building and Project Size and Building Type

- *New complete building or shell & core building* – Enter the same value for the total building area and the project area.
- *Building addition only* – For the project area, enter the total sf of the new addition only. For the building area, enter the total sf area of the addition and the existing building combined.
- *Building alterations* – For the project area, enter the total sf area that will be included in the alteration project permit submittal. For the building area, enter the total sf area of the existing building. Note that the alteration project area entered cannot be larger than the total building area (will trigger an error message).
- *Building type* – Select the building type that best describes the majority of the project area.

Occupancy Group

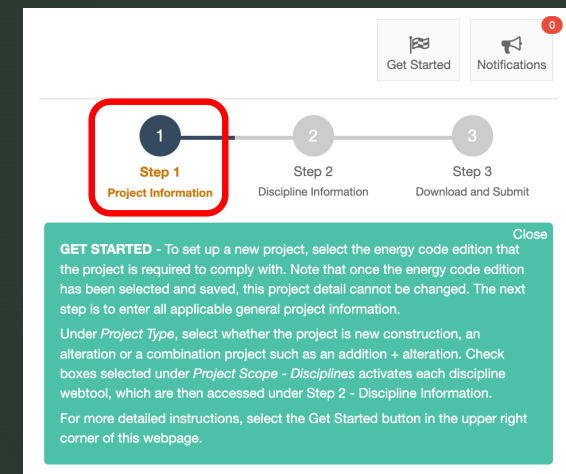
Information entered into this section informs the envelope, lighting and mechanical compliance documentation webtools.

- *All commercial* – All areas of the building are commercial.
- *All commercial Group R* – Includes Group R2, R3 and R4 buildings that have more than three stories above grade and all Group R1 (any number of stories above grade).
- *Mixed use* – A building that has *more than three stories above grade* and is a combination of commercial and Group R occupancies. For mixed use, the entire building is required to comply with the commercial provisions of the WSEC.
- *Mixed occupancy* – A building that has *three stories or less above grade* and is a combination of commercial and Group R occupancies. For mixed occupancy, only the commercial areas of the building are required to comply with the commercial provisions of the WSEC. Areas in the building classified as Group R2, R3 and R4 may comply with the residential provisions of the WSEC. In this case, only include the commercial areas of the project in this compliance documentation tool. Refer to Residential Requirements in the left-hand information bar of this website for WSEC residential energy code resources and technical support information.


Step 1 - General Project Information

General Project Details


- Energy code editions - 2018 WSEC-C, 2021 WSEC-C and in the future 2021 SEC-C, 2024 WSEC-C & 2024 SEC-C
- Project title, location, jurisdiction and applicant contact information
- Occupancy types
- Project types - New construction types and existing building alterations
- Project scope - Disciplines and space conditioning category
- Building project size and use type
- General project compliance path



Step 1 - Energy Code Edition

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COMPLIANCE TOOLS

WSEC DOCUMENTS

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RESIDENTIAL SUPPORT

GENERAL

ADMIN

Project: **Sample Department Store - 2021
WSEC**

Back to My Projects

Get StartedShareNotifications

1Step 1
Project Information

2Step 2
Discipline Information
INCOMPLETE Information

3Step 3
Download and Submit

Project Information

To set up a project, enter general information about the overall project scope and identify all disciplines that will be included.

Select Energy Code

Select the edition of the energy code that the project is required to comply with based on the estimated permit submittal date.

★ Energy Code ⓘ

☐ 2015 Washington State Energy Code

☐ 2018 Washington State Energy Code

☒ 2021 Washington State Energy Code

Energy Code Edition

Walk-In Freezer

2021 WSEC selected

Energy code edition is a primary project detail that cannot be changed once this input is saved. Confirm project edition before proceeding.

Edition is Correct

Change Edition

☐ Wireless Service Equipment Shelter

Building & Project Size

For **Total Floor Area of All Project Areas**, enter the total square feet of all building areas included in the project scope. This includes new tenant spaces, additions, spaces undergoing an alteration and all levels of space conditioning. For **Building Total Floor Area After Project**, enter the resulting total square feet of the building after the project scope has been completed. For alteration projects, provide best estimate for Building Total. For new buildings and alterations that do not increase the building footprint, these two entries will be the same value.

* Maximum Number of Floors Above Grade

1

* Total Floor Area Of All Project Areas (SF)

50,000

* Building Total Floor Area After Project (SF)

50,000

General Project Details

- Project title and location
- Authority having jurisdiction (AHJ)
- Applicant contact information

Project General Information

All fields with an * are required to proceed to Step 2.

* Project Title	<input type="text" value="Sample Department Store"/>
Project Street Address	<input type="text" value="1234 Main Street"/>
Unit or Suite Number	<input type="text"/>
City	<input type="text" value="Shoreline"/>
County	<input type="text" value="King"/>
Zip Code	<input type="text" value="98133"/>
Owner or Representative	<input type="text" value="ABC Construction"/>
Jurisdiction	<input type="text" value="King County"/>
	Click here to view all jurisdictions
Applicant Name	<input type="text" value="Lisa Rosenow"/>
Applicant Email	<input type="text" value="lrosenow@evergreen-tech.net"/>
Applicant Phone	<input type="text" value="360-539-5202"/>

General Project Details

ACTUAL OR TEST PROJECT?

Webtool can be used to generate project compliance documentation and can be used as a testing design tool.

Project General Information

All fields with an * are required to proceed to Step 2.

* Project Title

Sample Department Store

* Is this a test project?

☒ Yes ☐ No

Occupancy Types

- Select the Occupancy Type that most closely describes the project
- A core detail that defines **envelope** requirements and some lighting & mechanical

* Occupancy Type

Select the Occupancy Type that applies to the overall project. This is a primary project detail that affects the energy code requirements that apply to the project and the compliance results based on data entered under Step 2.

- ☒ All Commercial
- ☐ All Group R - R2, R3 & R4 over 3 stories and all R1
- ☐ Mixed Use - Commercial + Group R building over 3 stories ⓘ
- ☐ Mixed Occupancy - Commercial + Group R building 3 stories or less ⓘ
- ☐ Clear

Project Types - New and Existing

New Construction

- Whole new buildings
- Building additions
- Initial tenant improvements







*** Project Type**

Select all that apply to scope of project.

New Construction & Additions

- ☒ New Building
- ☐ Building Addition
- ☐ Shell & Core
- ☐ Tenant Spaces – First Build Out
- ☐ Clear

Existing Building Retrofit

- ☐ Alteration  
- ☐ Change in Space Conditioning 
- ☐ Change in Occupancy  
- ☐ Historic Building 

Existing Buildings

- Alterations - Upgrades to envelope elements, lighting and mechanical systems
- Change of space conditioning or occupancy where the alteration area shall be brought up to compliance with the current WSEC-C per Section C505
- Buildings officially designated as historic per Section C501.5

Combination Alteration Projects

* Project Type

Select all that apply to scope of project.

New Construction & Additions

- ☐ New Building
- ☒ Building Addition
- ☐ Shell & Core
- ☐ Tenant Spaces – First Build Out
- ☐ Clear

Existing Building Retrofit

- ☐ Alteration
- ☒ Change in Space Conditioning
 - ☒ Low energy converted to Semi-heated
 - ☐ Low energy converted to Fully Conditioned
 - ☐ Semi-heated converted to Fully Conditioned
- ☐ Change in Occupancy
- ☐ Historic Building

- Building additions combined with existing area(s) undergoing an alteration
- Existing building alterations combined with area(s) undergoing a change in space conditioning and/or occupancy

Learning Moments

- Look for "Information" icons
- Provides helpful details about the energy code requirements

The screenshot shows a software interface for 'Existing Building Retrofit'. It features a list of options with checkboxes and information icons (i). The options are:

- ☐ Alteration (i) (i)
- ☐ Change in Space Conditioning (i) (i)
- ☐ Change in Occupancy (i) (i)
- ☐ Historic Building (i)

A red callout box highlights the 'Change in Space Conditioning' option and its associated text:

When is a change in space conditioning required to be brought up to full compliance with the current WSEC?

1) An unconditioned space undergoes a mechanical alteration to become a semi-heated or fully conditioned space;
2) A semi-heated space undergoes a mechanical alteration to become a fully conditioned space.

A project that adds cooling capacity to a fully heated-only space, or adds heating capacity to a space that originally only had cooling; does not trigger the Change in Space Conditioning requirements of the WSEC.

Select all that apply to the project scope

- Disciplines - Envelope, lighting & mechanical systems
- Space conditioning - The combined area of each category is checked separately for **envelope** compliance.

Project Scope

Select all that apply to scope of project.

* Disciplines:

- ☒ Envelope
- ☒ Lighting
- ☒ Mechanical

* Space Conditioning Category: ⓘ

- ☒ Fully Conditioned ⓘ
- ☐ Walk-in Cooler ⓘ
- ☐ Walk-in Freezer ⓘ
- ☐ Warehouse Cooler ⓘ
- ☐ Warehouse Freezer ⓘ
- ☒ Semi-heated ⓘ
- ☐ Greenhouse ⓘ
- ☐ Small Equipment Building (500 sf or less) ⓘ

Miscellaneous Categories:

- ☐ Building Systems Alteration Only - No Envelope ⓘ
- ☐ Low Energy Space ⓘ
- ☐ Wireless Service Equipment Shelter

Select all that apply to the project scope

- Disciplines - Envelope, lighting & mechanical systems
- Space conditioning - The combined area of each category is checked separately for **envelope** compliance.

For lighting and/or mechanical systems only alterations, indicate project scope does not include envelope.

Project Scope

Select all that apply to scope of project.

* Disciplines:

- ☐ Envelope
- ☒ Lighting
- ☒ Mechanical

* Space Conditioning Category: ⓘ

- ☒ Fully Conditioned ⓘ
- ☐ Walk-in Cooler ⓘ
- ☐ Walk-in Freezer ⓘ
- ☐ Warehouse Cooler ⓘ
- ☐ Warehouse Freezer ⓘ
- ☒ Semi-heated ⓘ
- ☐ Greenhouse ⓘ
- ☐ Small Equipment Building (500 sf or less) ⓘ

Miscellaneous Categories:

☒ Building Systems Alteration Only - No Envelope ⓘ

- ☐ Low Energy Space ⓘ
- ☐ Wireless Service Equipment Shelter

WSEC Compliance Path

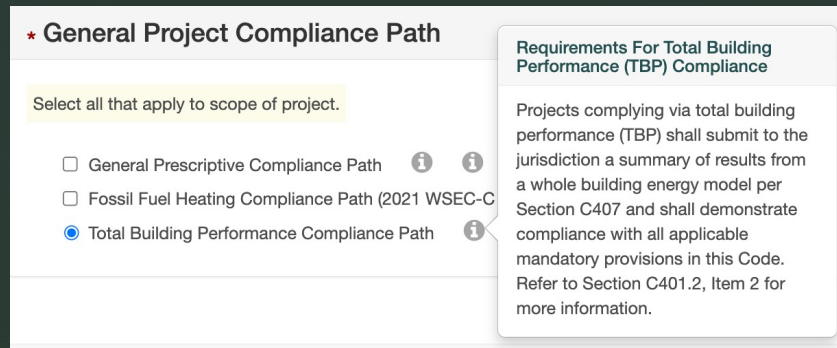
*** General Project Compliance Path**

Select all that apply to scope of project.

☒ General Prescriptive Compliance Path ⓘ ⓘ
☒ Fossil Fuel Heating Compliance Path (2021 WSEC-C only)
☐ Total Building Performance Compliance Path ⓘ

- **General Prescriptive Path** - Comply with all applicable mandatory and prescriptive requirements per Section C401.2 Item 1.
- **Fossil Fuel Path** - Applicable to projects with fuel-fired space heating and service water heating equipment. Increases the number of C406 Additional energy efficiency measure credits required for the project per Section C401.3.
- Building Additions or Change of Space Conditioning or Occupancy may comply as a stand-alone project or may be combined with all existing building areas to demonstrate compliance with the current code.

WSEC Compliance Path



The screenshot shows a web interface for selecting a compliance path. The title is '* General Project Compliance Path'. Below it, a yellow box says 'Select all that apply to scope of project.' There are three radio button options: 'General Prescriptive Compliance Path', 'Fossil Fuel Heating Compliance Path (2021 WSEC-C)', and 'Total Building Performance Compliance Path'. The third option is selected. To the right, a tooltip titled 'Requirements For Total Building Performance (TBP) Compliance' provides details about the requirements, including submitting a whole building energy model and demonstrating compliance with mandatory provisions.

*** General Project Compliance Path**

Select all that apply to scope of project.

- ☐ General Prescriptive Compliance Path
- ☐ Fossil Fuel Heating Compliance Path (2021 WSEC-C)
- ☒ Total Building Performance Compliance Path

Requirements For Total Building Performance (TBP) Compliance

Projects complying via total building performance (TBP) shall submit to the jurisdiction a summary of results from a whole building energy model per Section C407 and shall demonstrate compliance with all applicable mandatory provisions in this Code. Refer to Section C401.2, Item 2 for more information.

Total Building Performance Path Documentation

- Whole building energy model results per Section C407 demonstrates the proposed design EUI is \leq the standard reference design EUI.
- Demonstrate compliance with all applicable mandatory requirements per Section C407.2.
- Include Requirements List reports for all disciplines and compliance documentation output reports for lighting and mechanical.

Building Size & Use Type

Building & Project Size

For **Total Floor Area of All Project Areas**, enter the total square feet of all building areas included in the project scope. This includes new tenant spaces, additions, spaces undergoing an alteration and all levels of space conditioning. For **Building Total Floor Area After Project**, enter the resulting total square feet of the building after the project scope has been completed. For alteration projects, provide best estimate for Building Total. For new buildings and alterations that do not increase the building footprint, these two entries will be the same value.


* Maximum Number of Floors Above Grade	<input type="text" value="1"/>
* Total Floor Area Of All Project Areas (SF)	<input type="text" value="50,000"/>
* Building Total Floor Area After Project (SF)	<input type="text" value="50,000"/>

Building Use Type


Select the primary building use type from the drop down menu. If the building includes more than one use type designation, enter under Additional Building Use Type. Up to four additional building use types may be entered.

* Primary Building Use Type	<input type="text" value="Retail, General Sales"/>	▼
Additional Building Use Type	<input type="text" value="Warehouse, General Storage"/>	▼
		<input type="button" value="Remove"/>
<input type="button" value="Add Another Building Use Type"/>		

Step 2 - Discipline Information

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HomeContact UsMy ProjectsLogout

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MY ACCOUNT

COMPLIANCE TOOLS

WSEC DOCUMENTS

NEWSROOM

TECHNICAL SUPPORT

RESIDENTIAL SUPPORT

GENERAL

ADMIN

Project: **Sample Department Store - 2021
WSEC**[Back to My Projects](#)

Get StartedShareNotifications

1
Step 1
Project Information

2
Step 2
Discipline Information
INCOMPLETE Information

3
Step 3
Download and Submit

Project Information

To set up a project, enter general information about the overall project scope and identify all disciplines that will be included.

Select Energy Code

Select the edition of the energy code that the project is required to comply with based on the estimated permit submittal date.

★ Energy Code ⓘ

☐ 2015 Washington State Energy Code
☐ 2018 Washington State Energy Code
☒ 2021 Washington State Energy Code

Step 2 - Discipline Information

Project: **Sample Department Store - 2021**
WSEC

Back to My Projects

Get Started

Share

Notifications ¹

1

Step 1
Project Information

2

Step 2
Discipline Information
INCOMPLETE Information


3

Step 3
Download and Submit

Discipline Information


Select the icons below to access the compliance tools available for each discipline. If an icon is not presented for the discipline you are looking for then refer to the *Project Scope* section of Step 1 Project Information to confirm that checkboxes for all disciplines included in the project have been selected.

All fields with an * are required




Click to complete **Envelope** compliance information

Get Started



Click to complete **Lighting** compliance information

Completed (Complies)



Click to complete **Mechanical** compliance information

Get Started

Describes completion status of project information entered



Lighting Systems

Lighting Compliance Tools

The screenshot shows the Washington State Energy Code (WSEC) website interface. The top navigation bar includes links for Home, Contact Us, My Projects, and Logout. The user is logged in as Lisa Rosenow, with a LOGOUT button. The left sidebar contains a menu with options: MY ACCOUNT, COMPLIANCE TOOLS, WSEC DOCUMENTS, NEWSROOM, TECHNICAL SUPPORT, RESIDENTIAL SUPPORT, GENERAL, and ADMIN. The main content area is titled "Project: Sample Department Store - 2021 WSEC" and features a "Back to My Project" button. The "Lighting Compliance Tools" section is highlighted, showing a list of topics: Interior & exterior lighting power, Lighting controls, and Lighting & electrical additional energy efficiency measures. Below this, there are two buttons: "Edit Requirements List" and "Completed (Complies)".

WASHINGTON STATE ENERGY CODE

Home Contact Us My Projects Logout

Project: Sample Department Store - 2021 WSEC

Back to My Project

Lighting Compliance Tools

Lighting documentation tools include a Smart Lighting & f

Create a Smart Requirements List to generate a consolidated general lighting and electrical information you provide.

Create Smart Forms to demonstrate compliance with the

Topics include interior and exterior lighting power, lighting

Lighting **SMART** Code Requirements List

Edit Requirements List

Lighting **SMART** Compliance Forms


Completed (Complies)

Notifications


Topics include:

- Interior & exterior lighting power
- Lighting controls
- Lighting & electrical additional energy efficiency measures

Lighting Compliance Tools

 WASHINGTON STATE
ENERGY CODE

Home Contact Us My Projects Logout

 Lisa Rosenow
LOGOUT

MY ACCOUNT

COMPLIANCE TOOLS

WSEC DOCUMENTS

NEWSROOM

TECHNICAL SUPPORT

RESIDENTIAL SUPPORT

GENERAL

ADMIN

Project: **Sample Department Store - 2021 WSEC** [Back to My Project](#)

Lighting Compliance Tools



Lighting documentation tools include a Smart Lighting & Electrical Systems Requirements List and Smart Lighting Forms.

Create a Smart Requirements List to generate a consolidated list of WSEC lighting and electrical provisions applicable to your specific project based on the project and general lighting and electrical information you provide.

Create Smart Forms to demonstrate compliance with the WSEC lighting power allowance requirements based on the proposed lighting fixture information you provide.

Topics include interior and exterior lighting power, lighting controls and lighting and electrical additional efficiency credits (options)



Lighting **SMART** Code Requirements List

[Edit Requirements List](#)

Lighting **SMART** Compliance Forms

[Completed \(Complies\)](#)

Lighting Code Requirements List

 Download/Print Completed Requirements List

 Generate Blank Requirements List

Note: Rows in gray are not applicable for this project.

Save


Please answer Yes, No or NA for all components

Applicability (yes, no, na)	Code Section	Component	Compliance Information required in permit documents	Location in Documents
LIGHTING SCOPE				
<input type="checkbox"/>	C103.1	Construction documents - General	For a shell & core or tenant space (first build-out) project, indicate if there is no lighting scope included in the project.	<input type="text"/>
<input type="checkbox"/>	C103.1	Construction documents - General	For an alteration project, indicate if there is no lighting scope included in the project.	<input type="text"/>
<input type="checkbox"/>	C405.1	Lighting in sleeping units	Indicate general compliance path for permanently installed luminaires in sleeping units - vacancy controls & luminaire efficacy; or lighting power allowance.	<input type="text"/>
INTERIOR LIGHTING CONTROLS				
<input type="checkbox"/>	C405.2	Interior lighting controls, general	For all interior lighting systems, indicate lighting control method (general lighting controls requirements or luminaire level lighting controls) on plans for all spaces and lighting zone(s) served; indicate exceptions applied to eligible spaces and light	<input type="text"/>
<input type="checkbox"/>	C405.2.3	Manual controls	Indicate on plans the method of manual lighting control, location of manual control device and the area or specific application it serves.	<input type="text"/>
<input type="checkbox"/>	C405.2.4 C405.2.4.1	Manual interior light reduction controls	For general lighting not controlled by occupancy sensors, indicate on plans which method of manual 50% lighting load reduction is provided, or indicate applicable exception.	<input type="text"/>
<input type="checkbox"/>	C405.2.1 C405.2.2	Method of automatic shut-off control	Indicate on plans the method of automatic shut-off control during unoccupied periods (occupancy sensor or time switch) for all lighting zones.	<input type="text"/>
<input type="checkbox"/>	C405.2.1	Occupant sensor controls	Indicate on plans all luminaires that are controlled by occupant sensor controls; indicate controls are configured to turn luminaires 100% off when the space is unoccupied;	<input type="text"/>
<input type="checkbox"/>	C405.2.1 C405.2.1.1	Occupant sensor controls	Indicate if occupant sensor controls are configured to be manual on or automatic on to not more than 50% power; indicate spaces eligible for exception that allows automatic on to 100% power.	<input type="text"/>


List of provisions with instructions on how to document compliance

Greyed out provisions do not apply to the project

Lighting Compliance Tools

 WASHINGTON STATE
ENERGY CODE

Home Contact Us My Projects Logout

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MY ACCOUNT

COMPLIANCE TOOLS

WSEC DOCUMENTS

NEWSROOM

TECHNICAL SUPPORT

RESIDENTIAL SUPPORT

GENERAL

ADMIN

Project: **Sample Department Store - 2021 WSEC** [Back to My Project](#)

Lighting Compliance Tools



Lighting documentation tools include a Smart Lighting & Electrical Systems Requirements List and Smart Lighting Forms.

Create a Smart Requirements List to generate a consolidated list of WSEC lighting and electrical provisions applicable to your specific project based on the project and general lighting and electrical information you provide.

Create Smart Forms to demonstrate compliance with the WSEC lighting power allowance requirements based on the proposed lighting fixture information you provide.

Topics include interior and exterior lighting power, lighting controls and lighting and electrical additional efficiency credits (options)




Lighting **SMART** Code Requirements List


[Edit Requirements List](#)


Lighting **SMART** Compliance Forms


[Completed \(Complies\)](#)



Lighting General Information


**WASHINGTON STATE
ENERGY CODE**


[Home](#) [Contact Us](#) [My Projects](#) [Logout](#)



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 [COMPLIANCE TOOLS](#) 



 [WSEC DOCUMENTS](#)

 [NEWSROOM](#)

 [TECHNICAL SUPPORT](#) 

 [RESIDENTIAL SUPPORT](#)

 [GENERAL](#) 

 [ADMIN](#) 

**Project: Sample Department Store - 2021
WSEC**

[Back to Compliance Tools](#) [Back to My Project](#)

General Lighting and Electrical Information

 [Edit Requirements List](#)  [Instructions](#)  [Notifications](#) 0

Close

Enter general lighting and electrical information covering all project types (new construction, additions, alterations, etc).

For exterior lighting, select the lighting zone that the building is located in. Refer to Learning Moment next to Exterior Lighting Zone title for information about exterior lighting zone definitions.

For lighting alterations, select all conditions that apply. An interior lighting project may have some spaces or areas where the number of existing luminaires replaced is equal to or greater than the threshold where compliance with the maximum allowed lighting power allowance (LPA) is required (50% for the 2018 WSEC, 20% for the 2021 WSEC). And other spaces or areas where the number of existing luminaires replaced is less than the threshold, so that the resulting total lighting wattage after the alteration is only required to be equal to or less than the total lighting wattage prior to the alteration. For exterior lighting, this threshold is based on total exterior lighting wattage within the project scope area for all general exterior surface types and additional allowance (non-tradable) surface types.

Click on **INSTRUCTIONS** button above for additional information.

[Save](#) [Proceed to Lighting Console](#)

Lighting Project Description

Provide a brief description of the project and relevant supporting documentation.

Lighting Project Scope

- Compliance documentation features include lighting power allowance (LPA) and proposed lighting power density (LPD) calculations for interior and exterior lighting.
- Supports both the Building Area Method and the Space-by-space Method.
- The project Exterior Lighting Zone defines the LPAs and base site allowance for the project.

Lighting SMART Console Information

* Lighting Scope

New Construction and Additions

Select all that apply to scope of project.

☒ Interior Lighting

☐ Parking Garage Lighting

☒ Exterior Lighting

* Interior Lighting Power Compliance Method ⓘ

Select interior lighting power compliance method

☒ Space By Space ☐ Building Area

* Exterior Lighting Zone ⓘ

☐ Zone 1 ☐ Zone 2 ☒ Zone 3 ☐ Zone 4

Interior Lighting Compliance Paths

Building Area Method and Space-by-space Method

- Project scope encompasses the entire building
 - Applies to new buildings or whole building alterations.
 - Either interior lighting compliance method may be used.
- Project scope includes just a portion of the building
 - ***Only the space-by-space method may be used***
 - Includes building additions, partial building alterations, partial building initial TIs and buildings with unfinished spaces (shell & core).

Interior Lighting Power Allowance Methods

Building Area Method

- Simplified list of building use types
- Each building area must comply independent of other building areas (no wattage trading allowed between areas)
- No additional lighting power allowances
- Typically provides less generous overall allowance

Table C405.4.2(1)
Interior Lighting Power Allowances—Building Area Method

Building Area Type	LPD(w/ft ²)
Automotive facility	0.64
Convention center	0.64
Court house	0.79
Dining: Bar lounge/leisure	0.79
Dining: Cafeteria/fast food	0.72
Dining: Family	0.71
Dormitory	0.46
Exercise center	0.67
Fire station	0.54
Gymnasium	0.75
Health care clinic	0.70
Hospital	0.84
Hotel/motel	0.56
Library	0.83
Manufacturing facility	0.82
Motion picture theater	0.44
Multiple family	0.41
Museum	0.55
Office	0.64
Parking garage	0.14
Penitentiary	0.65
Performing arts theater	0.84
Police station	0.66
Post office	0.65
Religious building	0.67
Retail	0.84
School/university	0.70
Sports arena	0.62
Town hall	0.69
Transportation	0.50
Warehouse	0.40
Workshop	0.91

Table C405.4.2(1)

Interior Lighting Power Allowance Methods

Space-by-Space Method

- Building may be divided into multiple space types
- 101 space types available
- Total LPA may be distributed across the entire project area
- Additional lighting allowances available
- More effort to calculate, however often provides a more generous overall allowance

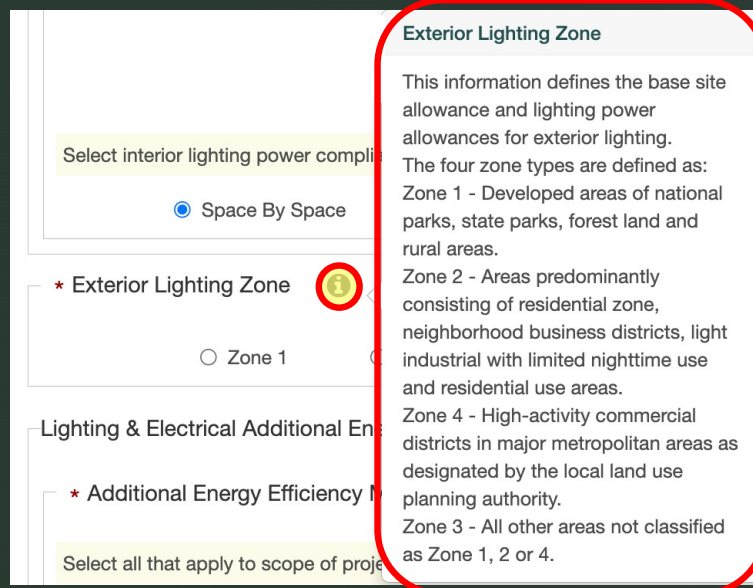
Table C405.4.2(2)
Interior Lighting Power Allowances—Space-by-Space Method

Common Space-by-Space Types ^{a,j}	LPD (w/ft ²)
Atrium - Less than 20 feet in height	0.39
Atrium - 20 to 40 feet in height	0.48
Atrium - Above 40 feet in height	0.60
Audience/seating area - Permanent ⁱ	
In an auditorium	0.61
In a gymnasium	0.23
In a motion picture theater	0.27
In a penitentiary	0.67
In a performing arts theater	1.16
In a religious building	0.72
In a sports arena	0.33
Otherwise	0.23
Banking activity area ^l	0.61
Breakroom (see lounge/breakroom)	
Classroom/lecture hall/training room	
In a penitentiary	0.89
Otherwise ^h	0.71
Computer room, data center	0.94
Conference/meeting/multipurpose	0.97
Confinement cell	0.70
Copy/print room	0.31
Corridor	
In a facility for the visually impaired (and not used primarily by the staff) ^b	0.71
In a hospital	0.71
In a manufacturing facility	0.41
Otherwise ^{c,i}	0.41
Courtroom ^c	1.20

Table C405.4.2(2)


Learning Moments

- "Information" icons
- Summarizes exterior lighting zone definitions in Table C405.5.3(1)



Select interior lighting power compliance

☒ Space By Space

* Exterior Lighting Zone 

☐ Zone 1

Lighting & Electrical Additional Energy

* Additional Energy Efficiency Measures

Select all that apply to scope of project

Exterior Lighting Zone

This information defines the base site allowance and lighting power allowances for exterior lighting. The four zone types are defined as:

Zone 1 - Developed areas of national parks, state parks, forest land and rural areas.

Zone 2 - Areas predominantly consisting of residential zone, neighborhood business districts, light industrial with limited nighttime use and residential use areas.

Zone 4 - High-activity commercial districts in major metropolitan areas as designated by the local land use planning authority.

Zone 3 - All other areas not classified as Zone 1, 2 or 4.

Additional Energy Efficiency and Load Management Measures

- Select interior lighting and renewable energy ***additional energy efficiency measures & load management measures*** that will be applied to the project per Sections C406.2 and C406.3.
- Reduced interior lighting power measures are applied to the LPA-LPD calculations in the interior lighting console.
- All other measures inform the lighting requirements list.

Lighting & Electrical Additional Energy Efficiency and Load Management Measures

★ Additional Energy Efficiency Measures

Select all that apply to scope of project.

☒ Reduced lighting power density - 10% lower than LPA ⓘ

☐ Reduced lighting power density - 20% lower than LPA ⓘ

☒ Enhanced digital lighting controls ⓘ

☐ On-site & off-site renewable energy systems ⓘ

☐ No lighting or electrical additional energy efficiency measures included in project

★ Load Management Measures

Select all that apply to scope of project.

☐ Lighting load management ⓘ

☐ Electric energy storage ⓘ

☒ No lighting or electrical load management measures included in project

Additional Requirements List Details

- Additional details that inform the ***Lighting Requirements List***
- Lighting controls compliance paths include all general applicable requirements, OR advanced lighting controls (LLLC or NLC)

Additional Lighting SMART Requirements List Information

Lighting Controls Method of Compliance

Select all that apply to scope of project.

- ☐ Interior lighting complies with all applicable lighting control requirements
- ☐ Interior lighting complies with advanced lighting control requirements
- ☐ Exterior lighting complies with all applicable lighting control requirements

Lighting Load Thresholds for Commissioning ⓘ

Does the total installed interior + exterior lighting load of the building exceed 10 kW?

- ☐ Yes ☐ No

Does the total installed interior + exterior lighting load that is controlled by occupancy sensors or automatic daylight sensing controls exceed 5 kW?

- ☐ Yes ☐ No

Miscellaneous Electrical Scope

- ☐ Receptacles
- ☐ Transformers
- ☐ Motors
- ☐ Vertical and Horizontal Transportation

Lighting General Information

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WSEC DOCUMENTS

NEWSROOM

TECHNICAL SUPPORT

RESIDENTIAL SUPPORT

GENERAL

ADMIN

HomeContact UsMy ProjectsLogout

Project: Sample Department Store - 2021
WSEC

Back to Compliance ToolsBack to My Project

General Lighting and Electrical Information

Edit Requirements ListInstructionsNotifications

Next step is to proceed to the lighting power calculations console.

SaveProceed to Lighting Console

Lighting Project Description

Provide a brief description of the project and relevant supporting documentation.

Lighting SMART Console Information

* Lighting Scope

New Construction and Additions

Select all that apply to scope of project.

☒ Interior Lighting

☐ Parking Garage Lighting

☒ Exterior Lighting

Lighting Console - Scope & Project Type

Project: Sample Department Store - 2021 WSEC

[Back to My Project](#) [Back to Lighting Compliance Tools](#)

Lighting SMART Console
Create a console of information for each applicable Lighting Scope Type / Project Type.

[Overall Compliance Summary](#) [Lighting Power Allowance Tables](#) [Console Instructions](#)

Select Project Scope from drop down menu below.

Lighting Scope Type / Project Type

(Select Project Scope) ▼









(Select Project Scope)

(Complies) Interior Lighting / New Building

(Complies) Exterior Lighting / New Building

[Back to General Lighting Information](#)

- Select the Project Scope to access the LPA and LPD calculation tools.
- Separate consoles for Interior Lighting and Exterior Lighting scope.
- Separate consoles for combination project types - Building Addition + Existing Building Lighting Alteration, etc

	General Space Type	Specific Space Type	Gross Interior Area (SF)	LPA (Watts/SF)	Linear Feet (LF)	LPA (Watts/LF)	Total Watts Allowed (LPA x SF) or (LPA x LF)	Total Proposed Watts (LPD + Display)
	Retail	  General sales	20,000	1.05			21,000	
	Retail	  Sales display - Furniture/clothing/cosmetics/art	15,000	1.05			10,000	10,000
	Warehouse/storage area	  Medium to bulky palletized items	5,000	0.33			1,650	
	Retail Display Extra Allowance						500	
	Proposed Total LPD							26,990
	Proposed Total LPD						33,150	27,000

LPA - Add A General Space Type

Add Space Type (Select One)

General Space Types

General Space Types

Atrium

Audience/seating area

Banking activity area

Classroom/lecture/training

Conference/meeting/multipurpose

Computer room/data center

Copy/print room

Corridors

Courtroom

Dining area

Electrical/mechanical

Emergency vehicle garage

Food preparation

Guest room

Laboratory

Laundry/washing area

Loading dock

Lobby

Locker room

Lounge/breakroom

Office

Parking - Covered

Pharmacy area

Restroom

Seating area

Interior Lighting Power Allowance - Space by Space

Type	Gross Interior Area (SF)	LPA (Watts/SF)	Linear Feet (LF)	LPA (Watts/LF)	Total Watts Allowed (LPA x SF) or (LPA x LF)	Total Proposed Watts (LPD + Display)
	20,000	1.05			21,000	
Furniture/clothing/cosmetics/art	15,000	1.05			10,000	10,000
by palletized items	5,000	0.33			1,650	
Retail Display Extra Allowance					500	
Proposed Total LPD						26,990
					33,150	27,000

Proposed Lighting Power Density - Space by Space

Hide Details

Location	Fixture ID	Quantity of Fixtures (#F)	Watts per Fixture (WpF)	Total Linear Feet (LF)	Watts per Linear Foot (WpLF)	Total Watts Proposed (#F x WpF) or (LF x WpLF)
Ant	Fixture-1	375	32			12,000
	Fixture-2	200	25			5,000
Proposed Total LPD						17,000

Additional Allowance Lighting (Display/Highlight/Ornamental) - Space by Space

Hide Details

LPA - Select Specific Space Type

Interior Lighting Power Allowance - Space by Space

Add Space Type (Select One) ▼

General Space Type	Specific Space Type	Gross Interior Area (SF)	LPA (Watts/SF)	Linear Feet (LF)	LPA (Watts/LF)	Total Watts Allowed (LPA x SF) or (LPA x LF)	Total Proposed Watts (LPD + Display)
Retail	General sales	20,000	1.05			21,000	

Retail

(Select One)

- ✓ General sales
- Sales display - Vehicle/sporting goods/electronics
- Sales display - Furniture/clothing/cosmetics/art
- Sales display - Jewelry/crystal/china
- Sales display - All other merchandise types
- Dressing/fitting room
- Mall concourse

* Location in Documents - Plan #, Room #(s)

Plan L-1

* Advanced lighting control method applied

Luminaire level lighting controls (LLLC) ▼

Space Description

Save Close

● Retail	✎ 🗑	Sales display - Furniture/clothing/cosmetics/art	15,000	1.05		10,000	10,000
	✎ 🗑	Warehouse/storage area	5,000	0.33		1,650	
						Retail Display Extra Allowance 500	
						Proposed Total LPD	26,990
● Proposed Total LPD						33,150	27,000

LPA - Enter Space Type Details

Interior Lighting Power Allowance - Space by Space

Add Space Type (Select One) ▼

General Space Type	Specific Space Type	Gross Interior Area (SF)	LPA (Watts/SF)	Linear Feet (LF)	LPA (Watts/LF)	Total Watts Allowed (LPA x SF) or (LPA x LF)	Total Proposed Watts (LPD + Display)
Retail	General sales	20,000	1.05			21,000	

Retail

General sales ▼

* Gross Interior Area (SF)
20000

* Location in Documents - Plan #, Room #(s)
Plan L-1

* Space Description

* General area lighting controlled by advanced controls?
Yes ▼

* Advanced lighting control method applied
Luminaire level lighting controls (LLLC) ▼

Save Close

● Retail	Sales display - Furniture/clothing/cosmetic/art	15,000	1.05			10,000	10,000
	Warehouse/storage area	5,000	0.33			1,650	
						Retail Display Extra Allowance	500
						Proposed Total LPD	26,990
● Proposed Total LPD						33,150	27,000





Includes questions about lighting controls that are included in the output report.

Proposed Interior Lighting Information

Proposed Lighting Power Density - Space by Space

Add Fixtures (Select One) ▼



Hide Details

Fixture Category	Fixture Type / Application	Fixture ID	Quantity of Fixtures (#F)	Watts per Fixture (WpF)	Total Linear Feet (LF)	Watts per Linear Foot (WpLF)	Total Watts Proposed (#F x WpF) or (LF x WpLF)
Individual Fixtures	  Direct / indirect pendant	Fixture-1	375	32			12,000
Individual Fixtures	  Recessed downlight	Fixture-2	200	25			5,000
Proposed Total LPD							17,000

Proposed Additional Allowance Lighting (Display/Highlight/Ornamental) - Space by Space

Add Fixtures (Select One) ▼

Hide Details

Fixture Category	Fixture Type	Space Type	Fixture ID	Quantity of Fixtures (#F)	Watts per Fixture (WpF)	Total Linear Feet (LF)	Watts per Linear Foot (WpLF)	Total Watts Proposed (#F x WpF) or (LF x WpLF)
Linear Fixtures  	Line voltage track (120V)	Retail - Sales display - Furniture/clothing/cosmetics/art	Display Track-1	200	50			10,000

General lighting fixtures are entered separately from **additional allowance fixtures** that are intended for retail display lighting, ornamental purposes and highlighting of art & exhibits, etc.

LPD - Add Fixture Types

Proposed Lighting Power Density - Space by Space

Add Fixtures (Select One) ▼

Fixture Category	Fixture Type / Application	Fixture ID	Quantity of Fixtures (#F)	Watts per Fixture (WpF)	Total Linear Feet (LF)	Watts per Linear Foot (WpLF)	Total Watts Proposed (#F x WpF) or (LF x WpLF)
Individual Fixtures	Direct / indirect pendant	Fixture-1	375	32			12,000
Individual Fixtures							
Direct / indirect pendant ▼							
* Fixture ID		* Location in Project Documents - Plan #		* Quantity of Fixtures (#F)			
Fixture-1		Plan L-1		375			
* Watts per Fixture (WpF)		* Lamp Type		Fixture Description			
32		LED ▼					
Are these fixtures located within a daylight zone?		Do these fixtures require specific application lighting controls?					
No ▼		None required ▼					
Save		Close					
Individual Fixtures	Recessed downlight	Fixture-2	200	25			5,000
Proposed Total LPD							17,000

Includes questions about lighting controls that are included in the output report.

General Space Type	Specific Space Type	Gross Interior Area (SF)	LPA (Watts/SF)	Linear Feet (LF)	LPA (Watts/LF)	Total Watts Allowed (LPA x SF) or (LPA x LF)	Total Proposed Watts (LPD + Display)
Retail	General sales	20,000	1.05			21,000	
Retail	Sales display - Furniture/clothing/cosmetics/art	15,000	1.05			10,000	10,000
Warehouse/storage area	Medium to bulky palletized items	5,000	0.33			1,650	
Retail Display Extra Allowance						500	
Proposed Total LPD							26,990
Proposed Total LPD						33,150	27,000

Proposed Additional Allowance Lighting (Display/Highlight/Ornamental) - Space by Space

Add Fixtures (Select One) Hide Details

Fixture Category	Fixture Type	Space Type	Fixture ID	Quantity of Fixtures (#F)	Watts per Fixture (WpF)	Total Linear Feet (LF)	Watts per Linear Foot (WpLF)	Total Watts Proposed (#F x WpF) or (LF x WpLF)
Linear Fixtures	Line voltage track (120V)	Retail - Sales display - Furniture/clothing/cosmetics/art	Display Track-1	200	50			10,000

Linear Fixtures

Line voltage track (120V)

*** Space Type**

Retail - Sales display - Furniture/clothing/cosmetics/art

*** Fixture ID**

Display Track-1

*** Location in Project Documents - Plan #**

Plan L-1

*** How is linear fixture quantity defined?**

Quantity of fixtures with current limiting device

Quantity of Fixtures or Individual Luminaires (#F)

200

*** Wattage of CLD or Individual Luminaires (WpF)**

50

*** Lamp Type**

MR-16

Fixture Description

*** Specific lighting controls requirements**

Sales/display additional allowance, independently controlled, c

Save Close

Interior Lighting - Compliance Verification

Project: Sample Department Store - 2021 WSEC

Lighting SMART Console

Create a console of information for each applicable Lighting Scope Type / Project Type.

Overall Compliance Summary

Lighting Power Allowance Tables

Console Instructions

Enter project information in Console below for Interior Lighting / New Building

Back to General Lighting Information

Lighting Scope Type / Project Type

Interior Lighting / New Building

Compliance Method:

☒ Space By Space

☐ Building Area

Calculation Adjustment

Reduced lighting power density

None

Verify Compliance

Notifications

Status

COMPLIES SPACE BY SPACE









Last compliance check ran October 16, 2025

Total LPD ≤ Total LPA

Interior Lighting Power Allowance - Space by Space

Add Space Type (Select One)

General Space Type	Specific Space Type	Gross Interior Area (SF)	LPA (Watts/SF)	Linear Feet (LF)	LPA (Watts/LF)	Total Watts Allowed (LPA x SF) or (LPA x LF)	Total Proposed Watts (LPD + Display)
Retail	General sales	20,000	1.05			21,000	
Retail	Sales display - Furniture/clothing/cosmetics/art	15,000	1.05			10,000	10,000
Warehouse/storage area	Medium to bulky palletized items	5,000	0.33			1,650	
					Retail Display Extra Allowance	500	
					Proposed Total LPD		26,900
						33,150	27,000
	Proposed Total LPD						

	General Space Type	Specific Space Type	Gross Interior Area (SF)	LPA (Watts/SF)	Linear Feet (LF)	LPA (Watts/LF)	Total Watts Allowed (LPA x SF) or (LPA x LF)	Total Proposed Watts (LPD + Display)
	Retail	  General sales	20,000	1.05			21,000	
	Retail	  Sales display - Furniture/clothing/cosmetics/art	15,000	1.05			10,000	10,000
	Warehouse/storage area	  Medium to bulky palletized items	5,000	0.33			1,650	
	Retail Display Extra Allowance						500	
	Proposed Total LPD							26,990
	Proposed Total LPD						33,150	27,000

Interior Lighting - Compliance Verification

Project: Sample Department Store -

Lighting SMART Console
Create a console of information for each applicable Lighting

Compliance Results for Interior Lighting / New Building

Interior Lighting / New Building - Does not comply via Space By Space. Refer to NOTIFICATIONS and update project information.

OK

Back to My Project

Back to Lighting Compliance Tools

Compliance Summary

Lighting Power Allowance Tables

Console Instructions

Enter project information in Console below for Interior Lighting / New Building

Back to General Lighting Information

Lighting Scope Type / Project Type

Interior Lighting / New Building

Compliance Method:

Space By Space

Building Area

Calculation Adjustment
Reduced lighting power density
20%

Verify Compliance

Notifications

Status

DOES NOT COMPLY SPACE BY SPACE

Last compliance check ran November 26, 2025

Interior Lighting Power Allowance - Space by Space

Add Space Type (Select One)

General Space Type	Specific Space Type	Gross Interior Area (SF)	LPA (Watts/SF)	Linear Feet (LF)	LPA (Watts/LF)	Total Watts Allowed (LPA x SF) or (LPA x LF)	Total Proposed Watts (LPD + Display)
Retail	General sales	20,000	1.05			21,000	
Retail	Sales display - Furniture/clothing/cosmetics/art	15,000	1.05			10,000	10,000
Warehouse/storage area	Medium to bulky palletized items	5,000	0.33			1,650	
						Retail Display Extra Allowance 500	
						Proposed Total LPD	26,990
Totals						Calculation Adjustment Applied - LPA x 0.8 26,520	27,000

Additional Energy Efficiency Measures

Lighting SMART Console

Create a console of information for each applicable Lighting Scope Type / Project Type.

Overall Compliance Summary

Lighting Power Allowance Tables

Console Instructions

Enter project information in Console below for Interior Lighting / New Building

[Back to General Lighting Information](#)

Lighting Scope Type / Project Type

Interior Lighting / New Building

Compliance Method:

☒ Space By Space

☐ Building Area

Calculation Adjustment

Reduced lighting power density

20%



1

Notifications

Interior Lighting / New Building - Does not comply - These are the following problems:
Proposed total LPD value of 27,000 watts is greater than the total allowed value of 26,520 watts

Interior Lighting Power Allowance - Space by Space

Add Space Type (Select One)

General Space Type	Specific Space Type	Gross Interior Area (Sq Ft)	LPA (Watts/SF)	Linear Feet (LF)	LPA (Watts/LF)	Total Watts Allowed (LPA x SF) or (LPA x LF)	Total Proposed Watts (LPD + Display)
Retail	General sales	20,000	1.05			21,000	
Retail	Sales display - Furniture/clothing/cosmetics/art	15,000	1.05			10,000	10,000
Warehouse/storage area	Medium to bulky palletized items	5,000	0.33			1,650	
Retail Display Extra Allowance						500	
Proposed Total LPD							26,990
Totals			Calculation Adjustment Applied - LPA x 0.8	26,520			27,000

Interior Lighting - Compliance Verification

Project: Sample Department Store - 2

Lighting SMART Console
Create a console of information for each applicable Lighting

Compliance Results for Interior Lighting / New Building
Interior Lighting / New Building - complies via Space By Space
OK

Compliance Summary

Lighting Power Allowance Tables

Console Instructions

Enter project information in Console below for Interior Lighting / New Building [Back to General Lighting Information](#)

Lighting Scope Type / Project Type
Interior Lighting / New Building

Compliance Method:
☒ Space By Space ☐ Building Area

Calculation Adjustment
Reduced lighting power density
10%

☒ Verify Compliance ☐ Notifications

Status **COMPLIES SPACE BY SPACE** Last compliance check ran November 26, 2025

Interior Lighting / New Building - complies via Space By Space [Close](#)

Interior Lighting Power Allowance - Space by Space

Add Space Type (Select One)

General Space Type	Specific Space Type	Gross Interior Area (SF)	LPA (Watts/SF)	Linear Feet (LF)	LPA (Watts/LF)	Total Watts Allowed (LPA x SF) or (LPA x LF)	Total Proposed Watts (LPD + Display)
Retail	<input type="checkbox"/> General sales	20,000	1.05			21,000	
<input checked="" type="radio"/> Retail	<input type="checkbox"/> Sales display - Furniture/clothing/cosmetics/art	15,000	1.05			10,000	10,000
Warehouse/storage area	<input type="checkbox"/> Medium to bulky palletized items	5,000	0.33			1,650	
						Retail Display Extra Allowance 500	
						Proposed Total LPD	26,990
<input checked="" type="radio"/> Totals						Calculation Adjustment Applied - LPA x 0.9 29,835	27,000

Exterior Lighting - Compliance Verification

Lighting SMART Console

Overall Compliance SummaryLighting Power Allowance TablesConsole Instructions

Create a console of information for each applicable Lighting Scope Type / Project Type.

Enter project information in Console below for Exterior Lighting / New Building

Lighting Scope Type / Project Type
Exterior Lighting / New Building

Calculation Adjustment
Not applicable to exterior

Exterior Zone
Zone 3

Verify Compliance

Notifications

Status **COMPLIES** Last compliance check ran November 26, 2025

Back to General Lighting Information

Exterior Lighting Power Allowance

Add Exterior Surface (Select One)

Base Site Allowance: 400

Exterior Surface	Exterior Surface Sub-Type	Surface Area (SF)	LPA (Watts/SF)	Linear Feet (LF)	LPA (Watts/LF)	Total Watts Allowed (LPA x SF) or (LPA x LF)	Total Proposed Watts
Building entrances and exits	Entry canopies	500	0.18			90	
Totals including Allowance						490	400

Proposed Exterior Lighting Power Density

Add Fixtures (Select One)

Hide Details

Fixture Category	Fixture Type / Application	Exterior Surface	Fixture ID	Quantity of Fixtures (#F)	Watts per Fixture (WpF)	Total Linear Feet (LF)	Watts per Linear Foot (WpLF)	Total Watts Proposed (#F x WpF) or (LF x WpLF)
Individual Fixtures	Canopy	Building entrances and exits - Entry canopies	LTG-4	20	20			400

Lighting SMART Console

Create a console of information for each applicable Lighting Scope Type / Project Type.

Overall Compliance Summary

Lighting Power Allowance Tables

Console Instructions

Enter project information in Console below for Exterior Lighting / New Building

Lighting Scope Type / Project Type
Exterior Lighting / New Building

Calculation Adjustment
Not applicable to exterior

Exterior Zone
Zone 3

Status
COMPLIES
Last compliance check ran November 26, 2025

Exterior Lighting Power Allowance

Base Site Allowance: 400

Add Exterior Surface (Select One)			Total Watts Allowed (LPA x SF) or (LPA x LF)	Total Proposed Watts
Exterior Surface	Exterior Surface Sub-Type	Surface Area (SF)		
Building entrances and exits	Entry canopies	500	90	
Totals including Allowance			490	400

Proposed Exterior Lighting Power Density

Add Fixtures (Select One)

Hide Details

Fixture Category	Fixture Type / Application	Exterior Surface	Fixture ID	Quantity of Fixtures (#F)	Watts per Fixture (WpF)	Total Linear Feet (LF)	Watts per Linear Foot (WpLF)	Total Watts Proposed (#F x WpF) or (LF x WpLF)
Individual Fixtures	Canopy	Building entrances and exits - Entry canopies	LTG-4	20	20			400

Exterior Additional Lighting Power Allowance

Add Additional Exterior Allowance Surface (Select One)

Remaining Base Site Allowance: 0

Exterior Additional Allowance Surface	Exterior Surface Sub-Type	Surface Area (SF)	LPA (Watts/SF)	# of Items	LPA (Watts per # of Items)	Total Watts Allowed (LPA x SF) or (LPA x # of Items)	Total Additional Proposed Watts by Surface Type
Watts Exceeding LPA					0	Remaining Site Allowance	0



Building Envelope

Envelope Compliance Tools

WASHINGTON STATE ENERGY CODE

Home Contact Us My Projects Logout

Project: **Sample Department Store WSEC**

Envelope Compliance Tools

Envelope documentation tools include a Smart Envelope R...

Create a Smart Requirements List to generate a consolidated information you provide.

Create Smart Forms to identify the method required to dem...

Topics include insulation, envelope and fenestration assem... additional efficiency credits (options).

Envelope **SMART** Code Requirements List

Edit Requirements List

Back to My Project

Notifications

ral envelope


provide.

and envelope


Topics include:

- Insulation thermal performance
- Envelope & fenestration assembly performance
- Window-to-wall and skylight-to-roof ratios
- Fenestration alternates
- Air barrier testing
- Envelope additional energy efficiency measures

Envelope Compliance Tools

**WASHINGTON STATE
ENERGY CODE**

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Lisa Rosenow
LOGOUT

MY ACCOUNT

COMPLIANCE TOOLS

WSEC DOCUMENTS

NEWSROOM

TECHNICAL SUPPORT

RESIDENTIAL SUPPORT

GENERAL

ADMIN

Project: **Sample Department Store - 2021 WSEC**[Back to My Project](#)

Envelope Compliance Tools



Envelope documentation tools include a Smart Envelope Requirements List and Smart Envelope Forms.

Create a Smart Requirements List to generate a consolidated list of WSEC envelope provisions applicable to your specific project based on the project and general envelope information you provide.

Create Smart Forms to identify the method required to demonstrate compliance with the WSEC thermal envelope provisions based on the envelope details you provide.

Topics include insulation, envelope and fenestration assembly performance, window-to-wall ratio, skylight-to-roof ratio, fenestration alternates, air barrier testing and envelope additional efficiency credits (options).



Envelope **SMART** Code Requirements List

[Edit Requirements List](#)

Envelope **SMART** Compliance Forms

[Create Forms](#)

Selecting either Compliance Tool will proceed to the General Envelope Information page

Envelope General Information

WASHINGTON STATE ENERGY CODE

Home Contact Us My Projects Logout

Project: **Sample Department Store - 2021 WSEC**

Back to Compliance Tools Back to My Project

General Envelope Information

Edit Requirements List

Project Type
New Building

Space Conditioning
Fully Conditioned
Semi-heated

Occupancy Type
All Commercial

Saved Successfully. Your SMART Code Requirements List has been updated to reflect your changes.

Save Proceed to Envelope Console

Envelope Project Description

Provide a brief description of the project and relevant supporting documentation.

Envelope Code Requirements List

Download/Print Completed Requirements List

Generate Blank Requirements List

Note: Rows in gray are not applicable for this project.

Save

Please answer Yes, No or NA for all components

Applicability (yes, no, na)	Code Section	Component	Compliance Information required in permit documents	Location in Documents
ENVELOPE ASSEMBLIES				
<input type="checkbox"/>	C103.6.3	Thermal envelope compliance path	Indicate envelope thermal performance compliance path taken (prescriptive or component performance) and provide corresponding WSEC envelope compliance reports in project documentation;	<input type="text"/>
<input type="checkbox"/>	C402.1.3 C402.1.4 C402.1.5.1 C	Thermal envelope compliance path - Prescriptive	If complying prescriptively, demonstrate that each opaque envelope assembly complies via either the minimum prescriptive R-value per Table C402.1.3 or the maximum prescriptive U-factor/F-factor per Table C402.1.4; include U-factor/F-factor source in compl	<input type="text"/>
<input type="checkbox"/>	C402.1.5 C402.1.5.1 C402.4	Thermal envelope compliance path - Component performance	If complying via component performance, demonstrate that the Proposed Total UxA is equal to or less than the Allowable Total UxA; also demonstrate that the Proposed Total SHGCxA is equal to or less than the Allowable SHGCxA.	<input type="text"/>
<input type="checkbox"/>	C407.2	Thermal envelope compliance path - Total building performance	If complying via total building performance, provide a list of all proposed envelope component types, areas and U-values in energy model documentation.	<input type="text"/>
<input type="checkbox"/>	C303.1.1	General insulation installation	Indicate installation methods, thicknesses, densities and clearances to achieve the intended R-value of all insulation materials;	<input type="text"/>
<input type="checkbox"/>	C303.2.2 C402.1.4.1.2	General insulation installation	Where two or more layers of rigid insulation will be used, indicate that edge joints between layers are staggered, or exception taken.	<input type="text"/>
<input type="checkbox"/>	C303.1.1 C303.1.2	Insulation identification	For insulation materials that are provided with a manufacturer's R-value identification mark, indicate that the insulation shall be installed such that the mark is readily observable during inspection.	<input type="text"/>
<input type="checkbox"/>	C303.1.1 C303.1.2	Insulation identification	For insulation materials that are not installed with an R-value identification mark, indicate that an insulation certificate per Section C303.1.1 shall be provided immediately after installation in a conspicuous location in the building so it is readily a	<input type="text"/>

List of provisions with instructions on how to document compliance

Greyed out provisions do not apply to the project

Envelope General Information

The screenshot displays the Washington State Energy Code (WSEC) web application interface. The top navigation bar includes links for Home, Contact Us, My Projects, and Logout. The left sidebar shows the user profile for Lisa Rosenow with a LOGOUT button, and a menu with options: MY ACCOUNT, COMPLIANCE TOOLS, WSEC DOCUMENTS, NEWSROOM, TECHNICAL SUPPORT, RESIDENTIAL SUPPORT, GENERAL, and ADMIN. The main content area is titled 'Project: Sample Department Store - 2021 WSEC' and includes buttons for 'Back to Compliance Tools' and 'Back to My Project'. Below the title, the 'General Envelope Information' section is highlighted. It contains three columns of data: Project Type (New Building), Space Conditioning (Fully Conditioned Semi-heated), and Occupancy Type (All Commercial). To the right of this section are buttons for 'Edit Requirements List', 'Instructions', and 'Notifications' (with a red badge indicating 0 notifications). A red box highlights the 'General Envelope Information' section. Below this, a yellow box contains two bullet points explaining the WSEC-C requirements for space conditioning categories.

WASHINGTON STATE ENERGY CODE

Home Contact Us My Projects Logout

Project: **Sample Department Store - 2021 WSEC**

Back to Compliance Tools Back to My Project

General Envelope Information

Edit Requirements List Instructions Notifications

Project Type New Building	Space Conditioning Fully Conditioned Semi-heated	Occupancy Type All Commercial
-------------------------------------	--	---

- The WSEC-C requires each space conditioning category to be separately verified for compliance.
- This information is pulled from the General Project Information Page.

General Envelope Information

Edit Requirements List

Instructions

Project Type
Building Addition
Change in Space Conditioning

Space Conditioning
Fully Conditioned
Semi-heated

Occupancy Type
Mixed Use - Commercial + Group R
building over 3 stories

Save

Go to Credits Information

Envelope Project Description

Provide a brief description of the project and relevant supporting documentation.

Sample existing building alteration project - fully conditioned building addition + unheated storage area upgraded to a semi-heated warehouse.

* Envelope Assembly Scope

New Construction and Additions

Select all that apply to scope of project.

- ☒ Roof
- ☒ Walls
- ☐ Floors over unconditioned space
- ☒ Slab-on-grade floors
- ☒ Opaque Doors
- ☒ Vertical Fenestration (Windows & Glazed Doors)
- ☒ Skylights

Alterations

Select all that apply to scope of project.

- ☒ Roof
- ☐ Walls
- ☐ Floors over unconditioned space
- ☐ Slab-on-grade floors
- ☐ Opaque Doors
- ☒ Vertical Fenestration (Windows & Glazed Doors)
- ☐ Skylights
- ☐ No envelope alteration scope in project

Envelope Console - Scope & Project Type

Project: Sample Department Store - 2021 WSEC [Back to My Project](#) [Back to Envelope Compliance Tools](#)

Envelope SMART Console

Create a console of information for each applicable Space Conditioning Type / Project Type.

[Envelope R-Value & U-factor Tables](#) [Console Instructions](#)

Select Project Scope from drop down menu below.

[Back to General Envelope Information](#)

Space Conditioning Type / Project Type

(Select Project Scope) ▾

(Select Project Scope)

- (?) Fully Conditioned / Building Addition
- (?) Fully Conditioned / Change in Space Conditioning
- (?) Semi-heated / Building Addition
- (?) Semi-heated / Change in Space Conditioning

- Select the Project Scope to access the envelope prescriptive compliance and component performance (UA) calculation features.
- Individual consoles are based on space conditioning type and project type.
- Consoles for combination project types - Building Addition + Existing Building Envelope Alteration, etc

Envelope Compliance Paths

Envelope Prescriptive Compliance

- All minimum required prescriptive R-values and maximum allowed prescriptive U-factors are verified for compliance.
- Envelope assembly SF areas are required to perform the prescriptive maximum allowed window-to-wall ratio (30%) and skylight-to-roof ratio (5%) calculations.
- Prescriptive fenestration alternates for high performance fenestration and/or optimized daylighting may be applied, allowing up to 40% window-to-wall ratio.

Component Performance UA Compliance

- Requires envelope assembly U-factors for all building envelope elements.
- Calculates the U-Factor * Area (UA) of each envelope assembly.
- ***Performs UA calculations - Total proposed UA shall be \leq total allowed UA.***

Envelope Areas and Ratios - New Building

Envelope Areas and Ratios

Click on each space conditioning type below to enter and view above grade exterior envelope area and ratio information. Ratios for each space conditioning category are calculated separately. Select INSTRUCTIONS button above for additional information.

Fully Conditioned (Enter Areas)

[Close]

Envelope Assembly Areas - Above Grade Exterior

Enter all new envelope assemblies in the Envelope Console on the next page. If project includes an addition or alteration, enter all upgraded envelope assemblies in the Envelope Console and assign these assemblies as New. Totals shown in Envelope Assembly Areas section include all new and upgraded assemblies combined.

New Vertical Fenestration & Glazed Door Area	4,000
New Net Wall & Opaque Door Area	14,000
New Skylight Area	1,000
New Net Roof Area	49,000

SF areas of new envelope assemblies are automatically pulled into here from the envelope console.

Fully Conditioned Building Totals

Totals and ratios are calculated for each space conditioning category separately. Ratios require complete information entered in General Envelope Information page or Envelope Console page.

Total Window-to-wall Ratio	22.2%
Total Skylight-to-roof Ratio	2.0%

Calculates the resulting window-to-wall and skylight-to-roof ratios.

Semi-heated (Enter Areas)

[Open]

Semi-heated (Enter Areas)

[Close]

No Existing to Remain

Unaltered Existing Envelope Assembly Areas - Above Grade Exterior

Enter the resulting unaltered existing envelope assembly areas after all envelope alterations have been applied. Existing envelope areas for each space conditioning category are entered separately. If an envelope assembly type does not apply to the project, then at minimum enter "0".

* Unaltered Existing Vertical Fenestration & Glazed Door Area	0
* Unaltered Existing Wall & Opaque Door Area	2,500
* Unaltered Existing Skylight Area	0
* Unaltered Existing Net Roof Area	0

Enter SF areas of unaltered existing envelope assemblies.

Done

Envelope Assembly Areas - Above Grade Exterior

Enter all new envelope assemblies in the Envelope Console on the next page. If project includes an addition or alteration, enter all upgraded envelope assemblies in the Envelope Console and assign these assemblies as New. Totals shown in Envelope Assembly Areas section include all new and upgraded assemblies combined.

New or Altered Vertical Fenestration & Glazed Door Area	500
New or Altered Net Wall & Opaque Door Area	0
New or Altered Skylight Area	90
New or Altered Net Roof Area	2,100

SF areas of new (or altered existing) envelope assemblies are automatically pulled into here from the envelope console.

Semi-heated Building Totals

Applies to [Change in Space Conditioning]

Totals and ratios are calculated for each space conditioning category separately. Ratios require complete information entered in General Envelope Information page or Envelope Console page.

Total Vertical Fenestration & Glazed Door Area	500
Total Wall & Opaque Door Area	2,500
Total Skylight Area	90
Total Net Roof Area	2,100
Total Window-to-wall Ratio	16.7%
Total Skylight-to-roof Ratio	4.1%

Combines SF areas of new (or altered existing) and unaltered envelope assemblies to calculate the resulting window-to-wall and skylight-to-roof ratios.

Example
Envelope
Areas and
Ratios for
an Alteration
Project






Additional Energy Efficiency and Load Management Measures

- Select building envelope ***additional energy efficiency measures & load management measures*** that will be applied to the project per Sections C406.2 and C406.3.
- Reduced envelope UA measure is applied to the component performance UA calculations in the envelope console.
- All other measures inform the envelope requirements list.

Envelope & Miscellaneous Additional Energy Efficiency and Load Management Measures



* Additional Energy Efficiency Measures

Select all that apply to scope of project

- ☒ Enhanced envelope performance - 15% lower UA 
- ☒ Reduced building air leakage – 68% of max allowed leakage rate 
- ☐ Reduced building air leakage – 33% of max allowed leakage rate 
- ☐ ENERGY STAR commercial kitchen equipment 
- ☐ Efficient elevator equipment (buildings ≥ 3 stories) 
- ☐ No envelope or miscellaneous additional energy efficiency measures included in project

* Load Management Measures

Select all that apply to scope of project

- ☒ Automated shading 
- ☐ Building thermal mass 
- ☐ No envelope or miscellaneous load management measures included in project

Air Barrier Testing

- Additional detail that informs the ***Envelope Requirements List***.
- Indicates whether air barrier testing is included in the project scope in the ***building envelope output report***.

* Air Barrier Testing ⓘ

☒ Air barrier testing included in project scope

Select all that apply to scope of project

☒ Standard building thermal envelope test ⓘ

☐ Weighted average building thermal envelope test

☐ Standard Group R dwelling & sleeping units enclosure test

☐ Weighted average Group R dwelling & sleeping units enclosure test ⓘ

☐ Air barrier testing not included

2021 WSEC-C - Standard building thermal envelope test

Measured air leakage shall not exceed 0.25 cfm/SF of the building thermal area at a pressure differential of 0.3 inch wg (75 Pa). Refer to Section C402.5.3 for additional information.

Building Envelope Console

Project: Sample Department Store - 2021 WSEC

[Back to My Project](#)

Envelope SMART Console

Create a console of information for each applicable Space Conditioning Type / Project Type.

[Overall Compliance Summary](#)

[Envelope R-Value & U-factor Tables](#)

[Console Instructions](#)

Enter project information in Console below for Fully Conditioned / New Building

[Back to General Envelope Information](#)

Space Conditioning Type / Project Type

Fully Conditioned / New Building

Compliance Method:

☒ Prescriptive ☐ Component Performance

[Verify Compliance](#)

[Notifications](#)

Status **PLEASE VERIFY COMPLIANCE**

Last compliance check ran December 1, 2025

Occupancy Type
All Commercial

UA Calculation Adjustment
☐ Enhanced envelope performance - 15% lower UA
None selected





Fenestration Alternates
None selected

Window-Wall-Ratio
22.22%

Skylight-Roof-Ratio
2.00%

Opaque Envelope Assemblies

Add an assembly (Select One)

Opaque Envelope Assemblies			Insulation R-Values		U-Factor	Net Area (SF)
	Type	Assembly ID	Cavity	Continuous Insulation		
 Roof/Ceiling	 Insulation entirely above deck	Roof-1		R-38	U-0.027	49,000
 Walls	 Steel-framed - Commercial	Wall-1	R-0	R-15	U-0.056	14,000

Slab on Grade Floors

Add an assembly (Select One)

Slab on Grade Floors			Insulation R-Values		F-Factor	Perimeter Length (LF)
	Type	Assembly ID	Slab Edge Insulation	Under Slab Insulation		
 Slab-on-grade Floors	 Unheated slab	Slab-1	R-10	R-0	F-0.54	900

Prescriptive R-Value Compliance

Enter project information in Console below for Fully Conditioned / New Building

[Back to General Envelope Information](#)

Space Conditioning Type / Project Type

Fully Conditioned / New Building

Compliance Method:

☒ Prescriptive ☐ Component Performance

Status

PLEASE VERIFY COMPLIANCE

Last compliance check ran December 1, 2025

Occupancy Type
All Commercial

UA Calculation Adjustment
☐ Enhanced envelope performance - 15% lower UA
None selected

Fenestration Alternates
None selected

Window-Wall-Ratio
22.22%

Skylight-Roof-Ratio
2.00%

Steel-framed wall assembly:

- WSEC minimum = R-13 cavity & R-10 continuous insulation
- Proposed = R-15 continuous, no insulation in the cavity

Opaque Envelope Assemblies

Add an assembly (Select One)

Opaque Envelope Assemblies		Insulation R-Values		U-Factor	Net Area (SF)
Type	Assembly ID	Cavity	Continuous Insulation		
Roof/Ceiling	Roof-1		R-38	U-0.027	49,000
Walls	Wall-1	R-0	R-15		14,000

Walls

Saved

Steel-framed - Commercial

* Cavity R-Value (min R-13)

* Continuous Insulation R-Value (min R-10)

* Net Area (SF)

14,000

* Assembly ID

Wall-1

* Location in Documents - Plan & Detail #

Plan A-1

* Cavity R-Value (min R-13)

R-0

* Continuous Insulation R-Value (min R-10)

R-15

* % Penetrations in Continuous Insulation

< 0.04%

Wall Assembly U-factor (max U-0.055)

U-Factor Source

(Select One)

U-Factor Source Description

Wall Framing Depth

2x4

Wall Framing Spacing (OC)

16" OC

* Is this assembly exterior or interior?

Exterior

Save

Close

Prescriptive R-Value Compliance

Envelope SMART Console

Create a console of information for each applicable Space Conditioning Type / Project Type.

Overall Compliance Summary

Envelope R-Value & U-factor Tables

Enter project information in Console below for Fully Conditioned / New Building

[Back to General Envelope Information](#)

Space Conditioning Type / Project Type

Fully Conditioned / New Building

Compliance Method:

☒ Prescriptive ☐ Component Performance

Status

DOES NOT COMPLY PRESCRIPTIVE

Last compliance check ran December 1, 2025

Verify Compliance

Notifications

Occupancy Type
All Commercial

UA Calculation Adjustment
☐ Enhanced envelope performance - 15% lower UA
None selected

Fenestration Alternates
None selected

Window-Wall-Ratio
22.22%

Skylight-Roof-Ratio
2.00%

Fully Conditioned / New Building - Does not comply - These are the following problems:
Walls (Steel-framed - Commercial) - Cavity R-Value: value of R-0_ does not meet the minimum value of R-13

Opaque Envelope Assemblies

Add an assembly (Select One)

Opaque Envelope Assemblies		Type	Assembly ID	Cavity	Insulation R-Values	U-Factor	Net Area (SF)
Roof/Ceiling		Insulation entirely above deck	Roof-1		R-38	U-0.027	49,000
Walls		Steel-framed - Commercial	Wall-1	R-0	R-15		14,000

Slab on Grade Floors

Add an assembly (Select One)

Slab on Grade Floors			Type	Assembly ID	Slab Edge Insulation	Under Slab Insulation	F-Factor	Perimeter Length (LF)
Slab-on-grade Floors			Unheated slab	Slab-1	R-10	R-0	F-0.54	900

Prescriptive U-Factor Compliance

Enter project information in Console below for Fully Conditioned / New Building

[Back to General Envelope Information](#)

Space Conditioning Type / Project Type

Fully Conditioned / New Building

Compliance Method:

☒ Prescriptive ☐ Component Performance

Status

PLEASE VERIFY COMPLIANCE

Last compliance check ran December 1, 2025

Occupancy Type

All Commercial

UA Calculation Adjustment

☐ Enhanced envelope performance - 15% lower UA
None selected

Fenestration Alternates

None selected

Window-Wall-Ratio

22.22%

Skylight-Roof-Ratio

2.00%

Opaque Envelope Assemblies

Add an assembly (Select One)

Opaque Envelope Assemblies			Insulation R-Values		U-Factor	Net Area (SF)
Type	Assembly ID	Cavity	Continuous Insulation			
Roof/Ceiling	Insulation entirely above deck	Roof-1	R-38		U-0.027	49,000
Walls	Steel-framed - Commercial	Wall-1	R-0	R-15	U-0.056	14,000

Walls

Steel-framed - Commercial

Wall Assembly U-factor (max U-0.055)

• Net Area (SF)

14,000

• Cavity R-Value (min R-13)

R-0_

Wall Assembly U-factor (max U-0.055)

U-0.056

Wall Framing Depth

2x4

• Assembly ID

Wall-1

• Continuous Insulation R-Value (min R-10)

R-15

U-Factor Source

WSEC Appendix A Default

Wall Framing Spacing (OC)

16" OC

• Location in Documents - Plan & Detail #

Plan A-1

• % Penetrations in Continuous Insulation

< 0.04%

U-Factor Source Description

TABLE A103.3.6.1(1)

• Is this assembly exterior or interior?

Exterior

Save

Close

Prescriptive U-Factor Compliance

Envelope SMART Console

Create a console of information for each applicable Space Conditioning

Enter project information in Console below for Fully Conditioned

Space Conditioning Type / Project Type

Fully Conditioned / New Building

Compliance Method:

☒ Prescriptive ☐ Component

Status

DOES NOT COMPLY PRESCRIPTIVE

Last compliance check

Occupancy Type
All Commercial

UA Calculation Adjustment
☐ Enhanced envelope performance - 15% lower UA
None selected

Fenestration Alternates
None selected

Window-Wall-Ratio
22.22%

Skylight-Roof-Ratio
2.00%

Compliance Results for Fully Conditioned / New Building

Fully Conditioned / New Building - Does not comply prescriptively.

Fully Conditioned / New Building - Does not comply prescriptively. Would you like to comply via component performance?

Yes

No

Verify Compliance

Opaque Envelope Assemblies

Add an assembly (Select One)

Opaque Envelope Assemblies		Type		Assembly ID	Insulation R-Values		U-Factor	Net Area (SF)
					Cavity	Continuous Insulation		
Roof/Ceiling		Insulation entirely above deck		Roof-1		R-38	U-0.027	49,000
Walls		Steel-framed - Commercial		Wall-1	R-0	R-15	U-0.056	14,000

Slab on Grade Floors

Add an assembly (Select One)

Slab on Grade Floors			Insulation R-Values		F-Factor	Perimeter Length (LF)
Slab on Grade Floors	Type	Assembly ID	Slab Edge Insulation	Under Slab Insulation		
Slab-on-grade Floors	Unheated slab	Slab-1	R-10	R-0	F-0.54	900

Fenestration Assemblies

Add an assembly (Select One)

Fenestration/Opaque Door Assemblies		Type	Assembly ID	U-Factor	SHGC	Door Insulation R-Value	Assembly Rough Opening (SF)
Vertical Fenestration		Fixed - Class AW or site built	Window-1	U-0.33	SHGC-0.38		3,750
Glazed Doors		Sliding entrance door	Glazed Entry	U-0.60	SHGC-0.33		250
Skylights		All types	Skylight-1	U-0.50	SHGC-0.35		1,000

Prescriptive U-Factor Compliance

Envelope SMART Console

Create a console of information for each applicable Space Conditioning Type / Project Type

Enter project information in Console below for Fully Conditioned / New Building

Back to General Envelope Information

Space Conditioning Type / Project Type
Fully Conditioned / New Building

Compliance Method:
☒ Prescriptive ☐ Component

Status
DOES NOT COMPLY PRESCRIPTIVE

Last compliance check

Occupancy Type
All Commercial

UA Calculation Adjustment
☐ Enhanced envelope performance - 15% lower UA
None selected

Fenestration Alternates
None selected

Window-Wall-Ratio
22.22%

Skylight-Roof-Ratio
2.00%

Compliance Results for Fully Conditioned / New Building

Fully Conditioned / New Building - Does not comply prescriptively.

Fully Conditioned / New Building - One or more envelope assemblies do not comply prescriptively. Refer to NOTIFICATIONS and update project information.

OK

Verify Compliance

Notifications

Results if NO selected

Fully Conditioned / New Building - Does not comply - These are the following problems:

Walls (Steel-framed - Commercial) - Wall Assembly U-factor: value of U-0.056 exceeds the maximum allowed value of U-0.055

Opaque Envelope Assemblies

Add an assembly (Select One)

Opaque Envelope Assemblies	Type	Assembly ID	Cavity	Insulation R-Values		U-Factor	Net Area (SF)
				Continuous Insulation			
Roof/Ceiling	Insulation entirely above deck	Roof-1		R-38		U-0.027	49,000
Walls	Steel-framed - Commercial	Wall-1	R-0	R-15		U-0.056	14,000

Slab on Grade Floors

Add an assembly (Select One)

Slab on Grade Floors	Type	Assembly ID	Slab Edge Insulation	Insulation R-Values		F-Factor	Perimeter Length (LF)
				Under Slab Insulation			
Slab-on-grade Floors	Unheated slab	Slab-1	R-10	R-0		F-0.54	900

Component Performance Compliance

Envelope SMART Console

Create a console of information for each applicable Space Conditioning Type

Enter project information in Console below for Fully Conditioned

Space Conditioning Type / Project Type

Fully Conditioned / New Building

Compliance Method:

☒ Prescriptive ☐ Component

Status

DOES NOT COMPLY PRESCRIPTIVE

Last compliance checked

Occupancy Type
All Commercial

UA Calculation Adjustment
☐ Enhanced envelope performance - 15% lower UA
None selected

Fenestration Alternates
None selected

Window-Wall-Ratio
22.22%

Skylight-Roof-Ratio
2.00%

Compliance Results for Fully Conditioned / New Building

Fully Conditioned / New Building - Does not comply prescriptively.

Fully Conditioned / New Building - Does not comply prescriptively. Would you like to comply via component performance?

Yes

No

Opaque Envelope Assemblies

Add an assembly (Select One)

		Insulation R-Values				
Opaque Envelope Assemblies	Type	Assembly ID	Cavity	Continuous Insulation	U-Factor	Net Area (SF)
Roof/Ceiling	Insulation entirely above deck	Roof-1		R-38	U-0.027	49,000
Walls	Steel-framed - Commercial	Wall-1	R-0	R-15	U-0.056	14,000

Slab on Grade Floors

Add an assembly (Select One)

			Insulation R-Values			
Slab on Grade Floors	Type	Assembly ID	Slab Edge Insulation	Under Slab Insulation	F-Factor	Perimeter Length (LF)
Slab-on-grade Floors	Unheated slab	Slab-1	R-10	R-0	F-0.54	900

Fenestration Assemblies

Add an assembly (Select One)

Fenestration/Opaque Door Assemblies	Type	Assembly ID	U-Factor	SHGC	Door Insulation R-Value	Assembly Rough Opening (SF)
Vertical Fenestration	Fixed - Class AW or site built	Window-1	U-0.33	SHGC-0.38		3,750
Glazed Doors	Sliding entrance door	Glazed Entry	U-0.60	SHGC-0.33		250
Skylights	All types	Skylight-1	U-0.50	SHGC-0.35		1,000

Component Performance Compliance

Envelope SMART Console

Create a console of information for each applicable Space Conditioning Type / Project Type.

Overall Compliance Summary

Envelope R-Value & U-factor Tables

Console Instructions

Enter project information in Console below for Fully Conditioned / New Building

Space Conditioning Type / Project Type

Fully Conditioned / New Building

Compliance Method:

☐ Prescriptive ☒ Component Performance

Compliance Results for Fully Conditioned / New Building

Fully Conditioned / New Building - Complies via component performance

OK

UA Table

Verify Compliance

Notifications

Status **COMPLIES COMPONENT PERFORMANCE**

Last compliance check ran December 1, 2025

Occupancy Type
All Commercial

UA Calculation Adjustment
☐ Enhanced envelope performance - 15% lower UA
None selected

Fenestration Alternates
None selected

Window-Wall-Ratio
22.22%

Skylight-Roof-Ratio
2.00%

Results if YES selected

Opaque Envelope Assemblies

Add an assembly (Select One)

Opaque Envelope Assemblies	Type	Assembly ID	Cavity	Insulation R-Values		U-Factor	Net Area (SF)
				Continuous Insulation			
Roof/Ceiling	Insulation entirely above deck	Roof-1		R-38		U-0.027	49,000
Walls	Steel-framed - Commercial	Wall-1	R-0	R-15		U-0.056	14,000

Slab on Grade Floors

Add an assembly (Select One)

Slab on Grade Floors	Type	Assembly ID	Slab Edge Insulation	Insulation R-Values		F-Factor	Perimeter Length (LF)
				Under Slab Insulation			
Slab-on-grade Floors	Unheated slab	Slab-1	R-10	R-0		F-0.54	900

Fenestration Assemblies

Add an assembly (Select One)

Fenestration/Opaque Door Assemblies		Type	Assembly ID	U-Factor	SHGC	Door Insulation R-Value	Assembly Rough Opening (SF)
Vertical Fenestration	Fixed - Class AW or site built	Window-1		0.33	SHGC-0.38		3,750
Glazed Doors	Sliding entrance door	Glazed Entry		U-0.60	SHGC-0.33		250
Skylights	All types	Skylight-1		U-0.50	SHGC-0.35		1,000

Component Performance Compliance

Envelope SMART Console

Create a console of information for each applicable Space Conditioning Type / Project Type.

Overall Compliance Summary

Envelope R-Value & U-factor Tables

Enter project information in Console below for Fully Conditioned / New Building

[Back to General Envelope Information](#)

Space Conditioning Type / Project Type

Fully Conditioned / New Building

Compliance Method:

☐ Prescriptive ☒ Component Performance

Status

COMPLIES COMPONENT PERFORMANCE

Last compliance check ran December 1, 2025

Select to generate a U*A and SHGC*A calculation report

UA Table

Verify Compliance

Notifications

Occupancy Type
All Commercial

UA Calculation Adjustment
☐ Enhanced envelope performance - 15% lower UA
None selected

Fenestration Alternates
None selected

Window-Wall-Ratio
22.22%

Skylight-Roof-Ratio
2.00%

Fully Conditioned / New Building - Complies via component performance [View UA Table]

Close

Opaque Envelope Assemblies

Add an assembly (Select One)

Opaque Envelope Assemblies		Type	Assembly ID	Insulation R-Values		U-Factor	Net Area (SF)
				Cavity	Continuous Insulation		
<input checked="" type="radio"/>	Roof/Ceiling	<input checked="" type="checkbox"/> Insulation entirely above deck	Roof-1		R-38	U-0.027	49,000
<input checked="" type="radio"/>	Walls	<input checked="" type="checkbox"/> Steel-framed - Commercial	Wall-1	R-0	R-15	U-0.056	14,000

Slab on Grade Floors

Add an assembly (Select One)

				Insulation R-Values			
	Slab on Grade Floors	Type	Assembly ID	Slab Edge Insulation	Under Slab Insulation	F-Factor	Perimeter Length (LF)
<div><div></div></div>	Slab-on-grade Floors	<div><div></div><div></div></div> Unheated slab	Slab-1	R-10	R-0	F-0.54	900

U x A Calculation	NEW BUILDING - FULLY CONDITIONED				COMPLIES		
Opaque Envelope Assemblies		PROPOSED			TARGET		
Roof/Ceiling	Assembly ID	Roof/Ceiling Assembly U-Factor	Net Area (SF)	U x A	Roof/Ceiling Assembly U-Factor	Net Area (SF)	U x A
Insulation entirely above deck	Roof-1	0.027	49,000.0	1,323.0	0.027	49,000.0 (1)	1,323.0
Walls	Assembly ID	Wall Assembly U-factor	Net Area (SF)	U x A	Wall Assembly U-factor	Net Area (SF)	U x A
Steel-framed - Commercial	Wall-1	0.056	14,000.0	784.0	0.055	14,000.0 (1)	770.0
Slab on Grade Floors		PROPOSED			TARGET		
Slab-on-grade Floors	Assembly ID	F-Factor	Perimeter Length (LF)	U x A	F-Factor	Perimeter Length (LF)	U x A
Unheated slab	Slab-1	0.54	900.0	486.0	0.54	900.0 (1)	486.0
Fenestration Assemblies		PROPOSED			TARGET		
Vertical Fenestration	Assembly ID	Fenestration U-Factor	Assembly Rough Opening (SF)	U x A	Fenestration U-Factor	Assembly Rough Opening (SF)	U x A
Fixed - Class AW or site built	Window-1	0.33	3,750.0	1,237.5	0.34	3,750.0 (1)	1,275.0
Glazed Doors	Assembly ID	Glazed Door U-Factor	Assembly Rough Opening (SF)	U x A	Glazed Door U-Factor	Assembly Rough Opening (SF)	U x A
Sliding entrance door	Glazed Entry	0.60	250.0	150.0	0.60	250.0 (1)	150.0
Skylights	Assembly ID	Skylight U-Factor	Assembly Rough Opening (SF)	U x A	Skylight U-Factor	Assembly Rough Opening (SF)	U x A
All types	Skylight-1	0.50	1,000.0	500.0	0.50	1,000.0 (1)	500.0
Project Totals		Proposed Area		Proposed UxA	Target Area		Target UxA
		68,900		4,481	68,900		4,504

SHGC x A Calculation	NEW BUILDING - FULLY CONDITIONED				COMPLIES			
Fenestration Assemblies			PROPOSED			TARGET		
Glazed Doors	Assembly ID	PF	Glazed Door SHGC	Assembly Rough Opening (SF)	SHGC x A	Glazed Door SHGC	Assembly Rough Opening (SF)	SHGC x A
Sliding entrance door	Glazed Entry	PF < 0.2	0.33	250.0	82.5	0.33	250.0 (1)	82.5
Horizontal	Assembly ID	PF	Skylight SHGC	Assembly Rough Opening (SF)	SHGC x A	Skylight SHGC	Assembly Rough Opening (SF)	SHGC x A
Skylights	Skylight-1		0.35	1,000.0	350.0	0.35	1,000.0 (1)	350.0
Vertical Fenestration	Assembly ID	PF	Fenestration SHGC	Assembly Rough Opening (SF)	SHGC x A	Fenestration SHGC	Assembly Rough Opening (SF)	SHGC x A
Fixed - Class AW or site built	Window-1	PF < 0.2	0.38	3,750.0	1,425.0	0.38	3,750.0 (1)	1,425.0
Project Totals		Proposed Area		Proposed SHGC x A		Target Area		Target SHGC x A
		5,000		1,858		5,000		1,858

Component Performance Calculations Report

Enhanced Envelope Performance

Envelope SMART Console

Create a console of information for each applicable Space Conditioning Type / Project Type.

Overall Compliance Summary

Envelope R-Value & U-factor Tables

Console Instructions

Enter project information in Console below for Fully Conditioned / New Building

[Back to General Envelope Information](#)

Space Conditioning Type / Project Type

Fully Conditioned / New Building

Compliance Method:

☐ Prescriptive ☒ Component Performance

Select checkbox to apply 0.85 multiplier

UA Table

Verify Compliance

Notifications

Status PLEASE VERIFY COMPLIANCE

Last compliance check ran December 1, 2025

Occupancy Type
All Commercial

UA Calculation Adjustment

☒ Enhanced envelope performance - 15% lower UA than WSEC target

Fenestration Alternates
None selected

Window-Wall-Ratio
22.22%

Skylight-Roof-Ratio
2.00%

Opaque Envelope Assemblies

Add an assembly (Select One)

			Insulation R-Values			
Opaque Envelope Assemblies	Type	Assembly ID	Cavity	Continuous Insulation	U-Factor	Net Area (SF)
Roof/Ceiling	<input checked="" type="checkbox"/> Insulation entirely above deck	Roof-1		R-38	U-0.027	49,000
Walls	<input checked="" type="checkbox"/> Steel-framed - Commercial	Wall-1	R-0	R-15	U-0.056	14,000

Slab on Grade Floors

Add an assembly (Select One)

			Insulation R-Values			
Slab on Grade Floors	Type	Assembly ID	Slab Edge Insulation	Under Slab Insulation	F-Factor	Perimeter Length (LF)
Slab-on-grade Floors	<input checked="" type="checkbox"/> Unheated slab	Slab-1	R-10	R-0	F-0.54	900

Enhanced Envelope Performance

Envelope SMART Console

Create a console of information for each applicable Space Conditioning Type

Enter project information in Console below for Fully Conditioned

Space Conditioning Type / Project Type

Fully Conditioned / New Building

Compliance Method:

☐ Prescriptive ☒ Component

Status

DOES NOT COMPLY COMPONENT PERFORMANCE

Last compliance check ran December 1, 2025

Occupancy Type

All Commercial

UA Calculation Adjustment

☒ Enhanced envelope performance - 15% lower UA than WSEC target

Fenestration Alternates

None selected

Window-Wall-Ratio

22.22%

Skylight-Roof-Ratio

2.00%

Compliance Results for Fully Conditioned / New Building

Fully Conditioned / New Building - Does not comply via component performance. Refer to NOTIFICATIONS and update project information.

OK

Back to General Envelope Information

UA Table

Verify Compliance

Notifications

Fully Conditioned / New Building - Does not comply - These are the following problems:
Proposed total UA of 4,481 exceeds the Code Target UA of 3,828 [View UA Table]

Opaque Envelope Assemblies

Add an assembly (Select One)

Opaque Envelope Assemblies		Type	Assembly ID	Cavity	Insulation R-Values		U-Factor	Net Area (SF)
					Continuous Insulation			
<input checked="" type="radio"/>	Roof/Ceiling	<input checked="" type="checkbox"/> Insulation entirely above deck	Roof-1		R-38		U-0.027	49,000
<input checked="" type="radio"/>	Walls	<input checked="" type="checkbox"/> Steel-framed - Commercial	Wall-1	R-0	R-15		U-0.056	14,000

Slab on Grade Floors

Add an assembly (Select One)

Slab on Grade Floors			Type	Assembly ID	Insulation R-Values		F-Factor	Perimeter Length (LF)
					Slab Edge Insulation	Under Slab Insulation		
<input checked="" type="radio"/>	Slab-on-grade Floors	<input checked="" type="checkbox"/> Unheated slab	Slab-1	R-10	R-0		F-0.54	900

U x A Calculation		NEW BUILDING - FULLY CONDITIONED			DOES NOT COMPLY		
Opaque Envelope Assemblies		PROPOSED			TARGET		
Roof/Ceiling	Assembly ID	Roof/Ceiling Assembly U-Factor	Net Area (SF)	U x A	Roof/Ceiling Assembly U-Factor	Net Area (SF)	U x A
Insulation entirely above deck	Roof-1	0.027	49,000.0	1,323.0	0.027	49,000.0 (1)	1,323.0
Walls	Assembly ID	Wall Assembly U-factor	Net Area (SF)	U x A	Wall Assembly U-factor	Net Area (SF)	U x A
Steel-framed - Commercial	Wall-1	0.056	14,000.0	784.0	0.055	14,000.0 (1)	770.0
Slab on Grade Floors		PROPOSED			TARGET		
Slab-on-grade Floors	Assembly ID	F-Factor	Perimeter Length (LF)	U x A	F-Factor	Perimeter Length (LF)	U x A
Unheated slab	Slab-1	0.54	900.0	486.0	0.54	900.0 (1)	486.0
Fenestration Assemblies		PROPOSED			TARGET		
Vertical Fenestration	Assembly ID	Fenestration U-Factor	Assembly Rough Opening (SF)	U x A	Fenestration U-Factor	Assembly Rough Opening (SF)	U x A
Fixed - Class AW or site built	Window-1	0.33	3,750.0	1,237.5	0.34	3,750.0 (1)	1,275.0
Glazed Doors	Assembly ID	Glazed Door U-Factor	Assembly Rough Opening (SF)	U x A	Glazed Door U-Factor	Assembly Rough Opening (SF)	U x A
Sliding entrance door	Glazed Entry	0.60	250.0	150.0	0.60	250.0 (1)	150.0
Skylights	Assembly ID	Skylight U-Factor	Assembly Rough Opening (SF)	U x A	Skylight U-Factor	Assembly Rough Opening (SF)	U x A
All types	Skylight-1	0.50	1,000.0	500.0	0.50	1,000.0 (1)	500.0
Project Totals		Proposed Area	Proposed UxA	Target Area	Target UxA	Target UxA with Adjustment	
		68,900	4,481	68,900	4,504	3,828	

NOTE: Enhanced envelope credit applied - 0.85 multiplier has been applied to the Total Target UxA for exterior areas only. Refer to Target UxA with Adjustment.

0.85 multiplier applied

Target UxA	Target UxA with Adjustment
4,504	3,828

SHGC x A Calculation		NEW BUILDING - FULLY CONDITIONED				COMPLIES		
Fenestration Assemblies		PROPOSED				TARGET		
Glazed Doors	Assembly ID	PF	Glazed Door SHGC	Assembly Rough Opening (SF)	SHGC x A	Glazed Door SHGC	Assembly Rough Opening (SF)	SHGC x A
Sliding entrance door	Glazed Entry	PF < 0.2	0.33	250.0	82.5	0.33	250.0 (1)	82.5
Horizontal	Assembly ID	PF	Skylight SHGC	Assembly Rough Opening (SF)	SHGC x A	Skylight SHGC	Assembly Rough Opening (SF)	SHGC x A
Skylights	Skylight-1		0.35	1,000.0	350.0	0.35	1,000.0 (1)	350.0
Vertical Fenestration	Assembly ID	PF	Fenestration SHGC	Assembly Rough Opening (SF)	SHGC x A	Fenestration SHGC	Assembly Rough Opening (SF)	SHGC x A
Fixed - Class AW or site built	Window-1	PF < 0.2	0.38	3,750.0	1,425.0	0.38	3,750.0 (1)	1,425.0
Project Totals		Proposed Area	Proposed SHGC x A		Target Area	Target SHGC x A		
		5,000	1,858		5,000	1,858		

Component Performance Calculations Report With 15% Target UA Adjustment



▀ Mechanical Systems

Mechanical Compliance Tools

WASHINGTON STATE ENERGY CODE

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Project: **Sample Department Store WSEC**

Mechanical Compliance Tool

Mechanical documentation tools include a Smart Mechanical Requirements List. Create a Smart requirements list to generate a consolidated information you provide.

Create Smart Forms to demonstrate compliance with the WSEC mechanical systems and equipment information you provide.

Topics include central plant equipment, single zone and multiple zone equipment, total system performance ratio (TSPR) and mechanical equipment.

NOTE - The 2018 WSEC Mechanical Requirements List features a new Smart Mechanical Requirements List.

Topics include:

- Heating and cooling efficiency requirements for single zone, multiple zone and central plant equipment & systems
- Ventilation and dedicated outside air system requirements
- Mechanical additional energy efficiency measures
- Prescriptive vs fossil fuel compliance path
- Various additional mechanical requirements

Back to My Project

Notifications

General mechanical

Proposed

Passive convection

Mechanical **SMART** Code Requirements List

Edit Requirements List

Mechanical Project Scope

- Compliance documentation features include verification of proposed heating & cooling equipment efficiency metrics.
- Includes verification of better-than-code equipment efficiencies for mechanical provisions where higher efficiency is required to comply with an economizer exception.
- Documents how ventilation is provided in spaces served by heating/cooling systems.

Mechanical SMART Console Information

* Mechanical Scope

New Construction and Additions

Select all that apply to scope of project.

- ☒ Single Zone Systems & Equipment
 - ☒ Air Systems & Equipment
 - ☒ Heating & Cooling - Heat Pumps
 - ☐ Heating - Fuel-fired, Electric Resistance, Hydronic
 - ☐ Cooling - All Source Types
 - ☒ Dedicated Ventilation (DOAS)
 - ☐ Radiant & Passive Convection Equipment
- ☐ Multiple Zone Systems & Equipment
- ☒ Central Plant Systems
 - ☐ Chilled Water Systems
 - ☐ Heating Water Systems
 - ☐ Water Source Loop
 - ☒ VRF Multi-Split Systems - Outdoor Units
 - ☐ Ground & Groundwater Source Loop

Additional Energy Efficiency and Load Management Measures

- Select mechanical ***additional energy efficiency measures & load management measures*** that will be applied to the project per Sections C406.2 and C406.3.
- Use the C406/C411 Additional Energy Efficiency & Load Management Measures Excel worksheet to document overall better-than-code equipment efficiency achieved.
- All other measures inform the mechanical requirements list.

Systems & Equipment Additional Energy Efficiency and Load Management Measures

★ Additional Energy Efficiency Measures

Select all that apply to scope of project.

- ☐ HVAC cooling equipment - 5-20% better than code efficiency & improved fan efficiency ⓘ
- ☐ HVAC heating equipment - 5-20% better than code efficiency ⓘ
- ☐ High performance dedicated outside air systems (DOAS) ⓘ
- ☒ HVAC TSPR score 5-20% better than code minimum ⓘ
- ☐ Low-carbon district energy exchange systems for HVAC loads improved by 10% ⓘ
- ☐ Low-carbon district energy exchange systems for HVAC loads improved by 20% ⓘ
- ☐ Fault detection and diagnostics (FDD) systems ⓘ
- ☐ No mechanical additional energy efficiency measures included in project

★ Load Management Measures

Select all that apply to scope of project.

- ☒ HVAC load management ⓘ
- ☐ Cooling energy storage ⓘ
- ☐ No mechanical load management measures included in project

Better-Than-Code Equipment Efficiency

COOLING EQUIPMENT OVERCODE PERFORMANCE						C406-AC-EFF
2021 Washington State Energy Code Compliance Forms for Commercial Buildings as defined in Chapter 2						Revised Oct 2025
Project Title: Sample Department Store					Date: 12/1/25	
Area Id	Area	Description				
Space Cooling Equipment / Systems						
C406.2.2.2 Improved Cooling Efficiency Credits						
Equipment Id	Eq Desc	Cooling Output Capacity (Btu/hr)	Proposed Cooling Efficiency	Cooling Efficiency Units	Code Cooling Efficiency	Percent Above Code
HP-1	Packaged Heat Pump	120,000	12.2	EER	11	10.9%
HP-2	Packaged Heat Pump	60,000	15	SEER2	13.4	11.9%
HP-3	Packaged Heat Pump	60,000	15	SEER2	13.4	11.9%
VRF-1	VRF Multit-Split System	72,000	13	EER	11	18.2%
Total		312,000	Percent Better than Code			13.0%

SPACE HEATING EQUIPMENT AND SYSTEMS FUEL TYPE AND CODE PATH							SPC-EQ-DET		
2021 Washington State Energy Code Compliance Forms for Commercial Buildings as defined in Chapter 2							Revised Oct 2025		
Project Title: Sample Department Store							Date: 12/1/25		
<p>These tables are provided to calculate the fraction of space heat capacity that must comply via C401.3.3 and capacity weighted over code efficiency percentage for use in C406-CALC. Results are not automatically assigned and must be applied to the appropriate C406-CALC areas by the user. These can be used to calculate the code fuel path and/or the improved heating efficiency. Values can be entered for the whole building and used for all areas, or entered for each area. When calculating inputs for areas heated by equipment located in other areas enter the capacity of the terminal equipment. Equipment of similar type may be lumped for the fuel type calculation, equipment similar type and capacity category may be lumped for the Improved Heating Efficiency Credits. Indicate equipment counts in the Eq Desc field and enter total heating capacity for all the equipment.</p>									
Area Id	Retail	Area (sf)	50000	Description: Retail Sales Floor, Offices & Employee Lounge					
		Total Heating Output Capacity (Btu/hr)	C403.1.4 / C401.3.3 Compliance				C406.2.2.3 Improved Heating Efficiency Credits		
Equipment Id	Eq Desc		Primary Heating Fuel Type	Code path	C403.1.4 HP Equipment Exception #	Proposed Efficiency	Efficiency Units	Code Efficiency	Percent Above Code
HP-1	Packaged Heat Pump	135,000	Heat Pump	C403.1.4 Heat pump		4.1	COP	3.4	20.6%
HP-2	Packaged Heat Pump	65,000	Heat Pump	C403.1.4 Heat pump		7.8	COP	6.7	16.4%
HP-3	Packaged Heat Pump	65,000	Heat Pump	C403.1.4 Heat pump		7.8	COP	6.7	16.4%
VRF-1	VRF Multi-Split System	72,000	Heat Pump	C403.1.4 Heat pump		4	COP	3.3	21.2%
Total Heating Capacity		337,000	Fossil Fuel Fraction		0.00	Percent Better than Code			19.1%

DOAS and TSPR

- Indicate if the project includes an occupancy classification that is required to be served by a dedicated outside air system (DOAS) per Table C403.3.5.
- Indicate if the requirements in Section C403.1.1 Total System Performance Ratio (TSPR) apply based on project occupancy, conditioned floor area SF and proposed mechanical systems.
- Responses to these questions are presented in the mechanical output report.

★ Building Occupancies Requiring Dedicated Outside Air Systems (DOAS) ⓘ

Does the building include one or more of the occupancy classifications requiring DOAS?

☒ Yes ☐ No

Systems Requiring Total System Performance Ratio (TSPR) Score ⓘ ⓘ

★ Does the project include all of the following - building conditioned floor area is 5,000 sf or larger; occupancy type is office, retail, library, education or multifamily; DOAS requirements apply?

☒ Yes ☐ No

★ Do all mechanical systems in the project either comply with all standard reference design parameters per Appendix D or qualify for an exception to TSPR?

☒ Yes ☐ No

Additional Requirements List Details



- Additional details that inform the ***Mechanical Requirements List***
- Identify the method(s) of ventilation air delivery included in the project.
- Indicate whether cooling systems include economizer controls or comply with economizer exception(s).
- Indicate whether mechanical system commissioning is required.

* Economizer Systems

- ☒ All cooling systems are provided with air economizer
- ☐ Exception(s) to air economizer are applied to one or more cooling systems
- ☐ Economizer requirements do not apply to project

Ventilation Air Systems

Select all that apply to scope of project.

- ☐ Untempered ventilation/exhaust
- ☒ Dedicated outside air system (DOAS)
- ☐ Standard VAV system
- ☐ High efficiency VAV system (HEVAV) 
- ☐ High efficiency single-zone VAV system (HEVAV) 
- ☐ Natural ventilation
- ☐ Other method of ventilation air delivery
- ☐ No occupied spaces - ventilation not required

Mechanical Systems Capacity Thresholds for Commissioning

Do total installed capacities of all mechanical systems in the building meet all of the following - cooling capacity is less than 180,000 Btu/h (15 tons); heating capacity is less than 240,000 Btu/h; energy recovery ventilation capacity is less than 300 cfm?

- ☒ Yes
- ☐ No

Mechanical Console - Scope & Project Type

Project: Sample Department Store - 2021 WSEC

[Back to My Project](#) [Back to Mechanical Compliance Tools](#)

Mechanical SMART Console

Create a console of information for each applicable Mechanical Scope Type / Project Type.

[Overall Compliance Summary](#) [Mechanical Equipment Efficiency Tables](#) [Console Instructions](#)

Select Project Scope from drop down menu below.

Mechanical Scope Type / Project Type

(Select Project Scope) ▼

(Select Project Scope)

(Complies) Central Plant Systems / New Construction

(Complies) Single Zone Systems & Equipment / New Building

[Back to General Mechanical Information](#)

- Select the Project Scope to access the mechanical systems & equipment features.
- Categories include single zone, multiple zone and central plant systems.
- Separate consoles for each mechanical system category and project type.

Example - Sample Department Store

Retail Areas

- Single zone packaged air-cooled heat pumps provide heating and cooling.
- Single zone and multiple zone dedicated outside air systems (DOAS) provide ventilation.

Offices & Employee Lounge

- Each zone is served by a variable refrigerant flow (VRF) indoor fan coil unit, entered as single zone equipment.
- Multiple fan coils are served by a VRF air-cooled heat pump outdoor unit, entered as a central plant system.
- Multiple zone DOAS provides ventilation for each zone.

Mechanical Console - Entering A Single Zone or Multiple Zone System

STEP 1 - Systems & equipment summary table

- Select a mechanical equipment category from the dropdown menu. Assign a **System/Equipment ID** and enter the required information.
- If there are DOAS in the project, enter information about these systems first so they are available to pair with the corresponding heating & cooling systems.

STEPS 2 & 3 - Heating and cooling systems & equipment tables

- For each air system entered in the Summary table, select the associated heating and cooling system or equipment type from the dropdown menu.
- Assign the **System/Equipment ID** from the Summary table and then enter information about the proposed heating and cooling capacity, economizer compliance method (for cooling), and rated efficiencies.

STEP 1 - SZ Systems & Equipment Summary

Mechanical SMART Console

Create a console of information for each applicable Mechanical Scope Type / Project Type.

Overall Compliance Summary

Mechanical Equipment Efficiency Tables

Console Instructions

Enter project information in Console below for Single Zone Systems & Equipment / New Building

[Back to General Mechanical Information](#)

Mechanical Scope Type / Project Type

Single Zone Systems & Equipment / New Building

Compliance Verification

- ☒ Code minimum equipment efficiency and better than code efficiency for economizer exceptions

Verify Compliance

Notifications

Status

PLEASE VERIFY COMPLIANCE

Last compliance check ran November 29, 2025

Single Zone Systems & Equipment Summary - Air, Radiant and Passive Convection

INSTRUCTIONS FOR HOW TO ENTER A SYSTEM: STEP 1 - In the Single Zone Systems & Equipment Summary table, select a general category type from the drop down menu. Assign a System/Equipment ID and enter the required information. If there are DOAS in the project, enter information about these systems first so they are available to pair with single zone cooling and heating systems and equipment. For systems other than DOAS, if the ventilation air source is a separate DOAS, then selected the DOAS ID that the system/equipment is paired with. Note that if the project includes radiant and/or passive convection equipment, be sure to select this checkbox under mechanical scope on the General Mechanical Information page to activate this table in the console.

Close

Add Category (Select One)

General Category	System/ Equip ID	Quantity	Discrete Area(s) Served	Supply Airflow Control	Ventilation CFM	Ventilation Air Source	DOAS ID that system/equip is paired with	Energy recovery efficiency (%)
Dedicated outside air system (DOAS)	DOAS-1		Retail Areas	Constant volume	1,500			80
Dedicated outside air system (DOAS)	DOAS-2		Retail Areas	Constant volume	1,500			80
Dedicated outside air system (DOAS)	DOAS-3		Offices & Employee Lounge	Constant volume	750			80
Fan coil unit, hydronic & VRF	VRF FC-1-3	3	Offices & Employee Lounge	Variable air volume	0	Separate DOAS	DOAS-3	
Heat pump, split & single package, SC, SDHV	HP-1	1	Retail Areas	Variable air volume	0	Separate DOAS	DOAS-1	0
Heat pump, split & single package, SC, SDHV	HP-2	1	Retail Areas	Variable air volume	0	Separate DOAS	DOAS-1	0
Heat pump, split & single package, SC, SDHV	HP-3	1	Retail Areas	Variable air volume	0	Separate DOAS	DOAS-2	0

Pair Heating & Cooling System With DOAS

Single Zone Systems & Equipment Summary - Air, Radiant and Passive Convection

Add Category (Select One) ▼

General Category	System/ Equip ID	Quantity	Discrete Area(s) Served	Supply Airflow Control	Ventilation CFM	Ventilation Air Source	DOAS ID that system/equip is paired with	Energy recovery efficiency (%)
● Dedicated outside air system (DOAS)	DOAS-1		Retail Areas	Constant volume	1,500			80
● Dedicated outside air system (DOAS)	DOAS-2		Retail Areas	Constant volume	1,500			80
● Dedicated outside air system (DOAS)	DOAS-3		Offices & Employee Lounge	Constant volume	750			80
● Fan coil unit, hydronic & VRF	VRF FC-1-3	3	Offices & Employee Lounge	Variable air volume	0	Separate DOAS	DOAS-3	
● Heat pump, split & single package, SC, SDHV	HP-1	1	Retail Areas	Variable air volume	0	Separate DOAS	DOAS-1	0

Heat pump, split & single package, SC, SDHV

* System/ Equip ID

HP-1

System/Equip ID for a single or multiple items?

Multiple items w/ identical heating & cooling capacity ▼

* Ventilation Standard Applied

IMC Ventilation ▼

Which DOAS ID is system paired with?

(Select One)

✓ DOAS-1

DOAS-2

DOAS-3

* Discrete Area(s) Served

Retail Areas

* Quantity

1

Ventilation CFM

* Ventilation energy recovery (ER) required?

Not provided, not required ▼

* Location in Documents - Plans # or ALL

M-1

* Supply Airflow Control

Variable air volume ▼

* Ventilation Air Source

(Select One)

Integral

✓ Separate DOAS

Other System

			Retail Areas	Variable air volume	0	Separate DOAS	DOAS-2	0
● Heat pump, split & single package, SC, SDHV	HP-3	1	Retail Areas	Variable air volume	0	Separate DOAS	DOAS-2	0









Enter ventilation CFM under the corresponding DOAS

STEPS 2 & 3 - SZ Cooling & Heating

Air Systems & Equipment - Cooling

STEP 2 - For each air system entered in the Summary table, select the associated cooling system/equipment type from the drop down menu. Assign the System/Equipment ID from the Summary table and then enter information about the cooling capacity, economizer and rated efficiencies. If the system does not have cooling capacity, no cooling entry is required. Close









Add System/Equipment (Select One) ▼

Cooling System/Equipment Type	Specific Type	System/Equip ID from Summary	Cooling Capacity (Btu/h)	Proposed Cooling Efficiency	CE Units	Proposed Part Load Cooling Efficiency	PL Units	HC Units
Fan coils, hydronic & VRF, cooling	  VRF	VRF FC-1-3	72,000					
Heat pump, air cooled	  Single package	HP-1	120,000	12.2	EER	16.0	IEER	
Heat pump, air cooled	  Single package	HP-2	60,000	15.0	SEER2	0	IEER	
Heat pump, air cooled	  Single package	HP-3	60,000	15.0	SEER2	0	IEER	

Air Systems & Equipment - Heating

STEP 3 - For each air system entered in the Summary table, select the associated heating system/equipment type from the drop down menu. Assign the System/Equipment ID from the Summary table and then enter information about the heating capacity and rated efficiencies. If the system does not have heating capacity, no heating entry is required. Close

Add System/Equipment (Select One) ▼

Heating System/Equipment Type	Specific Type	System/Equip ID from Summary	Heat Pump Heating Capacity (Btu/h)	Heat Pump Cooling Capacity (Btu/h) - Same as Cooling Table	Proposed Heat Pump Heating Efficiency	HPH Units	Heating System/Equip Capacity	HC Units	Proposed Heating Equipment Efficiency	HE Units
Fan coils, hydronic & VRF, heating	  VRF	VRF FC-1-3					72,000	Btu/h		
Heat pump, air cooled, heating	  Single package	HP-1	135,000	120,000	4.1	COP				
Heat pump, air cooled, heating	  Single package	HP-2	65,000	60,000	7.8	HSPF2				
Heat pump, air cooled, heating	  Single package	HP-3	65,000	60,000	7.8	HSPF2				

Single Zone Cooling With Economizer

* Economizer Compliance Method

Air-side economizer provided

Air Systems & Equipment - Cooling

Add System/Equipment (Select One) ▼

Cooling System/Equipment Type	Specific Type	System/Equip ID from Summary	Cooling Capacity (Btu/h)	Proposed Cooling Efficiency	CE Units	Proposed Part Load Cooling Efficiency	PL Units	HC Units
<input checked="" type="radio"/> Fan coils, hydronic & VRF, cooling	<input checked="" type="checkbox"/> VRF	VRF FC-1-3	72,000					
<input checked="" type="radio"/> Heat pump, air cooled	<input checked="" type="checkbox"/> Single package	HP-1	120,000	12.2	EER	16.0	IEER	

Heat pump, air cooled

Single package

* System/Equip ID from Summary

HP-1

* Economizer Compliance Method

Air-side economizer provided

* Cooling Capacity (Btu/h)

120,000

* Heating Section/Auxiliary Heating Type

Electric resistance (or None)

* Full Load Econo Exception Multiplier

0

* Part Load Econo Exception Multiplier

0

* Proposed Cooling Efficiency (min 11.000)

12.2

* Cooling Efficiency Units (CE)

EER

* Proposed Part Load Cooling Efficiency (min 13.900)

16

Part Load Efficiency Units (PL)

IEER

WSEC Equip Efficiency Reference Table - Cooling

Table C403.3.2(2) Unitary Heat Pumps

Save

Close

Proposed EER Cooling Efficiency (min 11.000)

Proposed IEER Cooling Efficiency (min 13.900)

<input checked="" type="radio"/> Heat pump, air cooled	<input checked="" type="checkbox"/> Single package	HP-2	60,000	15.0	SEER2	0	IEER	
<input checked="" type="radio"/> Heat pump, air cooled	<input checked="" type="checkbox"/> Single package	HP-3	60,000	15.0	SEER2	0	IEER	

Single Zone Cooling With Economizer

Mechanical SMART Console

Create a console of information for each applicable Mech

Compliance Results for Single Zone Systems & Equipment / New Building

Single Zone Systems & Equipment / New Building - complies

OK

Enter project information in Console below for Single

Mechanical Scope Type / Project Type

Single Zone Systems & Equipment / New Building

Compliance Verification

☒ Code minimum equipment efficiency and better than code efficiency for economizer exceptions

Status

COMPLIES

Last compliance check ran December 1, 2025

Back to General Mechanical Information

Verify Compliance

Notifications

Air Systems & Equipment - Cooling

Add System/Equipment (Select One)

Cooling System/Equipment Type	Specific Type	System/Equip ID from Summary	Cooling Capacity (Btu/h)	Proposed Cooling Efficiency	CE Units	Proposed Part Load Cooling Efficiency	PL Units	HC Units
Fan coils, hydronic & VRF, cooling	VRF	VRF FC-1-3	72,000					
Heat pump, air cooled	Single package	HP-1	120,000	12.2	EER	16.0	IEER	
Heat pump, air cooled	Single package	HP-2	60,000	15.0	SEER2	0	IEER	
Heat pump, air cooled	Single package	HP-3	60,000	15.0	SEER2	0	IEER	

Air Systems & Equipment - Heating

Add System/Equipment (Select One)

Heating System/Equipment Type	Specific Type	System/Equip ID from Summary	Heat Pump Heating Capacity (Btu/h)	Heat Pump Cooling Capacity (Btu/h) - Same as Cooling Table	Proposed Heat Pump Heating Efficiency	HPH Units	Heating System/Equip Capacity	HC Units	Proposed Heating Equipment Efficiency	HE Units
Fan coils, hydronic & VRF, heating	VRF	VRF FC-1-3					72,000	Btu/h		
Heat pump, air cooled, heating	Single package	HP-1	135,000	120,000	4.1	COP				
Heat pump, air cooled, heating	Single package	HP-2	65,000	60,000	7.8	HSPF2				
Heat pump, air cooled, heating	Single package	HP-3	65,000	60,000	7.8	HSPF2				

Single Zone Cooling With Econo Exception

* Economizer Compliance Method

Applying air-side economizer exception

Air Systems & Equipment - Cooling

Add System/Equipment (Select One) ▼

Cooling System/Equipment Type	Specific Type	System/Equip ID from Summary	Cooling Capacity (Btu/h)	Proposed Cooling Efficiency	CE Units	Proposed Part Load Cooling Efficiency	PL Units	HC Units
<input checked="" type="radio"/> Fan coils, hydronic & VRF, cooling	<input checked="" type="checkbox"/> VRF	VRF FC-1-3	72,000					
<input checked="" type="radio"/> Heat pump, air cooled	<input checked="" type="checkbox"/> Single package	HP-1	120,000	12.2	EER	16.0	IEER	

Heat pump, air cooled

Single package

* System/Equip ID from Summary

HP-1

* Cooling Capacity (Btu/h)

120,000

* Heating Section/Auxiliary Heating Type

Electric resistance (or None)

* Economizer Compliance Method

Applying air-side economizer exception

Air-side economizer exception applied

Exp3(1) - HE single zone system, Climate Zone 4C

Full Load Econo Exception Multiplier

1.64

Part Load Econo Exception Multiplier

1.64

* Proposed Part Load Cooling Efficiency (min 22.796)

16

* Proposed Cooling Efficiency (min 18.040)

12.2

Part Load Efficiency Units (PL)

IEER

Cooling Efficiency Units (CE)

EER

WSEC Equip Efficiency Reference Table - Cooling

Table C403.3.2(2) Unitary Heat Pumps

Save

Close

<input checked="" type="radio"/> Heat pump, air cooled	<input checked="" type="checkbox"/> Single package	HP-2	60,000	15.0	SEER2	0	IEER	
<input checked="" type="radio"/> Heat pump, air cooled	<input checked="" type="checkbox"/> Single package	HP-3	60,000	15.0	SEER2	0	IEER	

High efficiency single zone system exception

Economizer exception multiplier = 1.64 (64%)

Single Zone Cooling With Econo Exception

* Economizer Compliance Method

Applying air-side economizer exception

Air Systems & Equipment - Cooling

Add System/Equipment (Select One) ▼

Cooling System/Equipment Type	Specific Type	System/Equip ID from Summary	Cooling Capacity (Btu/h)	Proposed Cooling Efficiency	CE Units	Proposed Part Load Cooling Efficiency	PL Units	HC Units
<input checked="" type="radio"/> Fan coils, hydronic & VRF, cooling	<input checked="" type="checkbox"/> VRF	VRF FC-1-3	72,000					
<input checked="" type="radio"/> Heat pump, air cooled	<input checked="" type="checkbox"/> Single package	HP-1	120,000	12.2	EER	16.0	IEER	

Heat pump, air cooled

Single package

* System/Equip ID from Summary

HP-1 ▼

* Economizer Compliance Method

Applying air-side economizer exception ▼

Part Load Econo Exception Multiplier

1.64

* Proposed Part Load Cooling Efficiency (min 22.796)

16

* Cooling Capacity (Btu/h)

120,000

Air-side economizer exception applied i

Exp3(1) - HE single zone system, Climate Zone 4C ▼

* Proposed Cooling Efficiency (min 18.040)

12.2

Part Load Efficiency Units (PL)

IEER

* Heating Section/Auxiliary Heating Type i

Electric resistance (or None) ▼

Full Load Econo Exception Multiplier

1.64

Cooling Efficiency Units (CE)

EER

WSEC Equip Efficiency Reference Table - Cooling

Table C403.3.2(2) Unitary Heat Pumps ▼

Save

Close

<input checked="" type="radio"/> Heat pump, air cooled	<input checked="" type="checkbox"/> Single package	HP-2	60,000	15.0	SEER2	0	IEER	
<input checked="" type="radio"/> Heat pump, air cooled	<input checked="" type="checkbox"/> Single package	HP-3	60,000	15.0	SEER2	0	IEER	

Proposed EER Cooling Efficiency (min 18.040) ▼

Proposed IEER Cooling Efficiency (min 22.76)

Single Zone Cooling With Econo Exception

Mechanical Scope Type / Project Type

Single Zone Systems & Equipment / New Building

Compliance Verification

☒ Code minimum equipment efficiency and better than code efficiency for economizer exceptions

Verify Compliance

2

Notifications

Status

DOES NOT COMPLY

Last compliance check ran November 30, 2025

Single Zone Systems & Equipment / New Building - Does not comply - These are the following problems:

Heat pump, air cooled (Single package) - Proposed Cooling Efficiency: value of 12.2 does not meet the minimum value of 18.040

Heat pump, air cooled (Single package) - Proposed Part Load Cooling Efficiency: value of 16 does not meet the minimum value of 22.796

Add System/Equipment (Select One)

Cooling System/Equipment Type	Specific Type	System/Equip ID from Summary	Cooling Capacity (Btu/h)	Proposed Cooling Efficiency	CE Units	Proposed Part Load Cooling Efficiency	PL Units	HC Units
Fan coils, hydronic & VRF, cooling	VRF	VRF FC-1-3	72,000					
Heat pump, air cooled	Single package	HP-1	120,000	16.0	EER	20.0	IEER	

Heat pump, air cooled

Single package

* System/Equip ID from Summary

HP-1

* Cooling Capacity (Btu/h)

120,000

* Heating Section/Auxiliary Heating Type

Electric resistance (or None)

* Economizer Compliance Method

Applying air-side economizer exception

Air-side economizer exception applied

Exp3(1) - HE single zone system, Climate Zone 4C

Full Load Econo Exception Multiplier

1.64

Part Load Econo Exception Multiplier

1.64

* Proposed Cooling Efficiency (min 18.040)

16

Part Load Efficiency Units (PL)

IEER

* Proposed Part Load Cooling Efficiency (min 22.796)

20

WSEC Equip Efficiency Reference Table - Cooling

Table C403.3.2(2) Unitary Heat Pumps

Save

Close

Heat pump, air cooled	Single package	HP-2	60,000	15.0	SEER2	0	IEER	
Heat pump, air cooled	Single package	HP-3	60,000	15.0	SEER2	0	IEER	

VRF Central Plant System

Mechanical SMART Console

Create a console of information for each applicable Mechanical System

Compliance Results for Central Plant Systems / New Construction

Central Plant Systems / New Construction - complies

OK

Enter project information in Console below for Central Plant Systems / New Construction

[Back to General Mechanical Information](#)

Mechanical Scope Type / Project Type

Central Plant Systems / New Construction

Compliance Verification

- ☒ Code minimum equipment efficiency and better than code efficiency for economizer exceptions

Verify Compliance

Notifications ¹

Status

COMPLIES

Last compliance check ran November 30, 2025

VRF Multi-Split System - Outdoor Unit Cooling

Add System (Select One)

Plant Equipment	Type	System ID	Cooling Capacity (Btu/h)	Proposed Cooling Efficiency	CE Units	Proposed Part Load Cooling Efficiency	VRF PL Units
VRF air-cooled HP	Heat pump	VRF-1	72,000	13.0	EER	20.0	IEER

VRF Multi-Split System - Outdoor Unit Heating

Add System (Select One)

Plant Equipment	Type	System ID (from VRF Cooling)	Heating Capacity (Btu/h)	Cooling Capacity (Btu/h) - Same as Cooling Table	Proposed Heating Efficiency	HE Units	Proposed Low OSA Temp Efficiency	LTH Units
VRF air-cooled HP, heating	Heat pump	VRF-1	72,000.0	72,000	5.0	COP	3.0	COP

VRF Central Plant System

Mechanical SMART Console

Create a console of information for each applicable Mechanical Scope Type / Project Type.

Overall Compliance Summary

Mechanical Equipment Efficiency Tables

Console Instructions

Enter project information in Console below for Central Plant Systems / New Construction

[Back to General Mechanical Information](#)

Mechanical Scope Type / Project Type

Central Plant Systems / New Construction

Compliance Verification

☒ Code minimum equipment efficiency and better than code efficiency for economizer exceptions

Verify Compliance

Notifications

Status

COMPLIES

Last compliance check ran November 30, 2025

VRF Multi-Split System - Outdoor Unit Cooling

Add System (Select One)

Plant Equipment	Type	System ID	Cooling Capacity (Btu/h)	Proposed Cooling Efficiency	CE Units	Proposed Part Load Cooling Efficiency	VRF PL Units
VRF air-cooled HP	Heat pump	VRF-1	72,000	13.0	EER	20.0	IEER

VRF air-cooled HP

Heat pump

System ID

VRF-1

Economizer Compliance Method

Applying air-side economizer exception

Part Load Econo Exception Multiplier

0

Proposed Part Load Cooling Efficiency (min 14.600)

20

WSEC Equipment Efficiency Reference Table

Table C403.3.2(9) VRF Air-to-Air & Water Source Heat Pumps

Save

Close

Location In Project Documents - Plan/Detail

M-1

Air-side economizer exception applied?

Exp 1 - DOAS paired with cooling system (Note equip location limits)

Proposed Cooling Efficiency (min 11.000)

13

Part Load Efficiency Units (PL)

IEER

System/Equip Compliance Path

General Prescriptive

Cooling Capacity (Btu/h)

72,000

Full Load Econo Exception Multiplier

0

Cooling Efficiency Units (CE)

EER

Quantity of Fan Coil Units in VRF System

3


Paired with DOAS exception

No multiplier applies to this exception




Compliance Output Reports

Step 3 - Download Output Reports

**WASHINGTON STATE
ENERGY CODE**

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LOGOUT

MY ACCOUNT

COMPLIANCE TOOLS

WSEC DOCUMENTS

NEWSROOM

TECHNICAL SUPPORT

RESIDENTIAL SUPPORT

GENERAL

ADMIN

Project: **Sample Department Store - 2021
WSEC**[Back to My Projects](#)

Get StartedShareNotifications

1Step 1
Project Information

2Step 2
Discipline Information
INCOMPLETE Information

3Step 3
Download and Submit

Project Information

To set up a project, enter general information about the overall project scope and identify all disciplines that will be included.

Select Energy Code

Select the edition of the energy code that the project is required to comply with based on the estimated permit submittal date.


★ Energy Code ⓘ

☐ 2015 Washington State Energy Code


☐ 2018 Washington State Energy Code

☒ 2021 Washington State Energy Code

Step 3 - Download Output Reports

**WASHINGTON STATE
ENERGY CODE**

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TECHNICAL SUPPORT

RESIDENTIAL SUPPORT

GENERAL

ADMIN

Project: **Sample Department Store - 2021**
WSEC

Back to My Projects

Get Started

Share

Notifications 0

1

2

3

Step 1
Project InformationStep 2
Discipline Information**Step 3**
Download and Submit

Download and Submit

Output reports for Smart Requirements Lists and Smart Compliance Documentation Forms are generated based upon the information entered under Step 1 Project Information and Step 2 Discipline Information.

Select the links provided below to download PDF files of your completed documents. If icons are not presented for the discipline(s) you are looking for then refer to the *Project Scope* section of Step 1 Project Information to confirm that checkboxes for all disciplines included in the project have been selected.

Select the *Back to My Projects* button above to return to your list of projects.

Envelope

 Download **SMART** Code Requirements List

 Complete **SMART** Form Now

Lighting

 Download **SMART** Code Requirements List

 Print **SMART** Report

Mechanical

 Download **SMART** Code Requirements List

 Print **SMART** Report

ENVELOPE COMPLIANCE SUMMARY

2021 WSEC Compliance Forms for Commercial Buildings including Group R2, R3 & R4 over 3 stories and all R1

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Project & Applicant Information	Project Title	Sample Department Store - 2021 WSEC	For Building Department Use:	Date: Dec 01, 2025
	Project Address	1234 Main Street Shoreline, WA 98133		
	Applicant Name	Lisa Rosenow		
	Applicant Phone	360-539-5202		
	Applicant Email	lrosenow@evergreen-tech.net		
For questions about this report, contact WSEC Commercial Technical Support at 360-539-5300 or via email at com.techsupport@waenergycodes.com				

General Occupancy	All Commercial	General Building Use Type(s)	Retail, General Sales Warehouse, General Storage	Building Cond. Floor Area	50,000
Project Scope	New Building	Space Conditioning Categories	Fully Conditioned Semi-heated	Project Cond. Floor Area	50,000
				Floors Above Grade	1
				Compliance Method	General Prescriptive Fossil Fuel Heating

Envelope Project Description					
------------------------------	--	--	--	--	--

Envelope Compliance Scope and Method	Scope	Space Conditioning Category	Compliance Method	WWR/SRR per Category	UA Calculation Adjustment	Fenestration Alternates	Compliance Verification
	New Building	Fully Conditioned	Component performance	22.22% / 2.00%	None selected	No alternates selected	COMPLIES

Additional Energy Efficiency (AEC) Measures Included	Enhanced envelope performance - 15% lower UA			Load Management (LDM) Measures Included	Automated shading
Air Barrier Testing	Standard building thermal envelope test			Air Barrier Comments	

Scope & Space Conditioning	NEW BUILDING - FULLY CONDITIONED			Compliance Verification	COMPLIES
Window-to-wall Ratio	22.22%	Skylight-to-roof-ratio	2.00%	Vertical Fenestration Alternate	No alternates selected

Opaque Envelope Assemblies

				Insulation R-Values				
Roof/Ceiling	Location in Documents	Assembly ID	Assembly Location	Cavity	Continuous (% penetration)	2nd Layer (MB Roof)	U-Factor	Net Area (SF)
Insulation entirely above deck	Plan A-1	Roof-1	Exterior		R-38 (< 0.04%)		U-0.027	49,000
	Sloped Roof & Tapered Insulation: Sloped with tapered insulation			U-Factor Source:				
	U-Factor Source Description:							
Walls	Location in Documents	Assembly ID	Assembly Location	Cavity	Continuous (% penetration)	Insulated Wall Furring	U-Factor	Net Area (SF)
Steel-framed - Commercial	Plan A-1	Wall-1	Exterior	R-0	R-15 (< 0.04%)		U-0.056	14,000
	U-Factor Source: WSEC Appendix A Default			U-Factor Source Description: TABLE A103.3.6.1(1)				
	Framing Depth: 2x4			Other Framing Depth:				
	Framing Spacing (OC): 16" OC							
Slab-on-grade Floors	Location in Documents	Assembly ID	Assembly Location	Slab Edge	Under Slab		F-Factor	Perimeter Length (SF)
Unheated slab	Plan A-1	Slab-1	At grade level	R-10	R-0		F-0.54	900
	Slab Insulation Method: 2 ft vertical (from top of slab downward)			F-Factor Source:				
	F-Factor Source Description:							

Fenestration & Opaque Door Assemblies

Vertical Fenestration	Location in Documents	Assembly ID	Assembly Location	Insulation R-Values			Fenestration U-Factor	Rough Opening (SF)
				Shading (PF)	Fenestration SHGC			
Fixed - Class AW or site built	Plan A-1	Window-1	Exterior	PF < 0.2	SHGC-0.38		U-0.33	3,750
	U-Factor & SHGC Source: NFRC Rating			U-Factor Source Description:				
Glazed Doors	Location in Documents	Assembly ID	Assembly Location	Shading (PF)	Fenestration SHGC		Fenestration U-Factor	Rough Opening (SF)
Sliding entrance door	Plan A-1	Glazed Entry	Exterior	PF < 0.2	SHGC-0.33		U-0.60	250
	U-Factor & SHGC Source: NFRC Rating			U-Factor Source Description:				
	Is this a public entrance door?: Yes			Door enclosed within a vestibule?: Yes				
Skylights	Location in Documents	Assembly ID	Assembly Location			Fenestration SHGC	Fenestration U-Factor	Rough Opening (SF)
All types	Plan A-1	Skylight-1	Exterior			SHGC-0.35	U-0.50	1,000
	U-Factor & SHGC Source: NFRC Rating			U-Factor Source Description: Manufacturer				

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Report

U x A Calculation	NEW BUILDING - FULLY CONDITIONED				COMPLIES		
Opaque Envelope Assemblies		PROPOSED			TARGET		
Roof/Ceiling	Assembly ID	Roof/Ceiling Assembly U-Factor	Net Area (SF)	U x A	Roof/Ceiling Assembly U-Factor	Net Area (SF)	U x A
Insulation entirely above deck	Roof-1	0.027	49,000.0	1,323.0	0.027	49,000.0 (1)	1,323.0
Walls	Assembly ID	Wall Assembly U-factor	Net Area (SF)	U x A	Wall Assembly U-factor	Net Area (SF)	U x A
Steel-framed - Commercial	Wall-1	0.056	14,000.0	784.0	0.055	14,000.0 (1)	770.0
Slab on Grade Floors		PROPOSED			TARGET		
Slab-on-grade Floors	Assembly ID	F-Factor	Perimeter Length (LF)	U x A	F-Factor	Perimeter Length (LF)	U x A
Unheated slab	Slab-1	0.54	900.0	486.0	0.54	900.0 (1)	486.0
Fenestration Assemblies		PROPOSED			TARGET		
Vertical Fenestration	Assembly ID	Fenestration U-Factor	Assembly Rough Opening (SF)	U x A	Fenestration U-Factor	Assembly Rough Opening (SF)	U x A
Fixed - Class AW or site built	Window-1	0.33	3,750.0	1,237.5	0.34	3,750.0 (1)	1,275.0
Glazed Doors	Assembly ID	Glazed Door U-Factor	Assembly Rough Opening (SF)	U x A	Glazed Door U-Factor	Assembly Rough Opening (SF)	U x A
Sliding entrance door	Glazed Entry	0.60	250.0	150.0	0.60	250.0 (1)	150.0
Skylights	Assembly ID	Skylight U-Factor	Assembly Rough Opening (SF)	U x A	Skylight U-Factor	Assembly Rough Opening (SF)	U x A
All types	Skylight-1	0.50	1,000.0	500.0	0.50	1,000.0 (1)	500.0
Project Totals		Proposed Area		Proposed UxA	Target Area		Target UxA
		68,900		4,481	68,900		4,504

SHGC x A Calculation	NEW BUILDING - FULLY CONDITIONED				COMPLIES			
Fenestration Assemblies			PROPOSED			TARGET		
Glazed Doors	Assembly ID	PF	Glazed Door SHGC	Assembly Rough Opening (SF)	SHGC x A	Glazed Door SHGC	Assembly Rough Opening (SF)	SHGC x A
Sliding entrance door	Glazed Entry	PF < 0.2	0.33	250.0	82.5	0.33	250.0 (1)	82.5
Horizontal	Assembly ID	PF	Skylight SHGC	Assembly Rough Opening (SF)	SHGC x A	Skylight SHGC	Assembly Rough Opening (SF)	SHGC x A
Skylights	Skylight-1		0.35	1,000.0	350.0	0.35	1,000.0 (1)	350.0
Vertical Fenestration	Assembly ID	PF	Fenestration SHGC	Assembly Rough Opening (SF)	SHGC x A	Fenestration SHGC	Assembly Rough Opening (SF)	SHGC x A
Fixed - Class AW or site built	Window-1	PF < 0.2	0.38	3,750.0	1,425.0	0.38	3,750.0 (1)	1,425.0
Project Totals		Proposed Area		Proposed SHGC x A		Target Area		Target SHGC x A
		5,000		1,858		5,000		1,858

Component Performance Calculations Report

LIGHTING COMPLIANCE SUMMARY

2021 WSEC Compliance Forms for Commercial Buildings including Group R2, R3 & R4 over 3 stories and all R1

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Project & Applicant Information	Project Title	Sample Department Store - 2021 WSEC	For Building Department Use:	Date: Nov 30, 2025
	Project Address	1234 Main Street Shoreline, WA 98133		
	Applicant Name	Lisa Rosenow		
	Applicant Phone	360-539-5202		
	Applicant Email	lrosenow@evergreen-tech.net		

For questions about this report, contact WSEC Commercial Technical Support at 360-539-5300 or via email at com.techsupport@waenergycodes.com

General Occupancy	All Commercial	General Building Use Type		Retail, General Sales Warehouse, General Storage	Building Cond. Floor Area	50,000
General Project Types	New Building	New Building or Addition Lighting Scope	Interior Lighting Exterior Lighting	Alteration Lighting Scope	Project Cond. Floor Area	50,000
					Floors Above Grade	1
					Compliance Method	General Prescriptive Fossil Fuel Heating
Lighting Project Description						

Lighting Compliance Scope and Method	Project Type	Interior / Exterior (Interior includes both interior & parking)	Luminaire Replacement Scope	Compliance Method	LPA Calculation Adjustment	Compliance Verification
	New Building	Interior Lighting		Space by space	Reduced lighting power density option - 10%	COMPLIES
	New Building	Exterior Lighting			Not applicable to exterior	COMPLIES
Additional Energy Efficiency (AEC) Measures Included	Reduced lighting power density - 10% lower than LPA Enhanced digital lighting controls		Load Management (LDM) Measures Included		No lighting or electrical load management measures included in project	

Lighting Power Calculation	NEW BUILDING - INTERIOR LIGHTING			Compliance Verification	COMPLIES
Compliance Method	Space by space		LPA Calculation Adjustment	LPA x 0.9	

Interior Lighting Power Allowance - Space by Space						
General Space Type	Specific Space Type	Gross Interior Area (SF)	LPA (Watts/SF)	Total Watts Allowed (SF x LPA x 0.9)	Total Proposed Watts (LPD + Display LPD)	Compliance Status
Retail	General sales	20,000	1.05	21,000		
Retail	Sales display - Furniture/clothing/cosmetics/art	15,000	1.05	15,750	10,000	
Warehouse/storage area	Medium to bulky palletized items	5,000	0.33	1,650		
Retail Display Extra Allowance				500		
Proposed Total LPD					17,000	
Totals		Calculation Adjustment Applied - LPA x 0.9		29,835	27,000	COMPLIES

Proposed Lighting Power Density						
Fixture Type	Fixture ID	Quantity of Fixtures (#F)	Watts or Wattage Limit per Fixture (WpF)	Total Linear Feet (LF)	Watts per Linear Foot (WpLF)	Total Watts Proposed (#F x WpF) or (LF x WpLF)
Individual Fixtures						
Direct / indirect pendant	Fixture-1	375	32			12,000
Recessed downlight	Fixture-2	200	25			5,000
Proposed Total LPD						17,000

Proposed Additional Allowance Lighting (Display/Highlight/Ornamental)							
Fixture Type	Fixture ID	General and Specific Space Type	Quantity of Fixtures (#F)	Watts or Wattage Limit per Fixture (WpF)	Total Linear Feet (LF)	Watts per Linear Foot (WpLF)	Total Watts Proposed (#F x WpF) or (LF x WpLF)
Linear Fixtures							
Line voltage track (120V)	Display Track-1	Retail - Sales display - Furniture/clothing/cosmetics/art	200	50			10,000

Proposed Fixtures Details	NEW BUILDING - INTERIOR LIGHTING					
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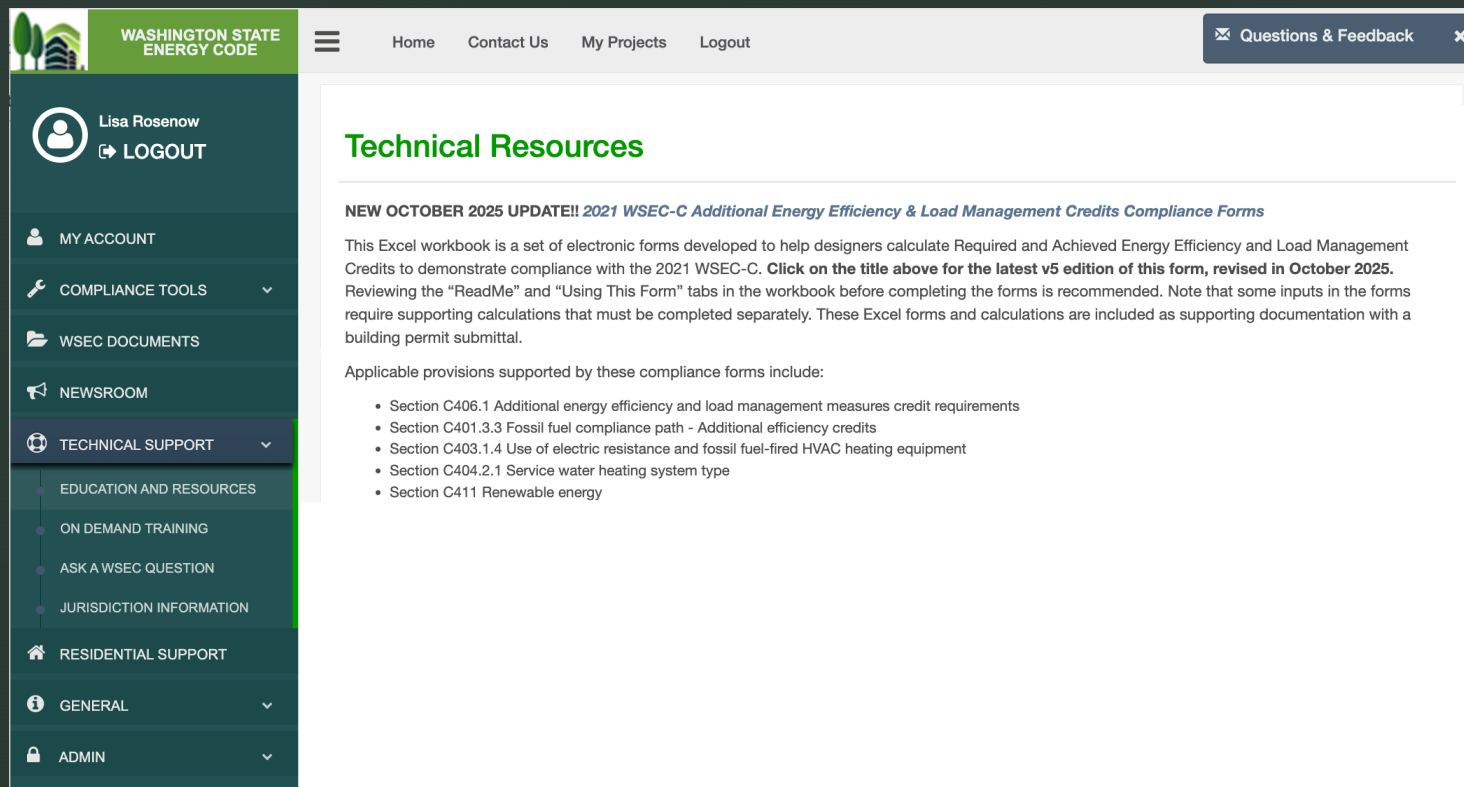
MECHANICAL COMPLIANCE SUMMARY										
2021 WSEC Compliance Forms for Commercial Buildings including Group R2, R3 & R4 over 3 stories and all R1										
Administered by: ©2025 NEEA, All rights reserved										
Project & Applicant Information	Project Title		Sample Department Store - 2021 WSEC			For Building Department Use:			Date: Nov 30, 2025	
	Project Address		1234 Main Street Shoreline, WA 98133							
	Applicant Name		Lisa Rosenow							
	Applicant Phone		360-539-5202							
	Applicant Email		lrosenow@evergreen-tech.net							
For questions about this report, contact WSEC Commercial Technical Support at 360-539-5300 or via email at com.techsupport@waenergycodes.com										
General Occupancy		All Commercial		General Building Use Type		Retail, General Sales Warehouse, General Storage		Building Cond. Floor Area		50,000
General Project Types	New Building	New Building or Addition Mechanical Scope	Central Plant Systems Single Zone Systems & Equipment		Alteration Mechanical Scope			Project Cond. Floor Area		50,000
								Floors Above Grade		1
								Compliance Method		General Prescriptive Fossil Fuel Heating
Mechanical Project Description										
Mechanical Compliance Scope and Method	Project Type		Mechanical Scope		Economizer Exception(s) Applied?		DOAS Ventilation Provided?		Higher Equipment Efficiency Option Applied?	
	Building Addition		Central Plant Systems		Yes		NA		NA	
	New Building		Single Zone Systems & Equipment		Yes		Yes		NA	
Additional Energy Efficiency (AEC) Measures Included		HVAC TSPR score 5% better than code minimum		Load Management (LDM) Measures Included		HVAC load management				
Additional Efficiency Credits Included (AEC)										
Does building include occupancy classifications requiring DOAS?		Yes		Does project include DOAS equipment?		Yes				
Based on project scope do TSPR requirements apply?		Yes		Do all systems comply with Appendix D standard reference design or qualify for an exception to TSPR?		Yes				
Scope & Space Conditioning		NEW CONSTRUCTION - CENTRAL PLANT SYSTEMS					Compliance Verification		COMPLIES	
VRF Multi-Split Systems Category - Heat pump outdoor unit, applied (water or ground loop, groundwater)										
Cooling Equipment Efficiency Information										
System ID	Cooling System Type	Specific Type	Cooling Capacity (Btu/h)	AEC Efficiency Multiplier	Econo Exception Multiplier (FL & PL)	Combined Efficiency Multiplier (AEC & Econo)	Proposed Cooling Efficiency	CE Units	Proposed Part Load Efficiency	PL Units
VRF-1	VRF air-cooled HP	Heat pump	72,000	1	1	1	13.0	EER	20.0	IEER
Heating Equipment Efficiency Information										
System ID	Heating System Type	Specific Type	Heating Capacity (Btu/h)	Cooling Capacity (Btu/h) (Same as Cooling Table)	AEC Efficiency Multiplier	Proposed Heating Efficiency	HE Units	Efficiency Compliance Verification		
VRF-1	VRF air-cooled HP, heating	Heat pump	72,000.0	72,000	1	5.0	COP	COMPLIES		
Equipment Details										
System ID	Location in Documents - Plan/Detail #		Quantity of Fan Coil Units in VRF System							
VRF-1	M-1		3							
Economizer Compliance Method: Applying air-side economizer exception					Air-side economizer exception applied?: Exp 1 - DOAS paired with cooling system (Note equip location limitations)					
WSEC Equipment Efficiency Reference Table: Table C403.3.2(9) VRF Air-to-Air & Water Source Heat Pumps										

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Scope & Space Conditioning				NEW BUILDING - SINGLE ZONE SYSTEMS & EQUIPMENT				Compliance Verification			COMPLIES
Single Zone Air Systems Category - Fan coil unit, hydronic & VRF											
Air Systems Summary Information											
System/Equip ID	Quantity of Items	Supply Airflow Control	Ventilation Standard	Ventilation CFM (Total if Multiple Items)		Ventilation Air Source	Paired with DOAS	Ventilation energy recovery		Energy Recovery Efficiency (%)	
VRF FC-1-3	3	Variable air volume	IMC Ventilation	0		Separate DOAS	DOAS-3				
Air Systems & Equipment - Cooling											
System/Equip ID	Cooling System/Equip Type		Specific Type	Cooling Capacity per item (Btu/h)	Econo Full Load Multiplier (Full/IPLV)	Required Cooling Efficiency (Code Min & Econo)		Proposed Cooling Efficiency	CE Units	Efficiency Compliance Verification	
VRF FC-1-3	Fan coils, hydronic & VRF, cooling		VRF	72,000						COMPLIES	
Air Systems & Equipment - Heating											
System /Equip ID	Heating System/Equip Type	Specific Type	Heat Pump Heating Capacity (Btu/h)	Cooling Capacity (Btu/h)	AEC Efficiency Multiplier	Proposed Heat Pump Heating Efficiency	HPH Units	Proposed Low OSA Temp Efficiency	LTH Units	Efficiency Compliance Verification	
VRF FC-1-3	Fan coils, hydronic & VRF, heating	VRF			1					COMPLIES	
Air Systems & Equipment Details											
System/Equip ID		Discrete Area(s) Served		Location In Project Documents - Plan/Detail #				System/Equip Compliance Path			
VRF FC-1-3		Offices & Employee Lounge		M-1				General Prescriptive			
		System/Equip ID for a single or multiple items?: Multiple items w/ identical heating & cooling capacity									
		Cooling Capacity Source: VRF-1									
		Heating Capacity Source: VRF-1									
Single Zone Air Systems Category - Heat pump, split & single package, SC, SDHV											
Air Systems Summary Information											
System/Equip ID	Quantity of Items	Supply Airflow Control	Ventilation Standard	Ventilation CFM (Total if Multiple Items)		Ventilation Air Source	Paired with DOAS	Ventilation energy recovery		Energy Recovery Efficiency (%)	
HP-1	1	Variable air volume	IMC Ventilation			Separate DOAS	DOAS-1	Not provided, not required			
HP-2	1	Variable air volume	IMC Ventilation			Separate DOAS	DOAS-2	Not provided, not required			
HP-3	1	Variable air volume	IMC Ventilation	0		Separate DOAS	DOAS-2	Not provided, not required			
Air Systems & Equipment - Cooling											
System/Equip ID	Cooling System/Equip Type		Specific Type	Cooling Capacity per item (Btu/h)	Econo Full Load Multiplier (Full/IPLV)	Required Cooling Efficiency (Code Min & Econo)		Proposed Cooling Efficiency	CE Units	Efficiency Compliance Verification	
HP-1	Heat pump, air cooled		Single package	120,000	0	11.0		16.0	EER	COMPLIES	
HP-2	Heat pump, air cooled		Single package	60,000	0	13.4		15.0	SEER2	COMPLIES	
HP-3	Heat pump, air cooled		Single package	60,000	0	13.4		15.0	SEER2	COMPLIES	
Air Systems & Equipment - Heating											
System /Equip ID	Heating System/Equip Type	Specific Type	Heat Pump Heating Capacity (Btu/h)	Cooling Capacity (Btu/h)	AEC Efficiency Multiplier	Proposed Heat Pump Heating Efficiency	HPH Units	Proposed Low OSA Temp Efficiency	LTH Units	Efficiency Compliance Verification	
HP-1	Heat pump, air cooled, heating	Single package	135,000	120,000	1	4.1	COP	2.5	COP	COMPLIES	
HP-2	Heat pump, air cooled, heating	Single package	65,000	60,000	1	7.2	HSPF2		COP	COMPLIES	
HP-3	Heat pump, air cooled, heating	Single package	65,000	60,000	1	7.2	HSPF2		COP	COMPLIES	
Air Systems & Equipment Details											
System/Equip ID		Discrete Area(s) Served		Location In Project Documents - Plan/Detail #				System/Equip Compliance Path			

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Additional Energy Efficiency and Load Management Measures



The screenshot displays the Washington State Energy Code website. The header includes the logo, navigation links (Home, Contact Us, My Projects, Logout), and a Questions & Feedback button. The left sidebar shows the user profile (Lisa Rosenow) and a menu with categories like MY ACCOUNT, COMPLIANCE TOOLS, WSEC DOCUMENTS, NEWSROOM, TECHNICAL SUPPORT (selected), EDUCATION AND RESOURCES, ON DEMAND TRAINING, ASK A WSEC QUESTION, JURISDICTION INFORMATION, RESIDENTIAL SUPPORT, GENERAL, and ADMIN. The main content area is titled "Technical Resources" and features a "NEW OCTOBER 2025 UPDATE!! 2021 WSEC-C Additional Energy Efficiency & Load Management Credits Compliance Forms" announcement. The text explains that the Excel workbook is for calculating Required and Achieved Energy Efficiency and Load Management Credits, with a note to click on the title for the latest v5 edition revised in October 2025. It also lists applicable provisions supported by the forms: Section C406.1, Section C401.3.3, Section C403.1.4, Section C404.2.1, and Section C411.

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Technical Resources

NEW OCTOBER 2025 UPDATE!! 2021 WSEC-C Additional Energy Efficiency & Load Management Credits Compliance Forms

This Excel workbook is a set of electronic forms developed to help designers calculate Required and Achieved Energy Efficiency and Load Management Credits to demonstrate compliance with the 2021 WSEC-C. **Click on the title above for the latest v5 edition of this form, revised in October 2025.** Reviewing the "ReadMe" and "Using This Form" tabs in the workbook before completing the forms is recommended. Note that some inputs in the forms require supporting calculations that must be completed separately. These Excel forms and calculations are included as supporting documentation with a building permit submittal.

Applicable provisions supported by these compliance forms include:

- Section C406.1 Additional energy efficiency and load management measures credit requirements
- Section C401.3.3 Fossil fuel compliance path - Additional efficiency credits
- Section C403.1.4 Use of electric resistance and fossil fuel-fired HVAC heating equipment
- Section C404.2.1 Service water heating system type
- Section C411 Renewable energy

C406, C411 Summary**C406-C411-SUM**

2021 Washington State Energy Code Compliance Forms for Commercial Buildings as defined in Chapter 2

Revised Oct 2025

Project Info

Project Title:	Sample Department Store	Date	12/3/25
Applicant Information. Provide contact information for individual who can respond to inquiries about compliance form information provided.		For Building Dept. Use	
Company Name:	WSEC Webtool Technical Support		
Company Address:			
Applicant Name:	Lisa Rosenow		
Applicant Phone:	360.539.5300		
Applicant Email:	com.techsupport@waenergycodes.com		

Project Type & Area

Select one construction type per form. For projects that include multiple construction types, separate forms must be completed.

Project Type	New Construction
Project Floor Area	55,000
Project Conditioned Floor Area	55,000

Space and Water Heating Fuel

Space heating must be provided by equipment complying with C403.1.4 or C401.3.3. Service hot water must be provided by equipment complying with C404.2.1 or C401.3. Compliance with C401.3 requires that additional C406.2 energy efficiency credits be achieved.

Is any space heat in the project area provided by equipment that does not comply with C403.1.4?	No
Is any service hot water used in the project provided by equipment that do not comply with C404.2.1?	No

Grocery Details

It is permitted to apply grocery heat recovery for C406.2.6.2 credit when the grocery area is over 10,000sf and it is not required to comply with C403.9.2.3.

Remotely located refrigeration condenser heat rejection capacity (kBtu/h)	
Does the facility have food service, meat or deli departments?	
Is refrigeration condenser heat recovery required?	
Is condenser heat recovery to Service Water heat required or used to comply with C403.9.2.3?	

C411 Summary

Values in this section are auto-filled from the RE-CALC worksheet and are write-protected. RE-CALC is required for all new construction, addition, change of conditioning, and change of use projects with conditioned floor area larger than 10000sf.

C411.1 Compliance	COMPLIES
On-site Renewable Capacity (kW)	27.50
On-site Renewable Capacity (W/CFA)	0.50
Applicable C411.1 Exception	None
Extra C406 Energy Credits Required for C411 Compliance	

C406 Summary

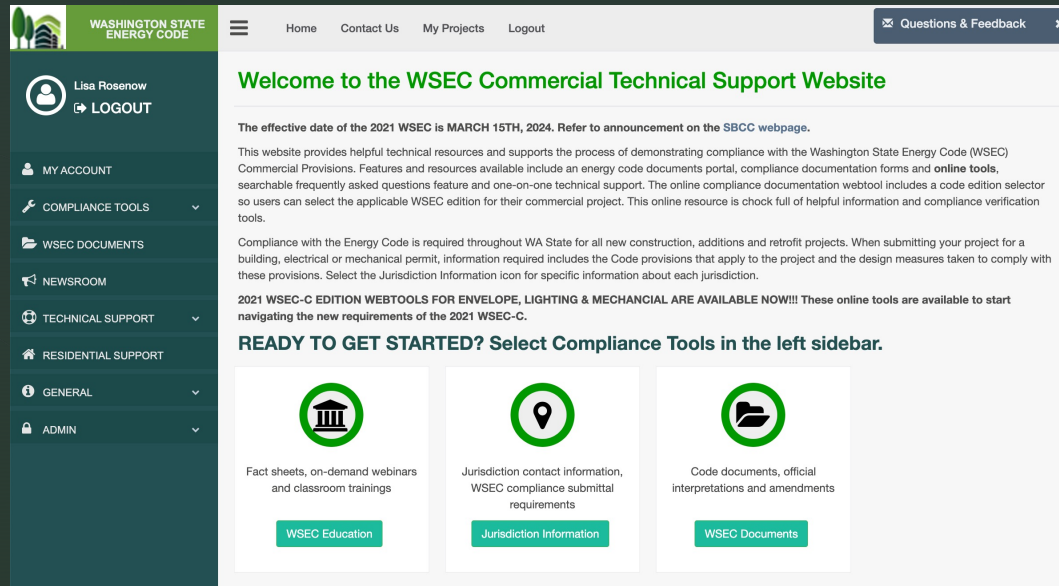
Compliance results indicate whether the proposed number of credits complies with C406 required number of credits including additional credits required by C401.3.3 and C411.

C406.2 Additional Energy Efficiency Measure Credit Compliance	COMPLIES
C406.3 Load Management Measure Credit Compliance	COMPLIES

Summary of
Compliance
Status for C406
and C411
Requirements

Area ID NOTE 5	Floor Area	Measure	Input for Calculated Credits (if applicable) ^{NOTE 6}		Base Credits	Earned Credits
			Input Description	User Input		
Retail	50000	4. Electric energy storage	Storage Cap Wh/sf	2.2	37	16.2

WSEC Commercial Technical Support



- Telephone hot line – **360-539-5300**
- Online form – **<https://www.waenergycodes.com>**
- Email inquiries – **com.techsupport@waenergycodes.com**

How to use the 2021 WSEC-C Compliance Documentation Webtool



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