



Decoding NRCC

Comply With Me

***Let's Talk 2019
Nonresidential
Dynamic Forms***

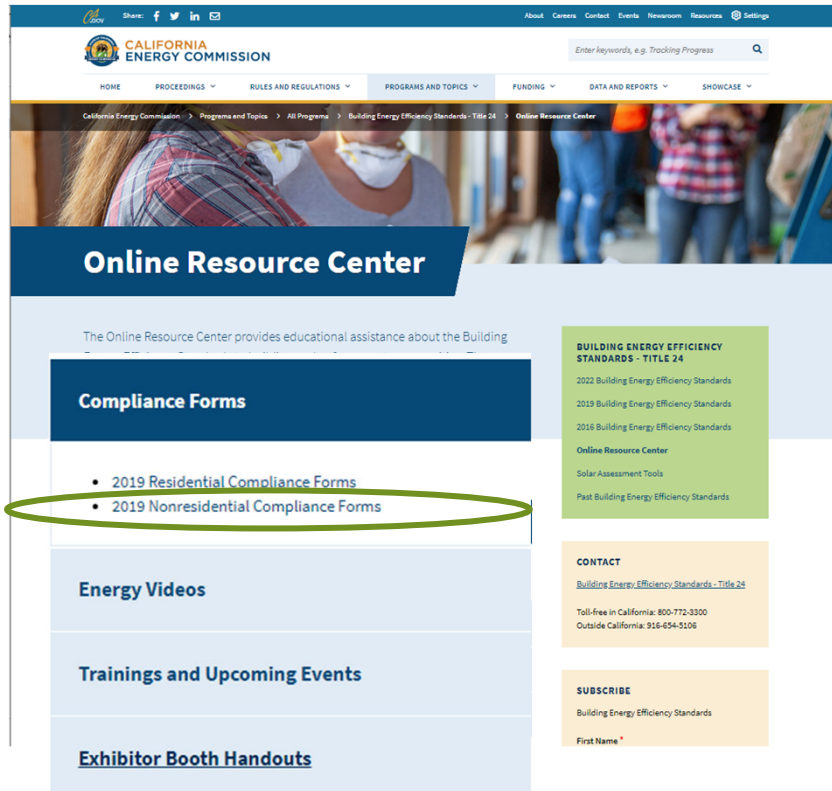


HELPING YOU PLAY YOUR CARDS RIGHT

1



2



3

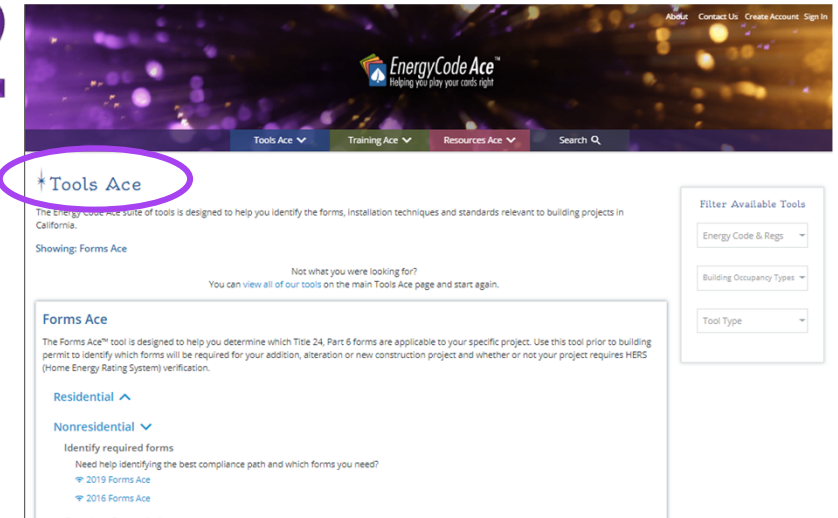
Name	Last modified <small>Color dates added today</small>	Size
NRCA	Oct 24, 2019	4 kb
NRCC	Nov 26, 2019	4 kb
NRCI	Nov 28, 2018	4 kb
NRCV	Nov 30, 2018	4 kb

Where Are the NRCC Forms?

1



2



Complete Forms Online

Want our virtual assistant to help you complete your forms and verify compliance?

3




2019 NRCC Forms Start or edit the 2019 Nonresidential Certificate of Compliance (NRCC) forms for your Commissioning, Domestic Water Heating, Electrical Power Distribution, Outdoor Lighting, Sign Lighting and Solar Ready Project.


Download Forms

Know which nonresidential Prescriptive or Mandatory project form you need and need less help with completion?

2019 NRCC Dynamic Forms

- ✚ Commissioning
- ✚ Lighting - Outdoor
- ✚ Domestic Water Heating
- ✚ Lighting - Sign
- ✚ Electrical Power Distribution
- ✚ Mechanical
- ✚ Envelope
- ✚ Process Systems
- ✚ Lighting - Indoor
- ✚ Solar Ready

Action	Tip
Accessing the Form(s) <ul style="list-style-type: none"> Download dynamic PDF frequently for latest version. 	Energy Commission (free): https://ww2.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCC/ Energy Code Ace (free): https://energycodeace.com/content/tools-ace/tool=forms-ace Energy Pro (must purchase software): http://www.energysoft.com/shop/ <i>If using Energy Pro, be sure you have the latest version</i>
Opening the Dynamic Form	If you see the error "Please Wait...": <ol style="list-style-type: none"> Download the form and save to location on your computer Open it from there using Adobe Reader (2017 free version seems to work best) <i>There are known issues when using PDF software other than Adobe Reader (such as Bluebeam, Adobe Acrobat DC and many others)</i>
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Table C says "DOES NOT COMPLY"	<ol style="list-style-type: none"> In Table C, look for "No" columns, and then review the table connected to the "no" and verify inputs are compliant Table D may also provide some direction on which table needs additional information to be considered complete <i>Confirm you have filled out ALL editable cells</i>
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Mandatory Measures

NRCC-PRC-E: Covered Process

- Refrigerated Spaces <3,000 ft² / Refrigerated Spaces ≥3,000 ft²
 - Food Stores >8,000 ft²
 - Enclosed Parking Garage
- Newly Installed Process Boilers (input ≥25 MMBtu/h)
 - Compressed Air Systems (combined HP ≥25)
 - Elevators (lighting and ventilation controls)
- Escalator & Moving Walkways (airports, hotels, transportation function areas)

NRCC-CXR-E: Design Review/Commissioning
Nonresidential Occupancies Only


- <10,000 ft²: Design Review
- ≥10,000 ft²: Design Review + Cx requirements

NRCC-SRA-E: Solar Ready

- Nonresidential ≤3 habitable stories
- Multifamily/Hotel/Motel ≤10 habitable stories

NRCC-ELC-E: Electrical Power Distribution

- Service meters, separation of load, voltage drop, circuit controls



Prescriptive Approach

Can alternatively use the Performance Approach

NRCC-ENV-E: Envelope

- Conditioned spaces

NRCC-MCH-E: Mechanical

- Heating, ventilation and air conditioning

NRCC-PLB-E: Plumbing


- Service and domestic hot water heating

NRCC-SRA-E: Solar Thermal

- Solar thermal for multifamily/hotel/motel

NRCC-LTI-E: Indoor Lighting


- In conditioned spaces



Performance Approach

Can alternatively use the Prescriptive Approach

NRCC-PRF-01-E (via approved software):
 Envelope, and/or indoor lighting and/or mechanical and/or plumbing and/or solar thermal (multifamily/hotel/motel)



Prescriptive Measures

CANNOT use the Performance Approach

NRCC-LTI-E: Indoor Lighting

- In unconditioned spaces

NRCC-LTS-E: Sign Lighting

- Indoor and outdoor illuminated signs

NRCC-LTO-E: Outdoor Lighting

- Illuminated outdoor spaces

NRCC-PRC-E: Covered Process

- Computer Rooms >20 W/ft² Power Density
- Commercial Kitchen Ventilation/Exhaust
- Laboratory Exhaust/Factory Exhaust & Fume Hood

B. PROJECT SCOPE ?

Table Instructions: Include any mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.

My project consists of (check all that apply)

01	02	03
Air System(s)	Wet System Components	Dry System Components
<input type="checkbox"/> Heating Air System Furnace/Unit Heater	<input type="checkbox"/> Water Economizer Water-Side	<input type="checkbox"/> Air Economizer
<input type="checkbox"/> Cooling Air System Air Conditioning	<input type="checkbox"/> Pumps Chilled/heating/tertiary/condenser	<input type="checkbox"/> Electric Resistance Heat Per exceptions of 140.4(g)
Mechanical Controls	<input type="checkbox"/> Hydronic System Piping Heating/cooling	<input type="checkbox"/> Fan Systems Supply/return/exhaust/transfer/VAV
<input type="checkbox"/> Mechanical Controls Thermostat, Shut-off, Isolation, Demand Response, Supply Air Temp. Reset, Window Interlocks	<input type="checkbox"/> Cooling Towers	<input type="checkbox"/> Ductwork Pipe insulation, HERS duct testing
	<input type="checkbox"/> Chillers Air/water cooled, absorption	<input type="checkbox"/> Ventilation Outside/transfer air, filter, DCV, Occ
	<input type="checkbox"/> Boilers Gas/Oil Fired, steam	<input type="checkbox"/> Zonal Systems/ Terminal Boxes VAV box



Use for air sourced heating and/or cooling components

- ✦ Split DX / Mini-Split DX
- ✦ Packaged DX
- ✦ Variable Air Volume (VAV)
- ✦ Variable Refrigerant Flow (VRF)
- ✦ Packaged Terminal Units (PTAC/PTHP)
- ✦ Single Packaged Vertical Units (SPVAC/SPVHP)
- ✦ Tempered Dedicated Outside Air Systems (DOAS)



Use for built-up hydronic components

- ✦ Packaged DX with hot water heating (boiler)
- ✦ VAV with hydronic heating (boiler) and/or hydronic cooling (chiller/cooling tower)
- ✦ Two or Four pipe fan coil with boiler and/or chiller/cooling tower
- ✦ Hydronic heating (boiler)
- ✦ Chilled Beam (chiller/cooling tower)



Use for distribution, airside and electric resistance components

- ✦ Air Economizer for split and packaged DX, VAV, etc.
- ✦ Supply, return and exhaust air fans including VAV boxes, VRF indoor units and fan coil units
- ✦ Components used serving minimum ventilation outside air requirements
- ✦ Pipe insulation and HERS duct testing requirements

NRCC-MCH-E: Table F

Heating/Cooling Systems

Unitary AC / Condensers	Unitary Heat Pumps	PTAC/PTHP	SPVAC/SPVHP	Variable Refrigerant Flow
<ul style="list-style-type: none"> AC, water/evaporatively cooled Condensing units (air/water/evaporatively) AC-air cooled (split/package, 1/3 phase, space constrained, small duct/high velocity) 	<ul style="list-style-type: none"> Air cooled (split/package, 1/3 phase, space constrained) Water/ groundwater/ ground source Air cooled gas-engine heat pump 	<ul style="list-style-type: none"> Newly constructed Newly conditioned Replacements 	<ul style="list-style-type: none"> Weatherized Nonweatherized Nonweatherized space constrained 	<ul style="list-style-type: none"> Air cooled AC/heat pump Water source Ground/groundwater source
<p>Used for:</p> <ul style="list-style-type: none"> Split and packaged DX VAV (air side) Single zone air conditioner Dual/double duct AC/condensing units 	<p>Used for:</p> <ul style="list-style-type: none"> Split and packaged DX (single or 3 phase) VAV (air side) Single zone heat pump Dual/double duct Hydronic heat pump 	<p>Used for:</p> <ul style="list-style-type: none"> Room packaged terminal air conditioner Room packaged terminal heat pump 	<p>Used for:</p> <ul style="list-style-type: none"> Single package vertical AC unit Single package vertical heat pump unit 	<p>Used for:</p> <ul style="list-style-type: none"> VRF, VRV
<p>Efficiencies:</p> <p>Title 24 P6: Table 110.2-A Title 20: Table C-3</p>	<p>Efficiencies:</p> <p>Title 24 P6: Table 110.2-B Title 20: Table C-3/4</p>	<p>Efficiencies:</p> <p>Title 24 P6: Table 110.2-E</p>	<p>Efficiencies:</p> <p>Title 24 P6: Table 110.2-E Title 20: Table C-6</p>	<p>Efficiencies:</p> <p>Title 24 P6: Table 110.2-H / 110.2-I</p>
Furnace/Unit Heater	Computer Room AC	Small Commercial AC	Furnace + AC	Room AC/HP
<ul style="list-style-type: none"> Warm-air central/duct/unit gas-fired heaters Weatherized/Nonweatherized central 1 phase furnace Wall fan/gravity furnace Floor furnace/room heater 	<ul style="list-style-type: none"> Air-cooled downflow/upflow Water-cooled downflow/upflow Water-cooled w/economizer Glycol-cooled downflow/upflow Glycol-cooled w/economizer 	<ul style="list-style-type: none"> Air-cooled unitary, 3 phase, AC/HP split DX (heating and cooling) Air-cooled unitary, 3 phase, AC/HP packaged DX (heating and cooling) 	<ul style="list-style-type: none"> Air-cooled AC, 1 phase, AC/Furnace weatherized / nonweatherized split DX Air-cooled AC, 1 phase, AC/Furnace weatherized / nonweatherized packaged DX 	<ul style="list-style-type: none"> AC/HP Louvered/non-louvered sides AC/HP Casement, casement & slider
<p>Used for:</p> <ul style="list-style-type: none"> Air handler Forced air unit Furnace Space heater 	<p>Used for:</p> <ul style="list-style-type: none"> Computer room air conditioner Computer room unit 	<p>ONLY used for:</p> <ul style="list-style-type: none"> Small commercial AC and heating equipment <ul style="list-style-type: none"> Split Packaged 	<p>Used for:</p> <ul style="list-style-type: none"> Split DX using AC and gas fired furnace Packaged DX using AC and gas fired furnace 	<p>Used for:</p> <ul style="list-style-type: none"> Room AC Room heat pump
<p>Efficiencies:</p> <p>Title 24 P6: Table 110.2-J Title 20: E-2/6</p>	<p>Efficiencies:</p> <p>Title 20: Table C-7</p>	<p>Efficiencies:</p> <p>Title 20: Table C-4</p>	<p>Efficiencies:</p> <p>Title 24 P6: Table 110.2-A/J Title 20: Table C-3/E-6</p>	<p>Efficiencies:</p> <p>Title 20: Table B-2</p>

B. PROJECT SCOPE			
Table Instructions: <u>Include any building envelopes that are within the scope of the permit application and are demonstrating compliance using the prescriptive paths outlined in §140.3, and §141.0(a)1 and §141.0(b)1 and 2 for additions and alterations.</u>			
My project consists of (check all that apply)		Component Types	
01		02	
<input type="checkbox"/> New Construction or Newly Conditioned Space	<input type="checkbox"/> Roof	<input type="checkbox"/> Walls	<input type="checkbox"/> Exterior Doors
<input type="checkbox"/> One or more enclosed spaces > 5,000 ft ² directly under roof with ceiling height > 15ft		<input type="checkbox"/> Floors	<input type="checkbox"/> Fenestration/Glazed Door ¹
<input type="checkbox"/> Addition of conditioned space	<input type="checkbox"/> Roof	<input type="checkbox"/> Walls	<input type="checkbox"/> Exterior Doors
<input type="checkbox"/> One or more enclosed spaces > 5,000 ft ² directly under roof with ceiling height > 15ft		<input type="checkbox"/> Floors	<input type="checkbox"/> Fenestration/Glazed Door ¹
<input type="checkbox"/> Alteration of conditioned space	<input type="checkbox"/> Roof Assembly	<input type="checkbox"/> Walls	Exterior Doors NA for Alts.
<input type="checkbox"/> One or more enclosed spaces > 5,000 ft ² directly under roof with ceiling height > 15ft and lighting systems installed for the first time	<input type="checkbox"/> Roofing Material	<input type="checkbox"/> Floors	<input type="checkbox"/> Fenestration

¹ FOOTNOTE: Doors that have more than one-half glass in area are considered Glazed Doors and should be documented on Table K with fenestration.

Pick all features that apply

- Example: New free standing 2 story conditioned building
 - Roof + Walls + Floors + Exterior Doors + Fenestration

Pick all features that apply

- Example: Adding second floor to existing building:
 - Roof + Walls + Fenestration
- Example: Adding 2 story addition and replacing windows in existing conditioned building:
 - Roof + Walls + Floors + Fenestration + alteration feature "fenestration"

Pick all features that apply

- Example: Reroof:
 - Roof Assembly + Roofing Material
- Example: Openings walls and replacing windows:
 - Walls + Fenestration





Recording For Future Use



 **Decoding** * 2019 Title 24, Part 6™

Let's Talk What's New

 **Decoding** * 2019 Title 24, Part 6™

Let's Talk Healthcare Facilities

**This session is
being recorded.**

Last Decoding Talk...

 **Decoding** * **EnergyPro**™

Let's Talk Updates for 2019 Code – Nonresidential

Comply With Me

Learn how to comply with California's building and appliance energy efficiency standards

www.EnergyCodeAce.com

offers **No-Cost**

Tools ♠ Training ♠ Resources
to help you decode Title 24, Part 6 and Title 20



This program is funded by California utility customers and administered by Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E®), Southern California Edison Company (SCE), and Southern California Gas Company (SoCalGas®) under the auspices of the California Public Utilities Commission.





Who Are We?



Gina Rodda
Gabel Energy
gina@gabelenergy.com



BUILDING ENERGY ANALYSIS +
ENERGY CODE COMPLIANCE

Host: Gina Rodda

Gina Rodda, our host for the Decoding Talk series, is a Certified Energy Analyst (CEA) through CABEC, and LEED Accredited Professional (AP).

She is involved in providing residential and non-residential energy calculations for a variety of building types throughout California; an instructor of full day trainings; subject matter expert supporting future code development; aids the improvement to tools and resources supporting energy compliance through the private utility programs and the Energy Commission.

Gina has been in the energy modeling field since 1991.



Who Are We?



Sally Blair
NORESKO
sblair@noresko.com



Co-Host: Sally Blair

Sally Blair is a Program Director at NORESKO.

She is focused on transforming the built environment to an energy efficient and sustainable model & is currently focused on supporting California's decarbonization energy code goals.

She is currently supporting SCE, SDG&E, SoCal Gas and PG&E on code compliance improvement projects under the auspices of the CPUC and in support of CEC.

She holds a BS in mechanical engineering, and an MBA



Decoding What's New



- ✦ Tips & tricks
- ✦ The overarching structure behind the forms including how best to use the forms
- ✦ How a new construction or alteration project scope will determine how the form adapts to support the code requirements and dictate which inputs are required to document compliance
- ✦ Where to go for more guidance via Energy Code Ace, Energy Commission, or Energy Soft (if Energy Pro used to complete these NRCC forms)



Agenda

Agenda for Today Approx. Length

✦ Welcome..... 10 minutes

✦ Why?!..... 15 minutes

✦ Let's Talk

✧ *Challenge A:* 25 minutes

✧ *Challenge B:* 20 minutes

✧ *Challenge C:* 25 minutes

✧ *Challenge D:* 15 minutes

✦ Next Steps..... 5 minutes

✦ Wrap Up..... 5 minutes



Why?



HELPING YOU PLAY YOUR CARDS RIGHT



Which Code Year Applies? Apply for permit...

Jan. 2020- Dec. 2022

2019

**BUILDING ENERGY EFFICIENCY
STANDARDS FOR RESIDENTIAL
AND NONRESIDENTIAL
BUILDINGS**

FOR THE 2019 BUILDING
ENERGY EFFICIENCY
STANDARDS

TITLE 24, PART 6, AND ASSOCIATED
ADMINISTRATIVE REGULATIONS
IN PART 1.



DECEMBER 2019
CEC-400-2018-020-CMF
CALIFORNIA ENERGY COMMISSION
Edmund G. Brown Jr., Governor



Helps you navigate the Standards using key word search capabilities, hyperlinked tables and related sections

Search...

2019 Building Energy Efficiency Standards - Reference Ace v16

2019 BUILDING ENERGY EFFICIENCY STAN...
REFERENCE APPENDICES
RESIDENTIAL COMPLIANCE MANUAL
NONRESIDENTIAL COMPLIANCE MANUAL

2019 Building Energy Efficiency Standards Reference Ace Tool

[ReadMe](#)

**2019
REFERENCE
APPENDICES**

FOR THE 2019 BUILDING ENERGY EFFICIENCY STANDARDS
TITLE 24, PART 6, AND ASSOCIATED ADMINISTRATIVE REGULATIONS IN PART 1

DECEMBER 2018
CEC-400-2018-020-CMF
CALIFORNIA ENERGY COMMISSION
Edmund G. Brown, Jr., Governor

DECEMBER 2018
CEC-400-2018-019-CMF
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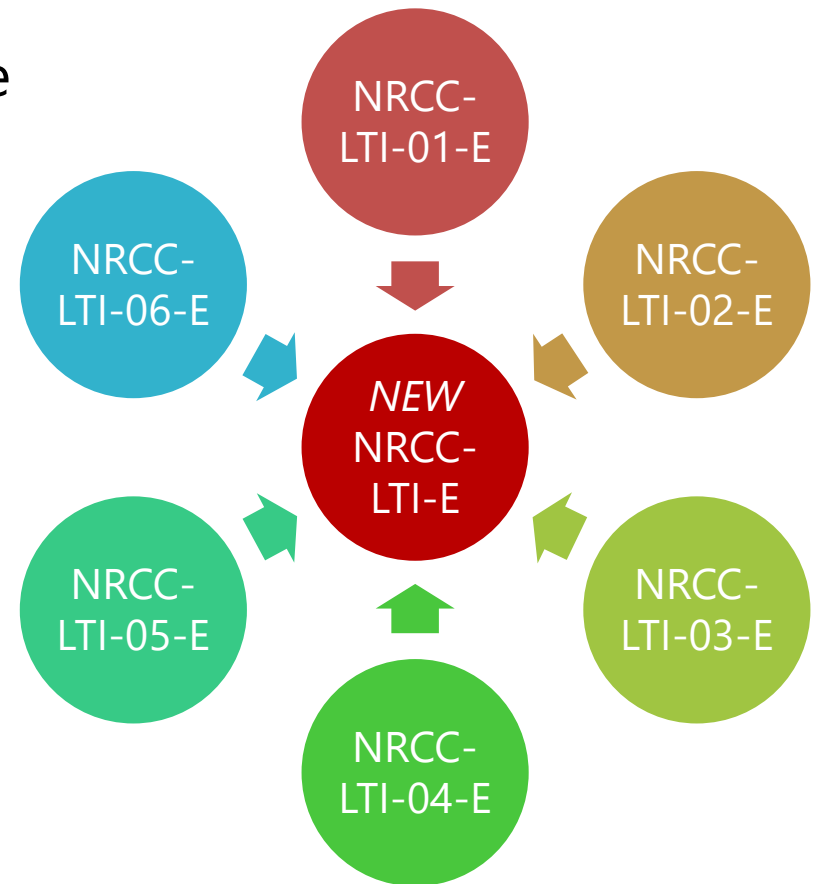
Contents Favorites





Why?

- ✧ Reduce number of pages
- ✧ Make it obvious which form to use
- ✧ Eliminate redundant signature pages
- ✧ Verify compliance before permit application
- ✧ Compliance "guidance" features throughout
- ✧ Identify NRCI/NRCA/NRCV for contractors and inspectors





Mandatory & Prescriptive NRCCs

Certificate of Compliance

LTI

LTO

LTS

ELC

SRA

MCH

PLB

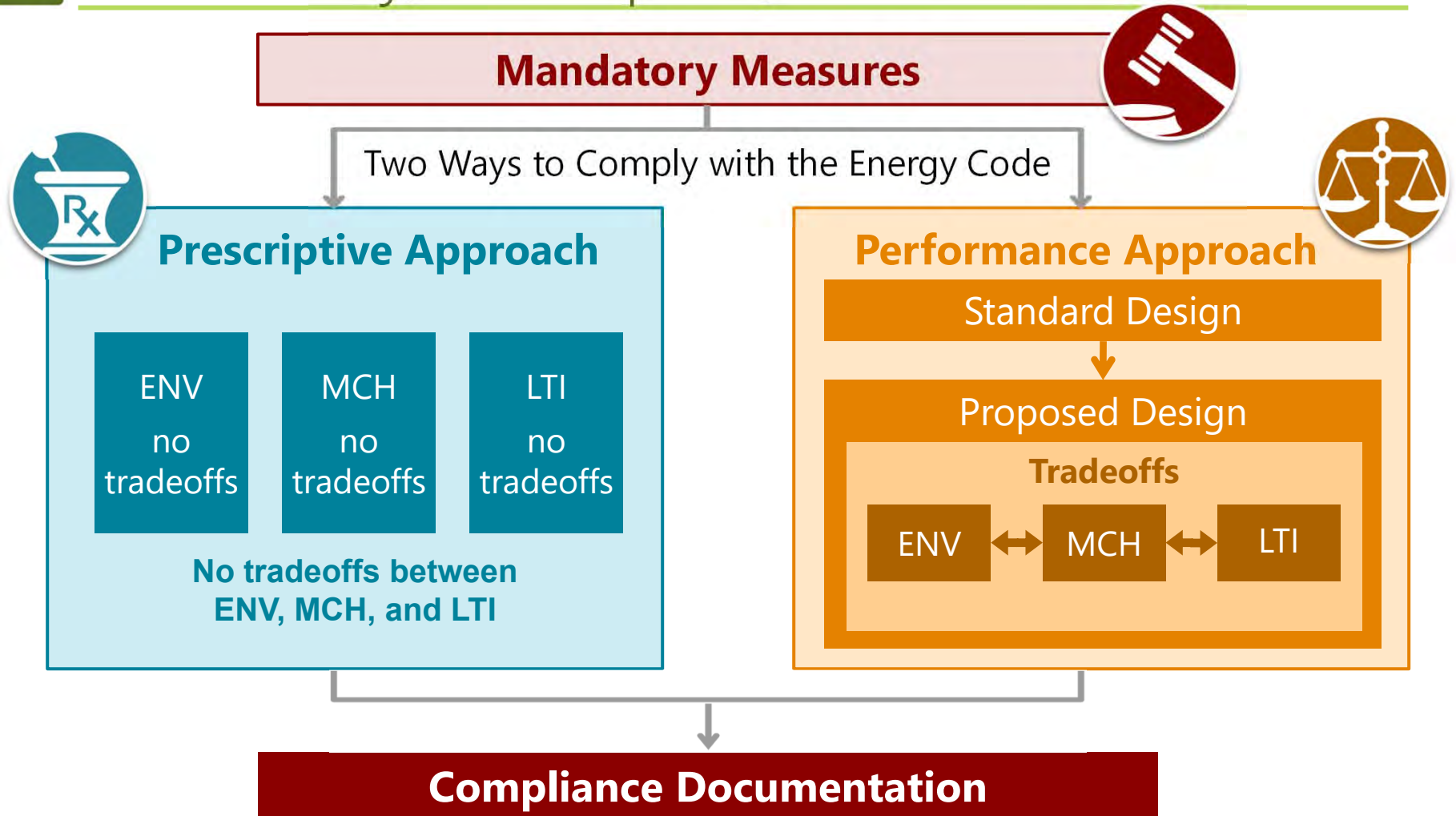
PRC

ENV

CXR



Mandatory, Prescriptive, Performance



Some Prescriptive requirements likely 'traded away' via Performance Approach. Look for features that were **improved** to compensate for the "tradeoff."



Which Forms for What



Mandatory Measures

NRCC-PRC-E: Covered Process

- Refrigerated Spaces $< 3,000 \text{ ft}^2$ / Refrigerated Spaces $\geq 3,000 \text{ ft}^2$
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Prescriptive Approach

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Prescriptive Measures

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Let's Talk



HELPING YOU PLAY YOUR CARDS RIGHT





Challenges



- ✦ Challenge A:
 - ✦ Tips & Tricks



- ✦ Challenge B:
 - ✦ Form(s) Structure



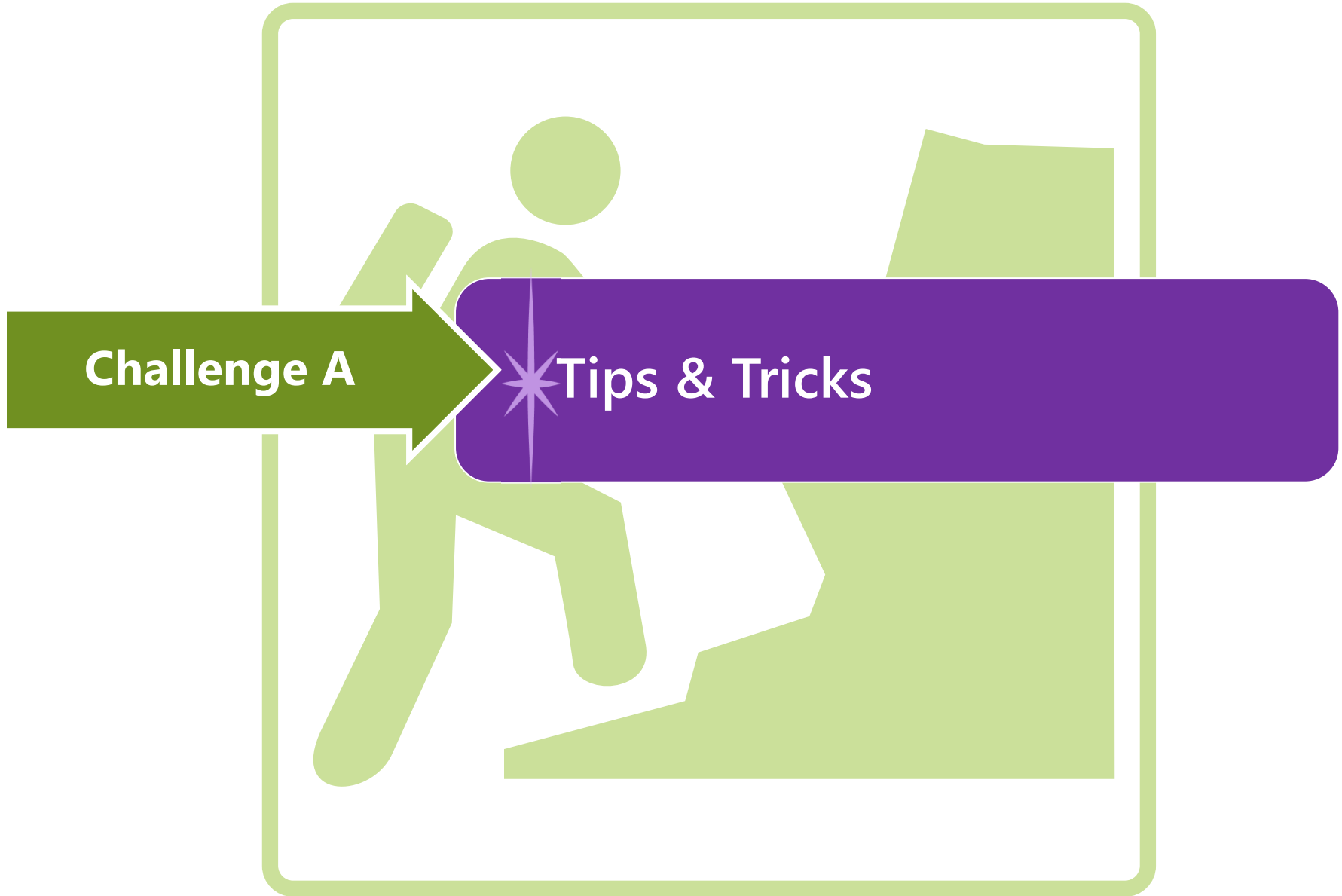
- ✦ Challenge C:
 - ✦ New Project Scope



- ✦ Challenge D:
 - ✦ Alteration Project Scope


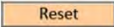



Challenge A





Troubleshooting

Action	Tip
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Troubleshooting

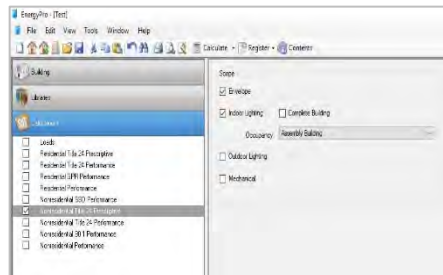
Action	Tip
Accessing the Form(s) <ul style="list-style-type: none"> Download dynamic PDF frequently for latest version. 	Energy Commission (free): https://ww2.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCC/ Energy Code Ace (free): https://energycodeace.com/content/tools-ace/tool=forms-ace Energy Pro (must purchase software): http://www.energysoft.com/shop/ <i>If using Energy Pro, be sure you have the latest version</i>



[energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/](https://ww2.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/)



energycodeace.com/content/tools-ace/tool=forms-ace



Via EnergyPro Software
[energysoft.com/energypro/nonresidential-modules/](http://www.energysoft.com/energypro/nonresidential-modules/)



Online Resource Center (Free)

Compliance Forms +
Energy +
Events +
Handouts +
ENERGY ID FORMS

2019 Building Energy Efficiency Standards
The 2019 Building Energy Efficiency Standards take effect January 1, 2020. Find compliance manuals, forms, software, and supporting content.

2016 Building Energy Efficiency Standards
The 2016 Building Energy Efficiency Standards were effective January 1, 2017. Find compliance manuals, forms, software, and supporting content.

Past Building Energy Efficiency Standards
Historical archive of past standards (2013 and prior).

Share: f t in e

About Careers Contact Events Newsroom Resources Settings

Enter keywords, e.g. Tracking Progress

HOME PROCEEDINGS RULES AND REGULATIONS PROGRAMS AND TOPICS FUNDING DATA AND REPORTS SHOWCASE

California Energy Commission > Programs and Topics > All Programs > Building Energy Efficiency Standards - Title 24 > Online Resource Center

Online Resource Center

The Online Resource Center provides educational assistance about the Building Energy Efficiency Standards to building and enforcement communities. The California Energy Commission and utilities developed the resources, which include fact sheets, energy audits, and presentations.

BUILDING ENERGY EFFICIENCY STANDARDS - TITLE 24
2022 Building Energy Efficiency Standards

Home -> title24 -> 2019standards -> 2019 compliance documents -> Nonresidential Documents

2019 Compliance Documents - Nonresidential

If a file doesn't open when you select the link, or a fillable form isn't functioning:

- Use a different browser, such as Internet Explorer (IE)
- Right-click the file link, select "Save...as", save the file to your computer (e.g., save to your desktop), and locate the saved file to open
- Delete your internet browsing history to clear your cache and download the latest version of the file
- Configure your browser to use Adobe if you're having trouble with PDFs

Bluebeam Issues

- Filling out issues with Bluebeam

If you're still having trouble accessing a file, send an email with the web page URL and file name to Title24@energy.ca.gov

Name	Last modified <small>Color dates added today</small>	Size
NRCA	Oct 24, 2019	4 kb
NRCC	Nov 26, 2019	4 kb
NRCI	Nov 28, 2018	4 kb
NRCV	Nov 30, 2018	4 kb



Energy Code Ace (Free)

<https://energycodeace.com>

The screenshot shows the Energy Code Ace website interface. A purple arrow points to the 'Tools Ace' dropdown menu. Below it, the 'Forms Ace' tool is highlighted with a purple oval. The tool description states: 'The Forms Ace™ tool is designed to help you determine which Title 24, Part 6 forms are applicable to your specific project. Use this tool prior to building permit to identify which forms will be required for your addition, alteration or new construction project and whether or not your project requires HERS (Home Energy Rating System) certification.'

Complete Forms Online
Want our virtual assistant to help you complete your forms and verify compliance?
🔗 **2019 NRCC Forms** Start or edit the 2019 Nonresidential Certificate of Compliance (NRCC) forms for your Commissioning, Domestic Water Heating, Electrical Power Distribution, Outdoor Lighting, Sign Lighting and Solar Ready Project.

or

Download Forms
Know which nonresidential Prescriptive or Mandatory project form you need and need less help with completion?

2019 NRCC Dynamic Forms

📄 Commissioning	📄 Lighting - Outdoor
📄 Domestic Water Heating	📄 Lighting - Sign
📄 Electrical Power Distribution	📄 Mechanical
📄 Envelope	📄 Process Systems
📄 Lighting - Indoor	📄 Solar Ready



Energy Pro (Must Purchase Software)

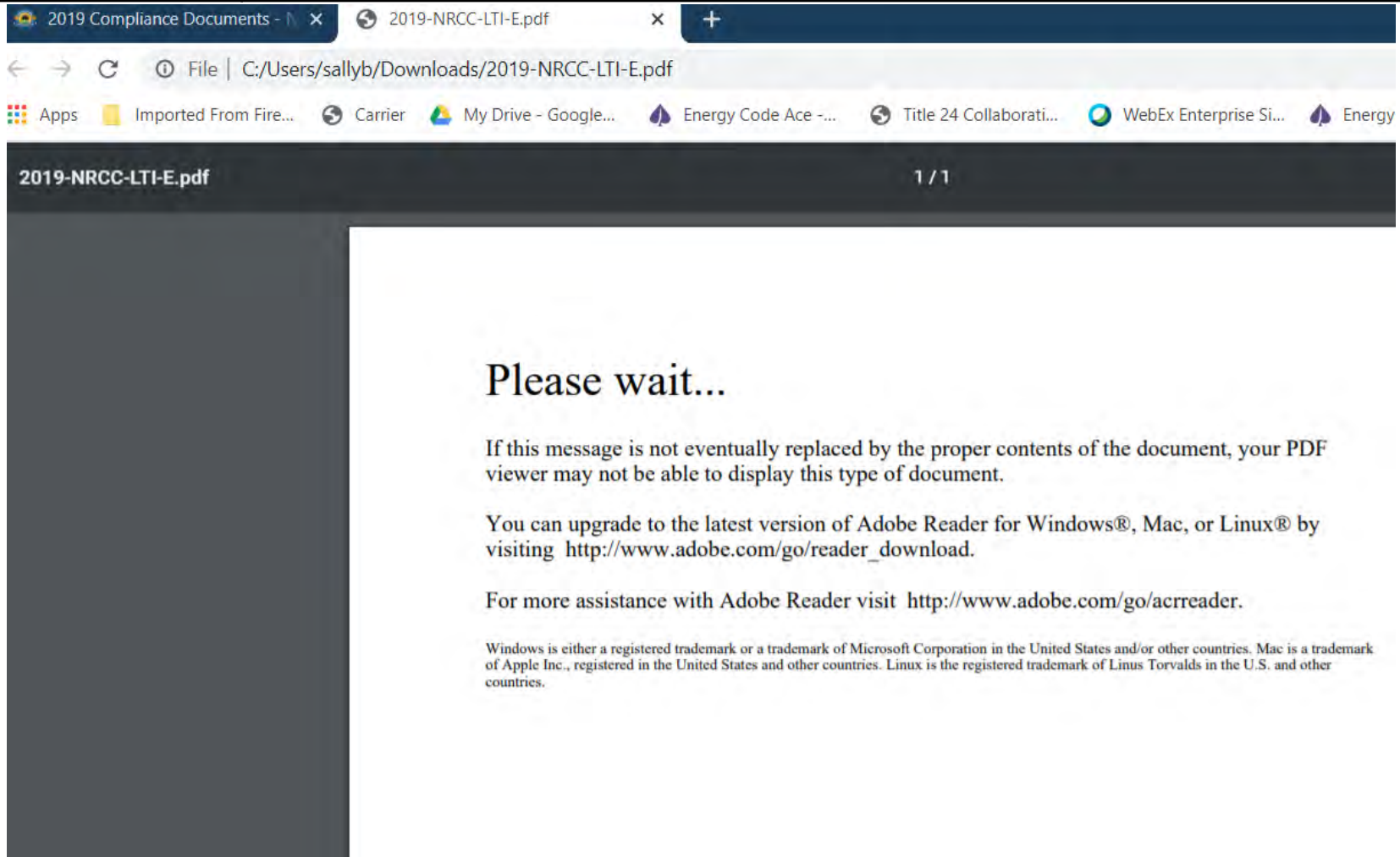
<http://www.energysoft.com/shop/>

The screenshot shows the EnergySoft website interface. At the top, there is a dark navigation bar with social media icons (person, back, RSS, Facebook) on the left and a 'Contact Us' link on the right. Below this is a white header area with 'Title-24' and 'EnergyPro' on the left, and 'LEED' on the right. The 'ENERGY SOFT' logo is centered in the header. A green navigation bar contains the following menu items: HOME, ENERGYPRO (with a dropdown arrow), DOWNLOAD (with a dropdown arrow), SHOP (with a dropdown arrow), CONSULTING SERVICES (with a dropdown arrow), SUPPORT (with a dropdown arrow), FIRM INFORMATION (with a dropdown arrow), and CONTACT US. Below the navigation bar is a breadcrumb trail: Home > Home. The main content area features two announcements. The first is 'EnergyPro v4.8 45L Tax Credit Software', with a purple arrow pointing to the 'SHOP' menu item. The second is 'New EnergyPro Version 8'. On the right side, there is a 'Log In' section with fields for 'Username:' and 'Password:', each with a dropdown arrow icon.



Downloading & Opening

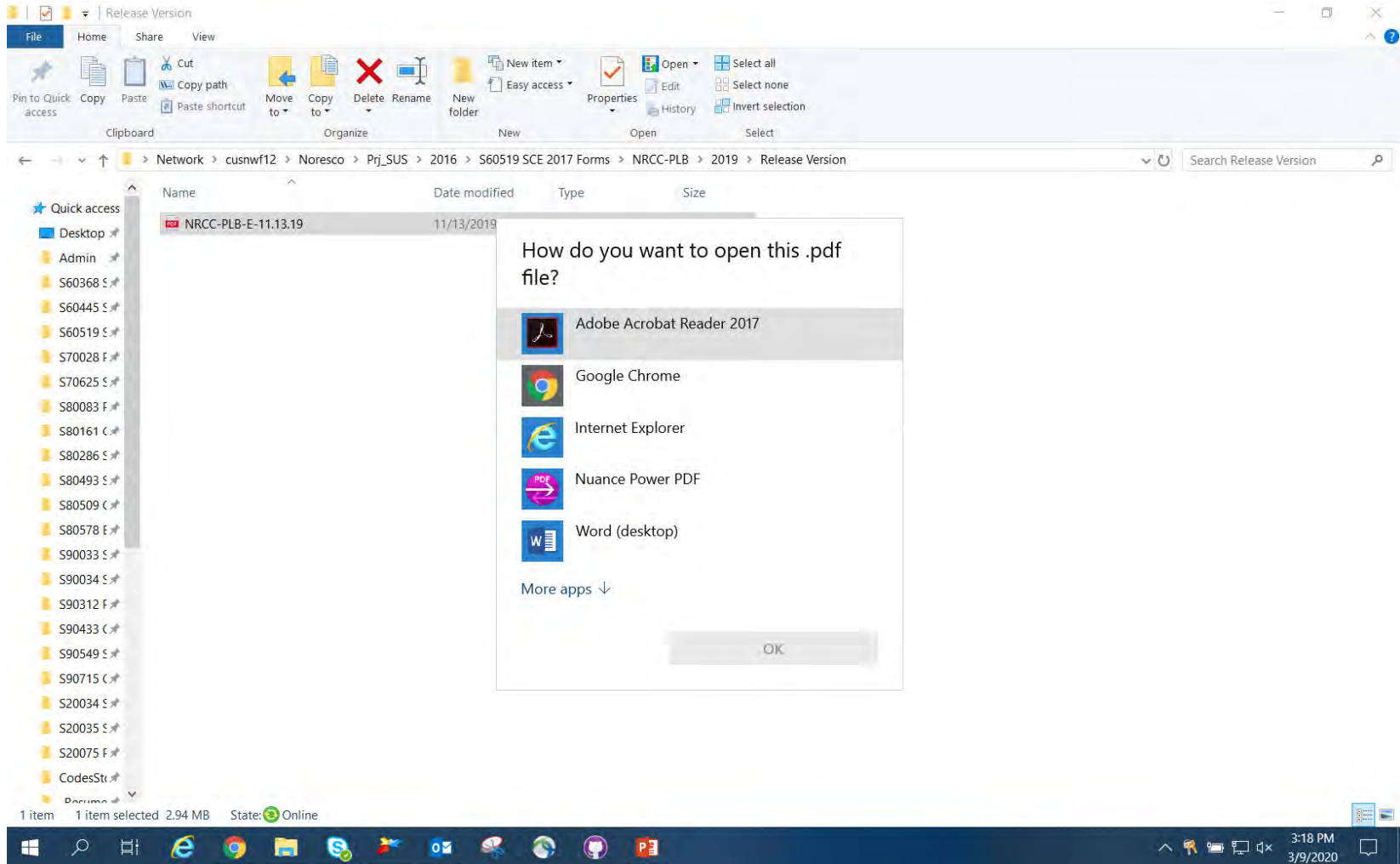
Action	Tip
Opening the Dynamic Form	If you see the error "Please Wait...": <ol style="list-style-type: none">1. Download the form and save to location on your computer2. Open it from there using Adobe Reader (2017 free version seems to work best) <p><i>There are known issues when using PDF software other than Adobe Reader (such as Bluebeam, Adobe Acrobat DC and many others)</i></p>





Downloading & Opening

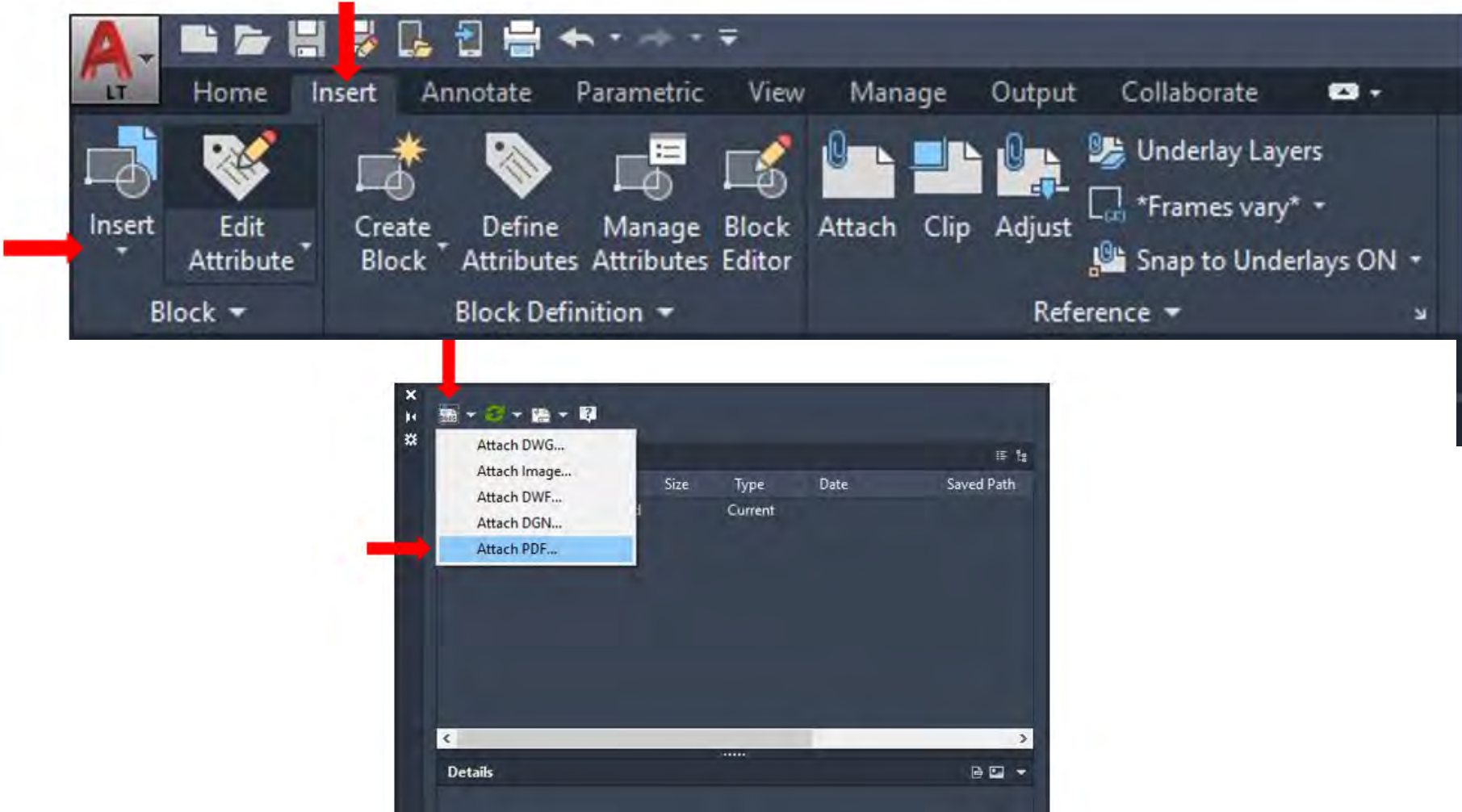
Action	Tip
Opening the Dynamic Form	If you see the error "Please Wait...": <ol style="list-style-type: none">1. Download the form and save to location on your computer2. Open it from there using Adobe Reader (2017 free version seems to work best) <p><i>There are known issues when using PDF software other than Adobe Reader (such as Bluebeam, Adobe Acrobat DC and many others)</i></p>





Using with CAD or Bluebeam

Action	Tip
Importing	<ol style="list-style-type: none">1. After completing in Adobe Reader – SAVE (save often)2. Print to pdf for a “static” version3. Import to CAD or Bluebeam as usual. <p><i>The form will need to be “locked” in place by printing to PDF to import into CAD, Bluebeam, etc.</i></p>





Using with CAD or Bluebeam

Action	Tip
Importing	<ol style="list-style-type: none">1. After completing in Adobe Reader – SAVE (save often)2. Print to pdf for a “static” version3. Import to CAD or Bluebeam as usual. <p><i>The form will need to be “locked” in place by printing to PDF to import into CAD, Bluebeam, etc.</i></p>

The screenshot shows the Adobe Acrobat Reader 2017 interface with the Print dialog box open. The printer is set to Nuance PDF. The Pages to Print section is set to 'All'. The Page Sizing & Handling section is set to 'Fit' with a scale of 100%. A preview of the document page is shown in the center of the dialog box.



When Table C Says "Does Not Comply"

Action	Tip
Table C says "DOES NOT COMPLY"	1. In Table C, look for "No" columns, and then review the table connected to the "no" and verify inputs are compliant 2. Table D may also provide some direction on which table needs additional information to be considered complete <i>Confirm you have filled out ALL editable cells</i>

C. COMPLIANCE RESULTS										
Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.										
01	02	03	04	05	06	07	08	09	10	11
Refrigerated Warehouse/Space §120.6(a)	Commercial Refrigeration §120.6(b)	Parking Garage Exhaust §120.6(c)	Process Boilers §120.6(d)	Compressed Air Systems §120.6(e)	Elevators §120.6(f)	Escalators & Moving Walkways §120.6(g)	Computer Rooms §140.9(a)	Commercial Kitchens §140.9(b)	Laboratory Exhaust §140.9(c)	Compliance Results
(See Table F)	(See Table G)	(See Table H)	(See Table I)	(See Table J)	(See Table K)	(See Table L)	(See Table M)	(See Table N)	(See Table O)	
Yes										COMPLIES

H. ENCLOSED PARKING GARAGE EXHAUST										
Table Instructions: Complete the following table for enclosed garage ventilation/exhaust systems with an exhaust rate ≥ 10,000 cfm to demonstrate compliance with mandatory requirements found in §120.6(c) .										
	Yes	Exceptions								
01	<input type="checkbox"/>	Garage is expected to have vehicles with non-gasoline combustion engines for > 20% of the parked vehicles per Exception 1 to §120.6(c)								
02	<input type="checkbox"/>	Project scope includes an addition or alteration to an existing garage where < 10,000 cfm of new exhaust capacity is being added Exception 2 to §120.6(c)								
	Yes	Requirements								
03	<input checked="" type="checkbox"/>	Exhaust fan control modulates airflow rates ≤ 50% design capacity when contaminant levels are maintained per §120.6(c)1								
04	<input checked="" type="checkbox"/>	Fan control or device allows fan motor demand ≤ 30% design wattages at 50% of design airflow per §120.6(c)2								
05	<input checked="" type="checkbox"/>	Design includes monitoring CO with a sensor density ≥ 1 per 5,000 ft ² per §120.6(c)3								
06	<input checked="" type="checkbox"/>	CO sensors are located in the highest expected concentration locations, with at least two per proximity zone per §120.6(c)3								
07	<input checked="" type="checkbox"/>	Design CO sensor setpoint ≤ 25 ppm per §120.6(c)4								
08	<input checked="" type="checkbox"/>	Occupied garage design maintains negative pressurization per §120.6(c)6								
09	<input checked="" type="checkbox"/>	Designed occupied total ventilation rate ≥ 0.15 CFM/ ft ² §120.6(c)5								
		10	11	12	13	14				
		Fan Name	Parking Garage Area (ft ²)	Ventilation Fan Rate (CFM)	Minimum Ventilation Rate Required (CFM)	Compliant?				
		fan	10,000	1,600	1,500	Yes				
					Reset	Add Ventilation Fan	Remove Last			
Indicate where in the construction documents these requirements can be verified P-1										



When Table C Says "Does Not Comply"

Action	Tip
Table C says "DOES NOT COMPLY"	<ol style="list-style-type: none"> In Table C, look for "No" columns, and then review the table connected to the "no" and verify inputs are compliant Table D may also provide some direction on which table needs additional information to be considered complete <p style="text-align: center;"><i>Confirm you have filled out ALL editable cells</i></p>

C. COMPLIANCE RESULTS										
Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.										
01	02	03	04	05	06	07	08	09	10	11
Refrigerated Warehouse/ Space §120.6(a)	Commercial Refrigeration §120.6(b)	Parking Garage Exhaust §120.6(c)	Process Boilers §120.6(d)	Compressed Air Systems §120.6(e)	Elevators §120.6(f)	Escalators & Moving Walkways §120.6(g)	Computer Rooms §140.9(a)	Commercial Kitchens §140.9(b)	Laboratory Exhaust §140.9(c)	Compliance Results
(See Table F)	(See Table G)	(See Table H)	(See Table I)	(See Table J)	(See Table K)	(See Table L)	(See Table M)	(See Table N)	(See Table O)	
		No								DOES NOT COMPLY

D. EXCEPTIONAL CONDITIONS
This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.
Table K indicates one or more elevators which have designed ventilation Watts/cfm greater than the maximum Watts/cfm allowed. Please revise Table K to demonstrate compliance.

K. ELEVATOR LIGHTING AND VENTILATION							
Table Instructions: Complete the following table for elevator lighting and ventilation to demonstrate compliance with mandatory requirements found in §120.6(f) for each individual elevator.							
01	02	03	04	05	06	07	08
Lighting §120.6(f)1 & §120.6(f)3							
Elevator Name or Item Tag	Elevator Area (ft ²)	Fixture Name or Item Tag	Watts per Fixture	Number of Fixtures	Power per Design (W)	Maximum Power Allowed ¹ (W)	Controls
EL-1	120	LT-E	10	4	40	72	Occupancy sensors provided
Total Design Watts					40	72	
					Add Fixture	Remove Last Fixture	
EL-2	180	LT-S	10	6	60	108	Occupancy sensors provided
Total Design Watts					60	108	
					Add Fixture	Remove Last Fixture	
09	10	11	12	13	14	15	
Ventilation §120.6(f)1 & §120.6(f)3							
Name or Item Tag	Conditioned Cab?	Fan Power (Watts)	Design Airflow (CFM)	Design Watts per CFM	Maximum Watts per CFM Allowed	Controls	
EL-1	No	40	100	0.4	0.33	Occupancy sensors provided	
EL-2	No	50	150	0.33	0.33	Occupancy sensors provided	



When Table C Says "Does Not Comply"


Action	Tip
Table C says "DOES NOT COMPLY"	1. In Table C, look for "No" columns, and then review the table connected to the "no" and verify inputs are compliant 2. Table D may also provide some direction on which table needs additional information to be considered complete <i>Confirm you have filled out ALL editable cells</i>


C. COMPLIANCE RESULTS										
Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.										
01	02	03	04	05	06	07	08	09	10	11
Refrigerated Warehouse/ Space §120.6(a) (See Table F)	Commercial Refrigeration §120.6(b) (See Table G)	Parking Garage Exhaust §120.6(c) (See Table H)	Process Boilers §120.6(d) (See Table I)	Compressed Air Systems §120.6(e) (See Table J)	Elevators §120.6(f) (See Table K)	Escalators & Moving Walkways §120.6(g) (See Table L)	Computer Rooms §140.9(a) (See Table M)	Commercial Kitchens §140.9(b) (See Table N)	Laboratory Exhaust §140.9(c) (See Table O)	Compliance Results
		No								DOES NOT COMPLY

H. ENCLOSED PARKING GARAGE EXHAUST						
Table Instructions: Complete the following table for enclosed garage ventilation/exhaust systems with an exhaust rate ≥ 10,000 cfm to demonstrate compliance with mandatory requirements found in §120.6(c) .						
	Yes	Exceptions				
01	<input type="checkbox"/>	Garage is expected to have vehicles with non-gasoline combustion engines for > 20% of the parked vehicles per Exception 1 to §120.6(c)				
02	<input type="checkbox"/>	Project scope includes an addition or alteration to an existing garage where < 10,000 cfm of new exhaust capacity is being added Exception 2 to §120.6(c)				
	Yes	Requirements				
03	<input checked="" type="checkbox"/>	Exhaust fan control modulates airflow rates ≤ 50% design capacity when contaminant levels are maintained per §120.6(c)1				
04	<input checked="" type="checkbox"/>	Fan control or device allows fan motor demand ≤ 30% design wattages at 50% of design airflow per §120.6(c)2				
05	<input checked="" type="checkbox"/>	Design includes monitoring CO with a sensor density ≥ 1 per 5,000 ft ² per §120.6(c)3				
06	<input type="checkbox"/>	CO sensors are located in the highest expected concentration locations, with at least two per proximity zone per §120.6(c)3				
07	<input type="checkbox"/>	Design CO sensor setpoint ≤ 25 ppm per §120.6(c)4				
08	<input type="checkbox"/>	Occupied garage design maintains negative pressurization per §120.6(c)6				
09	<input type="checkbox"/>	Designed occupied total ventilation rate ≥ 0.15 CFM/ ft ² §120.6(c)5				
	10	11	12	13	14	
	Fan Name	Parking Garage Area (ft ²)	Ventilation Fan Rate (CFM)	Minimum Ventilation Rate Required (CFM)	Compliant?	
	fan	10,000	1,600	1,500	Yes	
				Reset	Add Ventilation Fan	Remove Last
	Indicate where in the construction documents these requirements can be verified				P-1	




When Tables Don't Expand

Action	Tip
Table Tips	<p>The table tips  the top right of the tables include tips about completing that table</p> <ol style="list-style-type: none"> Will include Energy Code guidance Will typically indicate how other tables that are related to each other <p><i>If a table is closed with "This Section Does Not Apply" and you think it should, look at table tips</i></p>

B. PROJECT SCOPE 					
Table Instructions: Include any electrical service systems that are within the scope of the permit application.					
01	02	03	04	05	06
Electrical Service Designation/Description	Scope of Work ¹	Rating (kVA)	Utility Provided Metering System Exception to §130.5(a) ²	System subject to CA Elec Code Article 517 Exception to §130.5(a)&(b)	Demand Response Controls
					Where required, demand response controls must be specified which are capable of receiving and automatically responding to at least one standards based messaging protocol which enables demand response after receiving a demand response signal. Sections §120.2 , §130.1 and §130.3 and compliance documents NRCC-MCH, NRCC-LTI and NRCC-LTS will indicate when demand response controls are required.
New	New electrical service equipment & meter	250	<input type="checkbox"/>	<input type="checkbox"/>	
				Add Row	Remove Last

¹ FOOTNOTES: Adding only new feeders and branch circuits triggers Voltage Drop 130.5(c), no other requirements from 130.5 are required.

G. SEPARATION OF ELECTRICAL CIRCUITS FOR ENERGY MONITORING 					
Table Instructions: Complete this table for entirely new or complete replacement electrical power distribution systems to demonstrate compliance with §130.5(b) . Using the dropdown choices in column 01, indicate the load types included for each service. Any load types that are not included in the service do not need to be shown.					
Electrical Service Designation/Description: New					
01	02	03	04	05	
Load Type per Table 130.5-B ¹	Minimum Required Separation of Load per Table 130.5-B	Compliance Method ²	Location of Requirements in Construction Documents	Field Inspector	
				Pass	Fail
				<input type="checkbox"/>	<input type="checkbox"/>
			Reset	Add Load Type	Remove Last

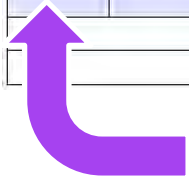
^{*} NOTES: If "Other*" is selected under Compliance Method above, please indicate how compliance has been achieved in the space provided below.



Dropdowns Don't Populate

Action	Tip
Dropdowns in Tables are Blank	<ol style="list-style-type: none"> Complete the form in order from start to finish. Many tables supplement subsequent tables All fields which are not greyed out must be completed Tag IDs should be unique and not duplicated <p><i>Confirm you are using Adobe Ready (2017), this is a known issue with other PDF software such as Bluebeam</i></p>

F. INDOOR LIGHTING FIXTURE SCHEDULE									
Table Instructions: Include all permanent designed lighting and all portable lighting in offices.									
Designed Wattage: Conditioned Spaces									
01	02	03	04	05	06	07	08	09	10
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change ¹	Watts per luminaire ²	How Wattage is determined	Total number luminaires	Exempt per §140.6(a)3	Design Watts	Field Inspector
		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	0	Pass <input type="checkbox"/> Fail <input type="checkbox"/>
Total Designed Watts CONDITIONED SPACES:								0	
							Reset	Add Row	Remove Last



Need to complete Table F first

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))															
Table Instructions: Please complete the table for all areas indicated in Table I or Table K as using a PAF credit described in §140.6(a)2.															
Conditioned Spaces															
01	02										03	04	05	06	07
Area Description	PAF per §140.6(a)2 ¹ (*Can be used in conjunction with other PAFs)										Luminaires Controlled for PAF Credit			Additional Control Credit Allowance (Watts)	
	1	2A	2B	2C	3A*	3B*	4*	5*	6*	7*	Luminaire Name or Item Tag	Watts per Luminaire	Number of Luminaires		Lighting Controlled (Watts)
	Pick up to one				Pick up to one			Pick up to one ²							
Auditorium Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			0	0	
												Add Luminaire	Remove Last		
08						09									
<input type="checkbox"/>	All spaces applying PAF 5, 6, or 7 include a daylight design meeting requirements in §140.3(d). See Table S.										Total Power Adjustment (Watts) CONDITIONED SPACES:			0	





Dropdowns Don't Populate

Action	Tip
Dropdowns in Tables are Blank	<ol style="list-style-type: none">1. Complete the form in order from start to finish. Many tables supplement subsequent tables2. All fields which are not greyed out must be completed3. Tag IDs should be unique and not duplicated <p><i>Confirm you are using Adobe Ready (2017), this is a known issue with other PDF software such as Bluebeam</i></p>

The screenshot shows the Adobe Acrobat Reader 2017 interface. The top menu bar includes File, Edit, View, Window, and Help. Below the menu bar are two tabs: '2019-NRCC-LTO-E...' and '2019-NRCC-PRC-E...'. The toolbar contains various icons for file operations, navigation, and zooming. The main content area displays a PDF document titled '2019-NRCC-PRC-E (1).pdf'. The document content includes a table of contents on the left side with sections A, B, and C. The main text area is partially obscured by a large, semi-transparent watermark that reads 'Adobe Acrobat Reader 2017' and '2017 Release | Version 2017.011.30166'. The watermark also includes the Adobe logo and copyright information: 'Copyright © 1984-2020 Adobe. All rights reserved.' and 'Adobe, the Adobe logo, the Adobe PDF logo, and Acrobat are either registered trademarks or trademarks of Adobe in the United States and/or other countries. All other trademarks are the property of their respective owners.' Below the watermark, there is a section for 'Third Party notices, terms and conditions pertaining to third party software can be found at: http://www.adobe.com/products/eula/third_party.html'. The document content also includes sections for 'FOOTNOTES: the NRCC-PRC-' and 'C. COMPLIAR'.



Need to Redo Project Data in Table

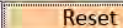


Action	Tip
Reset Button	1. Each table includes a Reset button  which deletes all project data that's been entered into the table and resets any logic for that table. This can help the form correct itself, but you will need to reenter your data. <i>If a table starts acting funny (which can happen when you changed a lot of information on the table) hit </i>

H. WALL ASSEMBLY SCHEDULE

Table Instructions: Complete this table to demonstrate compliance with prescriptive wall assembly requirements in [§140.3\(a\)2](#) and [§140.3\(a\)3](#) for new construction or additions, or mandatory wall assembly requirements in [§141.0\(b\)1B](#) for alterations.


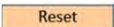
01	Indicate wall types included in the project: ¹	<input checked="" type="checkbox"/> Framed	<input type="checkbox"/> Mass (new only)	<input type="checkbox"/> Concrete Sandwich Panel (new only)	<input type="checkbox"/> SIPs	<input type="checkbox"/> ICF (new only)
		<input type="checkbox"/> Metal Panel	<input type="checkbox"/> Metal Building	<input type="checkbox"/> Spandrel/ Curtain Wall	<input type="checkbox"/> Straw Bale	<input type="checkbox"/> Log Home (new only)

¹FOOTNOTE: Wall types indicated above as "(new only)" do not have Title 24, Part 6 requirements for alterations. New construction and additions do have requirements and should be clicked above and compliance demonstrated within this table.

Framed Walls											
01	<input type="checkbox"/>	Calculate Area-Weighted Average U-factor for Metal Framed Walls ¹									
02	<input type="checkbox"/>	Include Wood Framed Walls in Area-Weighted Average U-factor Calculation ¹									
03	04	05	06	07	08	09	10	11	12		13
Tag/Plan Detail ID	Occupancy & Status	How Design U-factor was determined	Location	Frame Material, Spacing & Depth	Cavity Insulation per Design	Continuous Insulation per Design	Thermal Performance Unit	Required Thermal Performance ²	U-factor per Design		Net Area ³ (ft ²)
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			per JA4		
					R-	R-			per Software/Other		
											



Need to Redo Project Data in Table

Action	Tip
Reset Button	1. Each table includes a Reset button  which deletes all project data that's been entered into the table and resets any logic for that table. This can help the form correct itself, but you will need to reenter your data. <i>If a table starts acting funny (which can happen when you changed a lot of information on the table) hit </i>

H. WALL ASSEMBLY SCHEDULE

Table Instructions: Complete this table to demonstrate compliance with prescriptive wall assembly requirements in [§140.3\(a\)2](#) and [§140.3\(a\)3](#) for new construction or additions, or mandatory wall assembly requirements in [§141.0\(b\)1B](#) for alterations.

01	Indicate wall types included in the project: ¹	<input checked="" type="checkbox"/> Framed	<input type="checkbox"/> Mass (new only)	<input type="checkbox"/> Concrete Sandwich Panel (new only)	<input type="checkbox"/> SIPs	<input type="checkbox"/> ICF (new only)
		<input type="checkbox"/> Metal Panel	<input type="checkbox"/> Metal Building	<input type="checkbox"/> Spandrel/ Curtain Wall	<input type="checkbox"/> Straw Bale	<input type="checkbox"/> Log Home (new only)

¹FOOTNOTE: Wall types indicated above as "(new only)" do not have Title 24, Part 6 requirements for alterations. New construction and additions do have requirements and should be clicked above and compliance demonstrated within this table.

Framed Walls											
01	<input type="checkbox"/>	Calculate Area-Weighted Average U-factor for Metal Framed Walls ¹									
02	<input type="checkbox"/>	Include Wood Framed Walls in Area-Weighted Average U-factor Calculation ¹									
03	04	05	06	07	08	09	10	11	12		13
Tag/Plan Detail ID	Occupancy & Status	How Design U-factor was determined	Location	Frame Material, Spacing & Depth	Cavity Insulation per Design	Continuous Insulation per Design	Thermal Performance Unit	Required Thermal Performance ²	U-factor per Design		Net Area ³ (ft ²)
A	Nonresidential / Relocatable 1 CZ: New	JA4 Tables	Exterior	Metal 16" OC & 2x4	R-11	R-5 c.i.	U-factor	0.069	per JA4	0.106	
					R-	R-			per Software/ Other		
B	Nonresidential / Relocatable 1 CZ: New	JA4 Tables	Demising	Metal 16" OC & 2x4	None	None	U-factor	0.151	per JA4	0.458	
					R-	R-			per Software/ Other		
C	Nonresidential / Relocatable 1 CZ: New	Approved Software	Exterior	Metal 16" OC & 2x4			U-factor	0.069	per JA4		
					R- 12	R- 6			per Software/ Other	0.094	

Reset
Add Row
Remove Last



Need to Add a Responsible Person

Action	Tip
Signing	<ol style="list-style-type: none">1. After completing in Adobe Reader – SAVE (save often)2. Print to pdf for a “static” version3. Sign like you typically would a static PDF document <p><i>Some of the forms allow multiple “Responsible Person” signatures (i.e. NRCC-CXR-E), in which then the electronic signature function will not work. Use the directions above to include electronic signatures.</i></p>

STATE OF CALIFORNIA
Nonresidential Building Commissioning
NRCC-CXR-E (Created 11/19)

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE NRCC-CXR-E
Page 5 of 5

Project Name: Report Page:
Project Address: Date Prepared:

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Documentation Author Signature:
Company: Signature Date:
Address: CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:

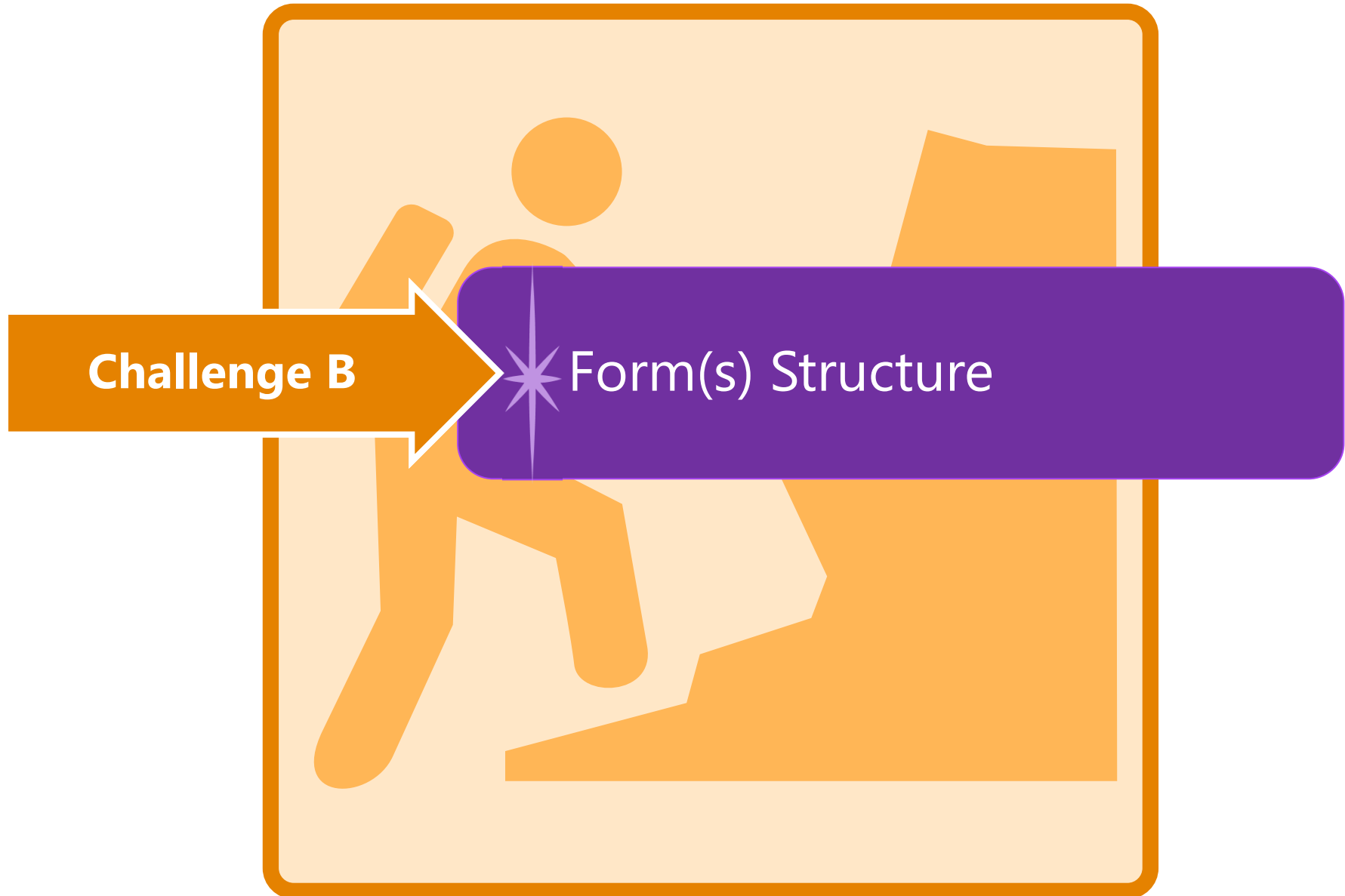
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Responsible Designer Signature:
Company : Date Signed:
Address: License:
City/State/Zip: Phone:

Add Responsible Person Remove Last



Challenge B





Consistent Structure

Table **A** General Information

Table **B** Project Scope

Table **C** Compliance Results (not editable)

Table **D** Exceptional Conditions (not editable)

Table **E** Additional Remarks

Tables **F through ?** Technical Inputs

NRCI Table

NRCA Table

NRCV Table

Signature Block



Table A: General Information

Check that "Total Conditioned Floor Area" and "Total Unconditioned Floor Area" input as General Information equals the "Total Area of Work" for conditioned spaces and unconditioned spaces under Table B Project Scope.

Typical Table A

A. GENERAL INFORMATION			
01	Project Location (city)		04 Total Conditioned Floor Area
02	Climate Zone		05 Total Unconditioned Floor Area
03	Occupancy Types Within Project:		06 # of Stories (Habitable Above Grade)
<input type="checkbox"/>	Office (B)	<input type="checkbox"/>	Retail (M)
<input type="checkbox"/>	Hotel/ Motel Guest Rooms (R-1)	<input type="checkbox"/>	School (F)
<input type="checkbox"/>	High-Rise Residential (R-2/R-3)	<input type="checkbox"/>	Relocatable Class Bldg (E)
<input type="checkbox"/>		<input type="checkbox"/>	Non-refrigerated Warehouse (S)
<input type="checkbox"/>		<input type="checkbox"/>	Healthcare Facility (H)
<input type="checkbox"/>		<input type="checkbox"/>	Other (Write In):

¹ FOOTNOTES: Climate zone can be determined on the California Energy Commission's website at http://www.energy.ca.gov/maps/renewable/building_climate_zones.html

STATE OF CALIFORNIA

Nonresidential Building Commissioning

NRCC-CXR-E (Created 12/19)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE

NRCC-CXR-E

This document is used to demonstrate compliance with mandatory commissioning requirements in §120.8 for nonresidential buildings and hotel/motel or high-rise residential buildings with nonresidential spaces. This document does not demonstrate compliance with commissioning requirements within Title 24, Part 11, which need to be documented separately if they apply.

Project Name:	Report Page:	Page 1 of 5
Project Address:	Date Prepared:	

A. GENERAL INFORMATION

01	Project Location (city)		04	Building Size (ft ²)	
02	Occupancy Type		05	Nonresidential Conditioned Floor Area (ft ²)	
03	Project Type		06	HVAC System Type	

Newly constructed
Major renovation
Core & shell only
Tenant fit out only
Addition or Alteration

Unitary or packaged equipment each serving one zone
Two-pipe, heating only systems
All other HVAC system types (indicates "complex")



Table A: General Information

Check that "Total Conditioned Floor Area" and "Total Unconditioned Floor Area" input as General Information equals the "Total Area of Work" for conditioned spaces and unconditioned spaces under Table B Project Scope.

Typical Table A

A. GENERAL INFORMATION					
01	Project Location (city)		04	Total Conditioned Floor Area	
02	Climate Zone		05	Total Unconditioned Floor Area	
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	
<input type="checkbox"/>	Office (B)	<input type="checkbox"/>	Retail (M)	<input type="checkbox"/>	Non-refrigerated Warehouse (S)
<input type="checkbox"/>	Hotel/ Motel Guest Rooms (R-1)	<input type="checkbox"/>	School (F)	<input type="checkbox"/>	Healthcare Facility (H)
<input type="checkbox"/>	High-Rise Residential (R-2/R-3)	<input type="checkbox"/>	Relocatable Class Bldg (E)	<input type="checkbox"/>	Other (Write In):

¹ FOOTNOTES: Climate zone can be determined on the California Energy Commission's website at http://www.energy.ca.gov/maps/renewable/building_climate_zones.html

STATE OF CALIFORNIA
Nonresidential Building Commissioning
 NRCC-CXR-E (Created 12/19) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE NRCC-CXR-E

This document is used to demonstrate compliance with mandatory commissioning requirements in §120.8 for nonresidential buildings and hotel/motel or high-rise residential buildings with nonresidential spaces. This document does not demonstrate compliance with commissioning requirements within Title 24, Part 11, which need to be documented separately if they apply.

Project Name: _____ Report Page: Page 1 of 5
 Project Address: _____ Date Prepared: _____

A. GENERAL INFORMATION					
01	Project Location (city)		04	Building Size (ft ²)	
02	Occupancy Type		05	Nonresidential Conditioned Floor Area (ft ²)	
03	Project Type		06	HVAC System Type	

STOP! Occupancy types that are not nonresidential, hotel/motel with nonresidential occupancies, or mixed-use, and project types which are additions or alterations, are not required to comply with commissioning requirements in §120.8 and do not need to complete this compliance document.



Table A: General Information

STATE OF CALIFORNIA

Envelope Component Approach

NRCC-ENV-E (Created 11/19)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE

NRCC-ENV-E

This document is used to demonstrate compliance with mandatory requirements in [§110.8\(g\)](#) and [§120.7\(b\)](#) for newly constructed buildings, and [§141.0\(b\)1](#) for alterations, related to roof, wall and floor assemblies. It is also used to demonstrate compliance with prescriptive requirements in [§140.3](#) for newly constructed buildings, and [§141.0](#) for additions and alterations, related to roof, wall, floor, door, fenestration and daylighting requirements.

Project Name:	Report Page:	Page 1 of 4
Project Address:	Date Prepared:	

A. GENERAL INFORMATION

01	Project Location (city)		05	# of Stories (Habitable Above Grade)	
02	Zipcode		06	Total Conditioned Floor Area (ft ²)	
03	Climate Zone		07	Total Unconditioned Floor Area (ft ²)	
04	Occupancy Types Within Project (select all that apply): If one occupancy constitutes ≥ 80% of the conditioned floor area, the entire building envelope may be designed to comply with the provisions of that occupancy per §100.0(f) .		08	<input type="checkbox"/> Project includes unconditioned enclosed space(s) > 5,000ft ² under a roof with a ceiling height of at least 15ft. ¹	
<input type="checkbox"/> All Nonresidential, including Relocatable Public School Building certified for use in one climate zone Occupancy: A / B / E / F / H / M / S / U		<input type="checkbox"/> Relocatable Public School Building for use in all climate zones Occupancy: E		<input type="checkbox"/> High-Rise Residential Occupancy: R-2 / R-3	
				<input type="checkbox"/> Hotel/Motel Guest Rooms Occupancy: R-1	

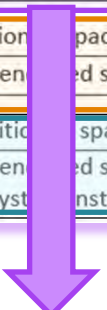
¹ FOOTNOTE: Enclosed spaces > 5,000 ft² directly under roof with ceiling height > 15ft in climate zones 2 through 15 are required to meet the minimum daylighting requirements defined in [§140.3\(c\)](#). Compliance with [§140.3\(c\)](#) is documented in Table L. This is the only prescriptive requirement which applies to unconditioned spaces.



Table B: Project Scope

Typical Table B

B. PROJECT SCOPE			
<i>Table Instructions:</i> Include any building envelopes that are within the scope of the permit application and are demonstrating compliance using the prescriptive paths outlined in §140.3, and §141.0(a)1 and §141.0(b)1 and 2 for additions and alterations.			
My project consists of (check all that apply)		Component Types	
01		02	
<input type="checkbox"/> New Construction or Newly Conditioned Space <input type="checkbox"/> One or more enclosed spaces > 5,000 ft ² directly under roof with ceiling height > 15ft	<input type="checkbox"/> Roof	<input type="checkbox"/> Walls <input type="checkbox"/> Floors	<input type="checkbox"/> Exterior Doors <input type="checkbox"/> Fenestration/Glazed Door ¹
<input type="checkbox"/> Addition of conditioned space <input type="checkbox"/> One or more enclosed spaces > 5,000 ft ² directly under roof with ceiling height > 15ft	<input type="checkbox"/> Roof	<input type="checkbox"/> Walls <input type="checkbox"/> Floors	<input type="checkbox"/> Exterior Doors <input type="checkbox"/> Fenestration/Glazed Door ¹
<input type="checkbox"/> Alteration of conditioned space <input type="checkbox"/> One or more enclosed spaces > 5,000 ft ² directly under roof with ceiling height > 15ft and lighting system installed for the first time	<input type="checkbox"/> Roof Assembly <input type="checkbox"/> Roofing Material	<input type="checkbox"/> Walls <input type="checkbox"/> Floors	<input type="checkbox"/> Exterior Doors NA for Alts. <input type="checkbox"/> Fenestration



Pick all features that apply

- Example: New free standing 2 story conditioned building
 - Roof + Walls + Floors + Exterior Doors + Fenestration

Pick all features that apply

- Example: Adding second floor to existing building:
 - Roof + Walls + Fenestration
- Example: Adding 2 story addition and replacing windows in existing conditioned building:
 - Roof + Walls + Floors + Fenestration + **alteration feature "fenestration"**

Pick all features that apply

- Example: Reroof:
 - Roof Assembly + Roofing Material
- Example: Openings walls and replacing windows:
 - Walls + Fenestration



Table B: Project Scope

STATE OF CALIFORNIA

Solar Ready Areas

NRCC-SRA-E (Created 11/19)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE

NRCC-SRA-E

This document is used to demonstrate compliance with mandatory requirements in [§110.10](#) for newly constructed buildings which are either high-rise multifamily ten stories or fewer, hotel/motel ten stories or fewer or all other nonresidential buildings three stories or fewer. It is also used to demonstrate compliance for additions to these building types which add more than 2,000 ft² of roof area. Alterations or additions of less than 2,000 ft² of roof area are not required to comply with [§110.10](#).

Project Name: Example	Report Page: Page 1 of 4
Project Address: Example	Date Prepared: Today

A. GENERAL INFORMATION

01	Project Location (city)	Example	04	Building Type	Other nonresidential bldg 3 stories or fewer
02	Climate Zone	3	05	Construction Type	New Construction
03	<input type="checkbox"/> Roof is designed for vehicle traffic, parking or for heliport				

B. PROJECT SCOPE

Table Instructions: Select the compliance path the project is using to comply per [§110.10\(b\)1B](#).

My project consists of (check one):

01	
<input type="checkbox"/> Provide Solar Ready Area no exceptions	The project has allocated a solar zone on the roof plan per requirements in §110.10(b) , as documented in Table F.
<input type="checkbox"/> Exception to Solar Ready Area: Installed Solar Photovoltaic System	The project includes a permanently installed solar electric system having a nameplate DC output rating, measured under Standard Test Conditions, of no less than one watt per square foot of roof area, as documented in Table G.
<input type="checkbox"/> Exception to Solar Ready Area: Installed Solar Water Heating System	The project is a hotel/motel or high-rise multifamily occupancy and includes a permanently installed domestic solar water-heating system complying with §150.1(c)8Biii and Reference Residential Appendix RA4 , as documented in Table H.
<input type="checkbox"/> Exception to Solar Ready Area: Smart Thermostat and Alternative Energy Efficiency Measure	The project is a high-rise multifamily occupancy where all thermostats in each dwelling unit comply with §110.12(a) AND at least one additional measure listed in Exception 4 to §110.10(b)1B is installed, as documented in Table I.

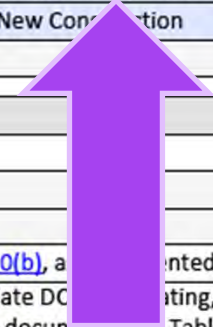




Table C: Compliance Results

Typical Table C

C. COMPLIANCE RESULTS							
Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.							
Opaque Envelope Components					Fenestration	Daylighting Spaces > 5,000 ft ²	Compliance Results
Roof Assembly	Roofing Materials	Walls	Floors	Doors			
01	02	03	04	05	06	07	08
(See Table F)	(See Table G)	(See Table H)	(See Table I)	(See Table J)	(See Table K)	(See Table L)	
No	Yes	Yes					DOES NOT COMPLY

STATE OF CALIFORNIA

Outdoor Lighting

NRCC-LTO-E (Created 11/19)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE

NRCC-LTO-E

This document is used to demonstrate compliance with requirements in [§110.9](#), [§130.0](#), [§130.2](#), [§140.7](#), and [§141.0\(b\)2L](#) for outdoor lighting scopes using the prescriptive path.

Project Name: Example

Report Page:

Page 1 of 6

Project Address: Example

Date Prepared:

Today

C. COMPLIANCE RESULTS															
Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.															
Calculation of Total Allowed Lighting Power (Watts) §140.7 or §141.0(b)2L						Compliance Results									
01	02	03	04	05	06	07	08	09							
General Hardscape Allowance §140.7(d)1	+	Per Application §140.7(d)2	+	Sales Frontage §140.7(d)2	+	Ornamental §140.7(d)2	+	Per Specific Area §140.7(d)2	OR	Existing Power §141.0(b)2L	=	Total Allowed (Watts)	≥	Total Actual (Watts)	07 Must be ≥ 08
(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)		(See Table N)				(See Table F)	
5,950	+		+		+		+		OR		=	5,950	≥	5,490	COMPLIES
Cutoff Compliance (See Table G for Details)											Not Applicable				
Controls Compliance (See Table H for Details)											DOES NOT COMPLY				



Table C: Compliance Results

STATE OF CALIFORNIA
Process Systems
 NRCC-PRC-E (Created 11/19) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE NRCC-PRC-E

Table Instructions: Include any process systems that are within the scope of the permit application and are demonstrating compliance with mandatory requirements in §120.6, or prescriptive requirements in §140.9. This compliance document is used for newly constructed, addition and alteration projects.

Project Name: Example Report Page: Page 1 of 6
 Project Address: Example Date Prepared: Today

A. GENERAL INFORMATION ?

01 Project Location (city)	Example	04 Total Conditioned Floor Area	10,000
02 Climate Zone	3	05 Total Unconditioned Floor Area	10,000
03 Occupancy Types Within Project:		06 # of Stories (Habitable Above Grade)	0

Office Retail Non-refrigerated Warehouse
 Hotel/ Motel School Healthcare Facility
 High-Rise Residential Relocatable Class Bldg Other (Write In):

B. PROJECT SCOPE ?

Table Instructions: Include any process systems listed below within the scope of the permit application that are demonstrating compliance with mandatory requirements in §120.6 or prescriptive requirements in §140.9.

My project consists of (check all that apply):

01	02
<input type="checkbox"/> Refrigerated Spaces <3,000 ft ² Total (no Title 24, Pt 6 requirements)	<input checked="" type="checkbox"/> Elevator Lighting & Ventilation Controls (mandatory §120.6(f))
<input type="checkbox"/> Refrigerated Spaces ≥3,000 ft ² Total (mandatory §120.6(a))	<input type="checkbox"/> Escalators & Moving Walkway Speed Controls (mandatory §120.6(g))
<input checked="" type="checkbox"/> Food Stores > 8,000 ft ² cfa (mandatory §120.6(b))	<input type="checkbox"/> Computer Rooms > 20W/ft ² Power Density (prescriptive §140.9(a)) ¹
<input type="checkbox"/> Enclosed Parking Garage Exhaust ≥ 10,000 cfm (mandatory §120.6(c))	<input type="checkbox"/> Laboratory Ventilation/Exhaust (prescriptive §140.9(b)) ¹
<input type="checkbox"/> Newly Installed Process Boilers (mandatory §120.6(d))	<input type="checkbox"/> Laboratory Exhaust/Factory Exhaust & Fume Hood (prescriptive §140.9(c)) ¹
<input type="checkbox"/> Compressor Combined HP ≥ 25 (mandatory §120.6(e))	

¹ FOOTNOTES: ... building features can comply using the performance method. If using the performance method for these features, compliance should be demonstrated on the NRCC-PRC-E compliance document.

C. COMPLIANCE RESULTS ?

Table Instructions: ... cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Circumstances" refer to Table D. for guidance.

01	02	03	04	05	06	07	08	09	10	11
Refrigerated Warehouse/Space §120.6(a)	Commercial Kitchen Exhaust §120.6(b)	Parking Garage Exhaust §120.6(c)	Process Boilers §120.6(d)	Compressed Air Systems §120.6(e)	Elevators §120.6(f)	Escalators & Moving Walkways §120.6(g)	Computer Rooms §140.9(a)	Commercial Kitchens §140.9(b)	Laboratory Exhaust §140.9(c)	Compliance Results
(See Table F)	(See Table G)	(See Table H)	(See Table I)	(See Table J)	(See Table K)	(See Table L)	(See Table M)	(See Table N)	(See Table O)	
Yes					No					DOES NOT COMPLY



Tables D & E: Exceptional Conditions & Notes

Typical Table D

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

Total Hardscape Area in Table A does not match the areas entered in Table I. Please review for compliance.
Selections made in Table O have been changed by the permit applicant. See Table E. Additional Remarks for permit applicant's explanation.
Selections made in Table P have been changed by the permit applicant. See Table E. Additional Remarks for permit applicant's explanation.

Table E

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

These are my super important notes for the plans examiner. I can also write notes that I think the contractor or inspector should know.



Tables F/? : Equipment/Technical Schedule

Typical Technical Table

F. OUTDOOR LIGHTING FIXTURE SCHEDULE										
<p><i>Table Instructions: For new or altered lighting systems demonstrating compliance with §140.7 (ie Table I has expanded for input), include all luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application in the Table below. For altered lighting systems using the Existing Power method per §141.0(b)2L (ie Table N has expanded for input), include only new luminaires being installed and replacement luminaires being installed as part of the project scope (ie, do not include existing luminaires remaining or existing luminaires being moved).</i></p>										
Designed Wattage:										
01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Watts per luminaire ^{1,2}	How Wattage is determined	Total number luminaires ²	Luminaire Status ^a	Excluded per §140.7(a)	Design Watts	Cutoff Req. ≥ 6,200 initial lumen output §130.2(b) ⁴	Field Inspector	
									Pass	Fail
pole	25 foot pole <input type="checkbox"/> Linear	150	Mfr. Spec ¹	10	New	<input type="checkbox"/>	1,500	Yes	<input type="checkbox"/>	<input type="checkbox"/>
Total Designed Watts:							1,500			
<p>* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved. EX: Luminaire is lightina a statue: EXCEPTION 2 to §130.2(b).</p>										

NRCC-SRA

F. ALLOCATED SOLAR ZONE									
<p><i>Table Instructions: Complete this table if the project is designating a solar zone to comply with §110.10(b)1B. For new construction consider total roof area; for additions consider newly added roof area.</i></p>									
Required Minimum Solar Zone									
01	02	03	04	05	06		07	08	
Minimum Solar Zone Area Calculation Method	Total New or Added Roof Area (ft ²)	Total New or Added Roof Area Covered with Skylights (ft ²)	Minimum Solar Zone Based on Total or Added Roof Area (0.15 x (Roof-Skylt)) (ft ²)	Method/Tool(s) Used to Determine Annual Solar Access for Potential Zones ¹	Potential Solar Zone Areas: Roof Areas with ≥ 70% Solar Access			Minimum Solar Zone Based on Potential Zone (0.5 x (Total Potential Zone)) (ft ²)	Required Minimum Solar Zone Area (ft ²)
					Low-Sloped Area (≤ 2:12 pitch) (ft ²)	Steep-Sloped Area (> 2:12 pitch), Oriented 90° - 300° (ft ²)	Total Potential Solar Zone Area (ft ²)		
Total New or Added Roof Area	8,790	850	1,191					1,191	



Tables F/? : Equipment/Technical Schedule

STATE OF CALIFORNIA

Domestic Water Heating System

NRCC-PLB-E (Created 11/19)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE

NRCC-PLB-E

Project Name:

Report Page: Page 2 of 5

Project Address:

Date Prepared:

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

No exceptional conditions apply to this project.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. DOMESTIC HOT WATER EQUIPMENT

Table Instructions: Complete the following table to demonstrate compliance with mandatory equipment requirements in §110.1 and §110.3. For high-rise residential and hotel/motel occupancies, compliance with prescriptive requirements in §150.1(c)8 must also be demonstrated and with §150.2 for addition and alteration scopes.

Equipment Schedule: Individual Systems

01	02	03	04	05	06
Name or Item Tag	Equipment Type	Volume (gal)	Max GPM/ First Hour Rating (FHR)	Rated Uniform Energy Factor (UEF)	Minimum Required Uniform Energy Factor (UEF) ¹
POU	Electric Instantaneous (≤ 12kW)	≤2	1.7 ≤ GPM <2.8	0.92	0.91
			Reset	Add Row	Remove Last

¹ FOOTNOTE: Compliant equipment may be found in the Modernized Appliance Efficiency Database System (MAEDBS) on the Energy Commission website: <https://cacertappliances.energy.ca.gov/Pages/Search/AdvancedSearch.aspx>

Water Heating Equipment All Occupancies

	Yes	No	Not Applicable	Requirement
18	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Unfired storage tank insulation shall have Internal + External ≥ R-16 OR External ≥ R-12. Label required per §110.3(c)3
19	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	New state buildings 60% of energy for service water heating from site solar energy or recovered energy per §110.3(c)5
20	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Isolation valves for instantaneous water heater with input rating > 6.8 kBTUH or 2 kW has been specified per §110.3(c)6



Tables F/? : Equipment/Technical Schedule

B. PROJECT SCOPE

Table Instructions: Include any illuminated signs that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.8 or §141.0(b)2M for alterations. Exit signs and traffic signs are not required to comply with prescriptive requirements per exceptions to §140.8 and do not need to complete this compliance document. WARNING: Changing the Compliance Method in this table will result in the deletion of data previously input. If you need to change the compliance method, please open a new form or use "Save As".

01	02	03	04	05
Name or Item Tag	Complete Sign Description	Sign Status ¹	Sign Type	Compliance Method ²
New	Business Name	New	Outdoor	Alternate Light Sources
Add Sign Lighting System				Max Allowed Lighting Power
				Alternate Light Sources
				ENERGY VERIFIED Label

F. MAXIMUM ALLOWED LIGHTING POWER AND CONTROLS

This Section Does Not Apply

G. LIGHT SOURCES AND CONTROLS

Table Instructions: Complete this table for illuminated signs using the Alternate Lighting Sources compliance method per §140.8(b) as indicated on Table B of this compliance document. Also demonstrate compliance with mandatory controls requirements from §130.3 by indicating control types for each sign.

01 Name or Item Tag	02 Complete Sign Description	03 Compliant Light Sources ¹	04 Mandatory Controls			05 Field Inspector	
			Shut-Off	Dimming	Demand Response ³	Pass	Fail
New	Business Name	LED + pwr supply 80%+ eff.	Other*	Pwr. reduced 65%+	NA	<input type="checkbox"/>	<input type="checkbox"/>
				Add Light Source	Remove last		
<p><i>*NOTE: Selections with a * require a note in the space below explaining how compliance is achieved. EX: Sign within tunnel illuminated day & night; EXCEPTION to §130.3(a)2A.</i></p>							
	New	EMCS being used					
							Reset

¹ FOOTNOTE: Dropdown choices have been abbreviated, please refer to §140.8(b) to confirm compliance with the specific light source technologies listed.

² Authority having jurisdiction may ask for cutsheets to confirm compliance of light source.

³ Demand response controls are only required for an Electronic Message Center having a new connected lighting power load greater than 15 kW per §110.12(d).

H. ENERGY VERIFIED LABELED SIGNS AND CONTROLS

This Section Does Not Apply



NRCI Table: Certificates of Installation

Typical NRCI Table

I. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION				
<p><i>Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/</i></p>				
YES	NO	Form/Title	Field Inspector	
			Pass	Fail
<input checked="" type="radio"/>		NRCI-PLB-01-E - Must be submitted for all buildings	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCI-PLB-02-E - Must be submitted for high-rise residential and hotel/ motel central hot water distribution systems to be recognized for compliance.	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="radio"/>	<input type="radio"/>	NRCI-PLB-03-E - Must be submitted for high-rise residential and hotel/ motel single dwelling unit hot water distribution systems to be recognized for compliance.	<input type="checkbox"/>	<input type="checkbox"/>

NRCC-CXR

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION	
<p><i>There are no Certificates of Installation applicable to commissioning requirements.</i></p>	



NRCA Table: Certificates of Acceptance

Typical NRCA Table

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: <http://www.energy.ca.gov/title24/attcp/providers.html>

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
<input type="radio"/>	<input checked="" type="radio"/>	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCA-LTI-05-A - Must be submitted for institutional tuning power adjustment factor (PAF).	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCA-ENV-03-F - Must be submitted for daylighting design power adjustment factors (PAF).	<input type="checkbox"/>	<input type="checkbox"/>

NRCC-ELC

K. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no Certificates of Acceptance applicable to electrical power distribution requirements.



NRCV Table: Certificates of Verification

NRCC-MCH

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be completed by a HERS Rater and provided to the building inspector during construction. The final documents must be created by a HERS Providers registry, but drafts can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCV/

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
<input type="radio"/>	<input checked="" type="radio"/>	NRCV-MCH-04-H Duct Leakage Test <i>NOTE: Must be completed by a HERS Rater</i>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCV-MCH-24 Enclosure Air Leakage Worksheet <i>NOTE: Must be completed by a HERS Rater</i>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCV-MCH-27 High-rise Residential <i>NOTE: Must be completed by a HERS Rater</i>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCV-MCH-32 Local Mechanical Exhaust <i>NOTE: Must be completed by a HERS Rater</i>	<input type="checkbox"/>	<input type="checkbox"/>

NRCC-PLB

K. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be completed by a HERS Rater and provided to the building inspector during construction. The final documents must be created by a HERS Providers registry, but drafts can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCV/

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
<input type="radio"/>	<input checked="" type="radio"/>	NRCV-PLB-21-H High-rise Residential Central Hot Water Distribution HERS Verification	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCV-PLB-22-H High-rise Residential Individual Dwelling Unit Hot Water Distribution HERS Verification	<input type="checkbox"/>	<input type="checkbox"/>



Signature Block

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Documentation Author Signature:
Company:	Signature Date:
Address:	CEA/ HERS Certification Identification (if applicable):
City/State/Zip:	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

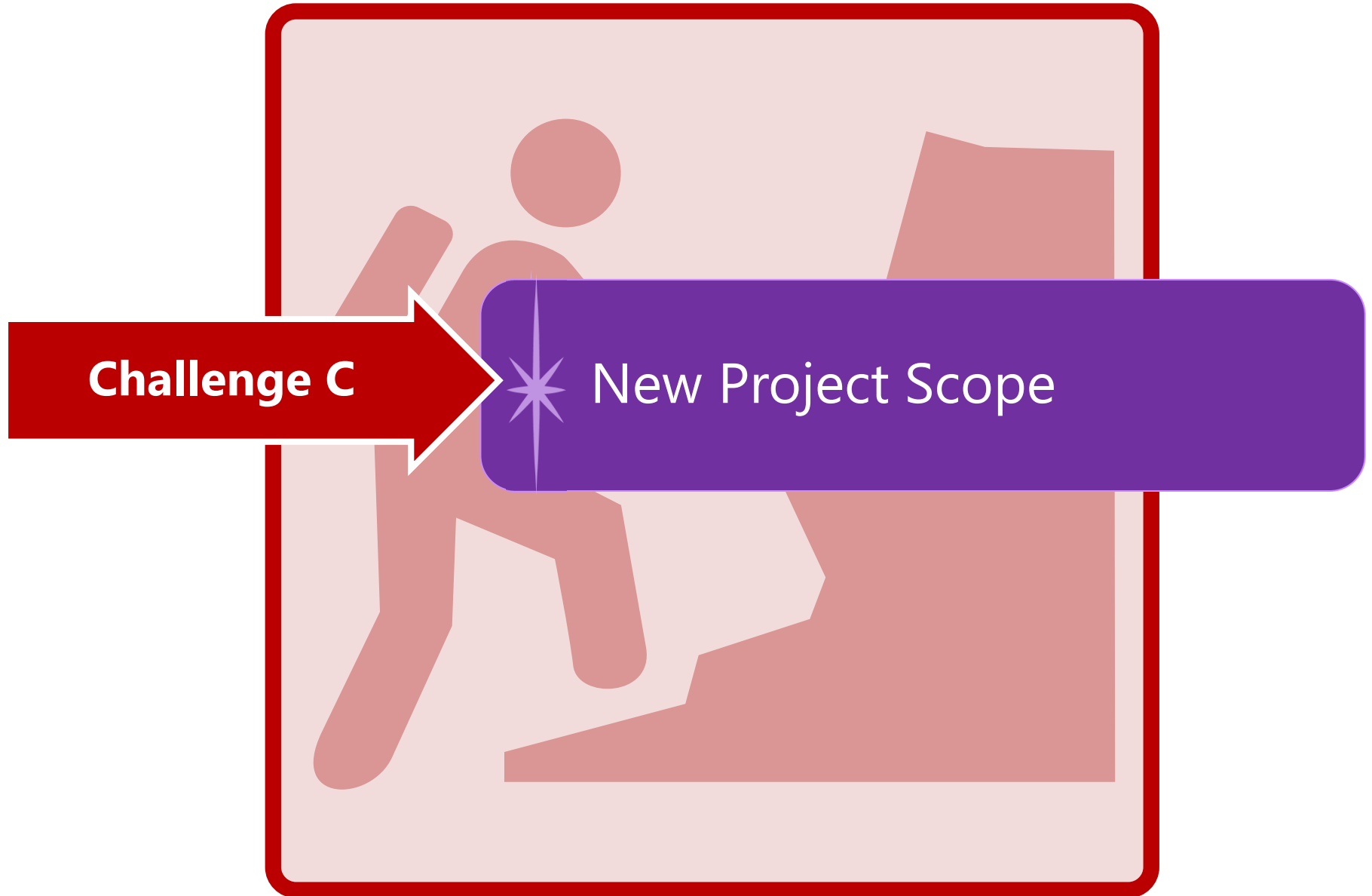
I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Responsible Designer Signature:
Company :	Date Signed:
Address:	License:
City/State/Zip:	Phone:



Challenge C





Example: New VRF Systems



New Variable Refrigerant Flow System to a Winery



NRCC-MCH-E: Gina's Way



Acrobat Document

STATE OF CALIFORNIA

Mechanical Systems

NRCC-MCH-E (Created 3/20)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE NRCC-MCH-E

This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.

Project Name: Example Winery	Report Page: Page 1 of 10
Project Address: Winery	Date Prepared: Today

A. GENERAL INFORMATION

01	Project Location (city)	Sonoma	04	Total Conditioned Floor Area	10,000
02	Climate Zone	2	05	Total Unconditioned Floor Area	5,000
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	2
<input type="checkbox"/> Office (B) <input type="checkbox"/> Retail (M) <input type="checkbox"/> Non-refrigerated Warehouse (S)					
<input type="checkbox"/> Hotel/ Motel Guest Rooms (R-1) <input type="checkbox"/> School (F) <input type="checkbox"/> Healthcare Facility (H)					
<input type="checkbox"/> High-Rise Residential (R-2/R-3) <input type="checkbox"/> Relocatable Class Bldg (E) <input checked="" type="checkbox"/> Other (Write In): Winery					

¹ FOOTNOTES: Climate zone can be determined on the California Energy Commission's website at http://www.energy.ca.gov/maps/renewable/building_climate_zones.html

B. PROJECT SCOPE

Table Instructions: Include any mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.

Project Scope must be defined before other sections of the NRCC-MCH expand for user input. Indicate whether heating and/or cooling systems, and controls are part of the permitted scope. Also indicate any system components included; these selections will open other applicable sections of the form.

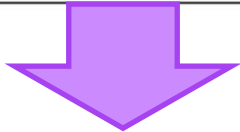
My project consists of (check all that apply)		
01	02	
Air System(s)	Wet System Components	Dry System Components
<input type="checkbox"/> Heating Air System	<input type="checkbox"/> Water Economizer	<input type="checkbox"/> Air Economizer
<input type="checkbox"/> Cooling Air System	<input type="checkbox"/> Pumps	<input type="checkbox"/> Electric Resistance Heat
<input type="checkbox"/> Mechanical Controls	<input type="checkbox"/> Hydronic System Piping	<input type="checkbox"/> Fan Systems
<input type="checkbox"/> Mechanical Controls	<input type="checkbox"/> Cooling Towers	<input type="checkbox"/> Ductwork
	<input type="checkbox"/> Chillers	<input type="checkbox"/> Ventilation
	<input type="checkbox"/> Boilers	<input type="checkbox"/> Zonal Systems/ Terminal Boxes

B. PROJECT SCOPE

Table Instructions: Include any mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.

My project consists of (check all that apply)

01	02	03
Air System(s)	Wet System Components	Dry System Components
<input type="checkbox"/> Heating Air System Furnace/Unit Heater	<input type="checkbox"/> Water Economizer Water-Side	<input type="checkbox"/> Air Economizer
<input type="checkbox"/> Cooling Air System Air Conditioning	<input type="checkbox"/> Pumps Chilled/heating/tertiary/condenser	<input type="checkbox"/> Electric Resistance Heat Per exceptions of 140.4(g)
Mechanical Controls	<input type="checkbox"/> Hydronic System Piping Heating/cooling	<input type="checkbox"/> Fan Systems Outside/transfer air, filter, DCV, Occ
<input type="checkbox"/> Mechanical Controls Thermostat, Shut-off, Isolation, Demand Response, Supply Air Temp. Reset, Window Interlocks	<input type="checkbox"/> Cooling Towers	<input type="checkbox"/> Ductwork Pipe insulation, HERS duct testing
	<input type="checkbox"/> Chillers Air/water cooled, absorption	<input type="checkbox"/> Ventilation Supply/return/exhaust/transfer/VAV
	<input type="checkbox"/> Boilers Gas/Oil Fired, steam	<input type="checkbox"/> Zonal Systems/ Terminal Boxes VAV box



Use for air sourced heating and/or cooling components

- ✦ Split DX / Mini-Split DX
- ✦ Packaged DX
- ✦ Variable Air Volume (VAV)
- ✦ Variable Refrigerant Flow (VRF)
- ✦ Packaged Terminal Units (PTAC/PTHP)
- ✦ Single Packaged Vertical Units (SPVAC/SPVHP)
- ✦ Tempered Dedicated Outside Air Systems (DOAS)

Use for built-up hydronic components

- ✦ Packaged DX with hot water heating (boiler)
- ✦ VAV with hydronic heating (boiler) and/or hydronic cooling (chiller/cooling tower)
- ✦ Two or Four pipe fan coil with boiler and/or chiller/cooling tower
- ✦ Hydronic heating (boiler)
- ✦ Chilled Beam (chiller/cooling tower)

Use for distribution, airside and electric resistance components

- ✦ Air Economizer for split and packaged DX, VAV, etc.
- ✦ Supply, return and exhaust air fans including VAV boxes, VRF indoor units and fan coil units
- ✦ Components used serving minimum ventilation outside air requirements
- ✦ Pipe insulation and HERS duct testing requirements



Example HVAC Systems

Rooftop Packaged DX with Economizer

B. PROJECT SCOPE ?		
<i>Table Instructions: Include any mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.</i>		
My project consists of (check all that apply)		
01	02	03
Air System(s)	Wet System Components	Dry System Components
<input checked="" type="checkbox"/> Heating Air System	<input type="checkbox"/> Water Economizer	<input checked="" type="checkbox"/> Air Economizer
<input checked="" type="checkbox"/> Cooling Air System	<input type="checkbox"/> Pumps	<input type="checkbox"/> Electric Resistance Heat
Mechanical Controls	<input type="checkbox"/> Hydronic System Piping	<input checked="" type="checkbox"/> Fan Systems
<input checked="" type="checkbox"/> Mechanical Controls	<input type="checkbox"/> Cooling Towers	<input checked="" type="checkbox"/> Ductwork
	<input type="checkbox"/> Chillers	<input checked="" type="checkbox"/> Ventilation
	<input type="checkbox"/> Boilers	<input type="checkbox"/> Zonal Systems/ Terminal Boxes

Packaged VAV with Hot Water Reheat

B. PROJECT SCOPE ?		
<i>Table Instructions: Include any mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.</i>		
https://www.energy.ca.gov/2018publications/CEC-400-2018-020/CEC-400-2018-020-CMF.pdf#page=254 Click to follow link		
My project consists of (check all that apply)		
	02	03
	Wet System Components	Dry System Components
<input checked="" type="checkbox"/> Heating Air System	<input type="checkbox"/> Water Economizer	<input checked="" type="checkbox"/> Air Economizer
<input checked="" type="checkbox"/> Cooling Air System	<input checked="" type="checkbox"/> Pumps	<input type="checkbox"/> Electric Resistance Heat
Mechanical Controls	<input checked="" type="checkbox"/> Hydronic System Piping	<input checked="" type="checkbox"/> Fan Systems
<input checked="" type="checkbox"/> Mechanical Controls	<input type="checkbox"/> Cooling Towers	<input checked="" type="checkbox"/> Ductwork
	<input type="checkbox"/> Chillers	<input checked="" type="checkbox"/> Ventilation
	<input checked="" type="checkbox"/> Boilers	<input checked="" type="checkbox"/> Zonal Systems/ Terminal Boxes



NRCC-MCH-E: Gina's Way

B. PROJECT SCOPE ?		
<i>Table Instructions: Include any mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, or §141.0(b)2 for alterations.</i>		
My project consists of (check all that apply)		
01	02	03
Air System(s)	Wet System Components	Dry System Components
<input checked="" type="checkbox"/> Heating Air System	<input type="checkbox"/> Water Economizer	<input checked="" type="checkbox"/> Air Economizer ?
<input checked="" type="checkbox"/> Cooling Air System	<input type="checkbox"/> Pumps	<input type="checkbox"/> Electric Resistance Heat
Mechanical Controls	<input type="checkbox"/> Hydronic System Piping	<input checked="" type="checkbox"/> Fan Systems
<input checked="" type="checkbox"/> Mechanical Controls	<input type="checkbox"/> Cooling Towers	<input checked="" type="checkbox"/> Ductwork
	<input type="checkbox"/> Chillers	<input checked="" type="checkbox"/> Ventilation
	<input type="checkbox"/> Boilers	<input type="checkbox"/> Zonal Systems/ Terminal Boxes

- ✦ (1) Outdoor Unit:
 - Heating:
 - Total Output: 270,000 BTUH
 - Efficiency: 3.7 COP
 - Cooling
 - Total/Sensible Output: 240,000 BTUH
 - Efficiency: 12.2 EER/21.9 IEER
- ✦ (10) 2 ton Indoor Units
- ✦ (1) DOAS with 3,000 CFM at 3 BHP



NRCC-MCH-E: Gina's Way

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Table Instructions: Complete the following equipment schedules to show compliance with mandatory requirements found in §110.1 and §110.2(a) and prescriptive requirements found in §140.4(a), §140.4(b) and §140.4(k) or §141.0(b)2 for alterations.

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters)

01	02	03	04	05	06	07	08	09	10	11
Name or Item Tag	Equipment Category per Tables 110.2	Equipment Type per Tables 110.2 & Title 20	Smallest Size Available ¹ §140.4(a)	Equipment Sizing per Mechanical Schedule (Btu/h) §140.4 (a&b)						
				Heating Output ^{2,3}			Cooling Output ^{2,3}		Load Calculations ^{3,4}	
				Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
Outside	Variable Refrigerant Flow		Yes	270	270	0	240	240	220	235
				Reset		Add Row		Remove Last		

¹ FOOTNOTES:
² It is common to use the design heating and cooling loads of the equipment line, necessary to meet the design heating and cooling loads of the building.
³ If equipment is not specified, the design heating and cooling loads of the equipment line, necessary to meet the design heating and cooling loads of the building, shall be used.
⁴ Authority having jurisdiction (AHJ) approval is required for load calculations used for compliance with §140.4(a).

Unitary AC/ Condenser
 Unitary heat pumps
 PTAC/ PTHP
 SPVAC/ SPVHP
Variable Refrigerant Flow
 Furnace/ Unit heater
 Computer Room AC
 Heat Pump + AC

VRF air conditioners, air cooled
 VRF heat pump, air cooled
 VRF water source
 VRF groundwater source
 VRF ground source

Yes
 NA: Standby Equip.
 NA: Load Controls
 NA: Altered per §140.4(a)
 NA: System serves Healthcare



NRCC-MCH-E: Gina's Way

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP))								
01	02	03	04	05	06	07	08	09
Name or Item Tag	Size Category (Btu/h)	Heating Mode			Cooling Mode			
		Rating Condition (°F)	Efficiency Unit	Min Efficiency Required per Tables 110.2/ Title 20	Design Efficiency	Efficiency Unit	Min Efficiency Required per Tables 110.2/ Title 20	Design Efficiency
Outside	≥240,000		COP	3.2	3.7	EER	9.5	12.2
	IEER					12.7	21.9	
<65,000 ≥65,000 and <135,000 ≥135,000 and <240,000 ≥240,000		47°Fdb/43°Fwb OSA 17°Fdb/15°Fwb OSA		Reset				

C. COMPLIANCE RESULTS															
Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.															
01	02	03	04	05	06	07	08	09							
System Summary §110.1 , §110.2 , §140.4	AND	Pumps §140.4(k)	AND	Fans/ Economizers §140.4(c) , §140.4(e)	AND	System Controls §110.2 , §120.2 , §140.4(f)	AND	Ventilation §120.1	AND	Terminal Box Controls §140.4(d)	AND	Distribution §120.3 , §140.4(l)	AND	Cooling Towers §110.2(e)2	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)	
Yes	AND		AND		AND		AND		AND		AND		AND		
Mandatory Measures Compliance (See Table Q for Details)															





NRCC-MCH-E: Gina's Way

H. FAN SYSTEMS & AIR ECONOMIZERS

Table Instructions: Complete the following Table for fan systems to demonstrate compliance with prescriptive requirements found in §140.4(c), §140.4(e) and §140.4(m). First document the system details, then add fans within that system to document compliance with fan power requirements. Fan systems serving healthcare facilities, or those serving only process loads, are exempt from these requirements and do not need to be included in Table H.

System Name:	Indoor	Economizer: ¹	NA: ≤ 54 kBtu/h cooling	Economizer Controls:	System Fan Type:	Variable Air Volume	
01	02			05	06	07	
Fan Name or Item Tag	Fan Function		Fixed Temperature Fixed Enthalpy Differential Temperature Differential Enthalpy Waterside Economizer (See NA: ≤ 54 kBtu/h cooling NA: Special OA filtration NA: High-rise res/hotel/mo	P Unit ²	Design HP	Fan Power Pressure Drop Adj	Constant Volume Variable Air Volume
Indoor	Supply			BHP	0.4	None used	
						None used	Remove Last Pressure Drop Adj. Device
DOAS	Supply Return Exhaust Other (Transfer, VAV box)	1	3,000	BHP	3	Fully ducted return/ exhaust Systems maintaining pressure Return/ exhaust airflow contr Exhaust filters, scrubbers, trea MERV 16 or greater/ electron Carbon/ gas-phase air cleaner Biosafety cabinet	Remove Last Pressure Drop Adj. Device Remove Last Fan

Table Continued

Total System Design Supply Airflow (CFM):	6,000	Total System Design (B)HP:	7	Maximum System Fan Power (B)HP:	7.8
---	-------	----------------------------	---	---------------------------------	-----

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

01	AND	02	AND	03	AND	04	AND	05	AND	06	AND	07	AND	08	AND	09
System Summary §110.1, §110.2, §140.4 (See Table F)		Pumps §140.4(k) (See Table G)		Fans/ Economizers §140.4(c), §140.4(e) (See Table H)		System Controls §110.2, §120.2, §140.4(f) (See Table I)		Ventilation §120.1 (See Table J)		Terminal Box Controls §140.4(d) (See Table K)		Distribution §120.3, §140.4(l) (See Table L)		Cooling Towers §110.2(e)2 (See Table M)		Compliance Results
	AND		AND	Yes	AND		AND		AND		AND		AND			
Mandatory Measures Compliance (See Table Q for Details)																



NRCC-MCH-E: Gina's Way


I. SYSTEM CONTROLS

Table Instructions: Complete the following Table to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n) or requirements in §141.0(b)2E for altered space conditioning systems.

01	02	03	04	05	06	07	08	09
System Name	System Zoning	Conditioned Floor Area Being Served (ft ²)	Thermostats §110.2(b) & (c) ¹ , §120.2(a) or §141.0(b)2E	Shut-Off Controls §120.2(e)	Isolation Zone Controls §120.2(g)	Demand Response §110.12 and §120.2(b)	Supply Air Temp. Reset §140.4(f)	Window Interlocks per §140.4(n)
VRF	multi-zone w/	≤ 25,000 ft ²	EMCS	EMCS	EMCS	EMCS	Included	P
¹ FOOTNOTES: Gr... required to have s... * NOTES: Controls... EX: System 1: SA Temp Reset: Exempt...		single zone ≤ 25,000 ft ² multi-zone > 25,000 ft ² NA: Altered per §...	Setback Thermostat EMCS Setback + DR Tstat per §1... NA: Eq. type per §110.2(c)	Auto Timeswi... Occ. Sensor 4 Hour Timer EMCS Card Key (hot... Other* NA: 7 day per... NA: Altered p...	Auto Timeswi... Occ. Sensor 4 Hour Timer EMCS Other* NA: Continuo... NA: Altered p... NA: Single Zon...	EMCS DR Tstat per §110.12 Other* NA: PTAC, PTHP, Rm AC, ... NA: Healthcare only	Included NA: Alteration NA: Single Zone NA: Healthcare d... Exempt*	NA: NA: NA: NA: NA: NA:

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

01	02	03	04	05	06	07	08	09							
System Summary §110.1, §110.2, §140.4	AND	Pumps §140.4(k)	AND	Fans/ Economizers §140.4(c), §140.4(e)	AND	System Controls §110.2, §120.2, §140.4(f)	AND	Ventilation §120.1	AND	Terminal Box Controls §140.4(d)	AND	Distribution §120.3, §140.4(l)	AND	Cooling Towers §110.2(e)2	Compliance Results
(See Table F)	(See Table G)	(See Table H)	(See Table I)	(See Table J)	(See Table K)	(See Table L)	(See Table M)								
AND	AND	AND	AND	AND	AND	AND	AND	AND							
									Mandatory Measures Compliance (See Table Q for Details)						



NRCC-MCH-E: Gina's Way

Nonresidential and Hotel/ Motel Ventilation Systems

04		05			06			07	
System Name:	VRF	System Design OA CFM Air Flow ¹ :	3,000		System Design Transfer Air CFM:	0		Air Filtration per §120.1(c) and §141.0(b)2 Provided per §120.1(c) (NR & Hotel/Motel)	
08	09	10	11	12	13	14	15	16	
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3 ²				Exh. Vent. per §120.1(c)4			DCV or Occupant Sensor Controls per §120.1(d)3 , §120.1(d)5 & §120.2(e)3 ⁶	
	Occupancy Type ⁴	Conditioned Floor Area (ft ²)	# of showerheads/toilets	# of people ⁵	Required Min OA CFM	Required Minimum CFM	Provided per Design CFM		
Sales	Retail sales	8,000			2,000			DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
Offices	Office space	800			120			DCV	NA: Not required per §120.1(d)3
								Occ Sensor	Provided per §120.1(d)5
Bathrooms	Toilet (public)- cont. exh.	1,200	10		180	500	500	DCV	NA: Not required per §120.1(d)3
								Occ Sensor	NA: Not required space type
					Reset		Add Occupancy Type	Remove Last	
17	Total System Required Min OA CFM		2,300		18	Ventilation for this System Complies?			Yes
					Reset		Add System	Remove Last	
					Reset		Add Occupancy Type	Remove Last	
17	Total System Required Min OA CFM				18	Ventilation for this System Complies?			
					Reset		Add System	Remove Last	





NRCC-MCH-E: Gina's Way

J. VENTILATION AND INDOOR AIR QUALITY

Table Instructions: Complete the following Table to demonstrate compliance with mandatory ventilation requirements in [§120.1](#) and [§120.2\(e\)3B](#) for all nonresidential, high-rise residential and hotel/motel occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	<input type="checkbox"/>	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	<input type="checkbox"/>	Check this box if the project includes new or altered high-rise residential dwelling units.
03	<input type="checkbox"/>	Check the box if the project is using natural ventilation in any spaces to meet required ventilation rates per §120.1(c)2 .

J. VENTILATION AND INDOOR AIR QUALITY

Table Instructions: Complete the following Table to demonstrate compliance with mandatory ventilation requirements in [§120.1](#) and [§120.2\(e\)3B](#) for all nonresidential, high-rise residential and hotel/motel occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	<input checked="" type="checkbox"/>	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	<input type="checkbox"/>	Check this box if the project includes new or altered high-rise residential dwelling units.
03	<input type="checkbox"/>	Check the box if the project is using natural ventilation in any spaces to meet required ventilation rates per §120.1(c)2 .

Table Continued

Nonresidential and Hotel/ Motel Ventilation Systems												
04			05				06			07		
System Name:			System Design OA CFM Air Flow ¹ :				System Design Transfer Air CFM:			Air Filtration per §120.1(c) and §141.0(b)2 ²		
08	09		10	11	12	13	14	15	16			
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3 ³					Exh. Vent. per §120.1(c)4			DCV or Occupant Sensor Controls per §120.1(d)3 , §120.1(d)5 & §120.2(e)3 ⁶			
	Occupancy Type ⁴	Conditioned Floor Area (ft ²)	# of showerheads/toilets	# of people ⁵	Required Min OA CFM	Required Minimum CFM	Provided per Design CFM					
											DCV	
											Occ Sensor	
							Reset	Add Occupancy Type	Remove Last			
17	Total System Required Min OA CFM					18	Ventilation for this System Complies?					
							Reset	Add System	Remove Last			



NRCC-MCH-E: Gina's Way

L. DISTRIBUTION (DUCTWORK AND PIPING) ?

Table Instructions: Complete the following tables to show compliance with mandatory pipe insulation requirements found in [§120.3](#) and prescriptive requirements found in [§140.4\(l\)](#) for duct leakage testing.

Duct Leakage Sealing

The answers to the questions below apply to the following duct system(s):		DOAS	Duct leakage testing triggered for these systems?	No
11	No <input type="checkbox"/>	The scope of the project includes only duct systems serving healthcare facilities.		
12	No <input type="checkbox"/>	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.		
13	No <input type="checkbox"/>	The space conditioning system serves less than 5,000 ft ² of conditioned floor area.		
14	No <input type="checkbox"/>	The <u>combined</u> surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system:		
	<input type="checkbox"/>	Outdoors		
	<input type="checkbox"/>	In a space directly under a roof that has a U-factor greater than the U-factor of the ceiling, or if the roof does not meet the requirements of §140.3(a)1B or if the roof has fixed vents or openings to the outside/ unconditioned spaces		
	<input type="checkbox"/>	In an unconditioned crawlspace		
	<input type="checkbox"/>	In other unconditioned spaces		
15	No <input type="checkbox"/>	The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.		
16	No <input type="checkbox"/>	The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2 .		
17		Duct system shall be sealed in accordance with the California Mechanical Code.		

C. COMPLIANCE RESULTS ?

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

01	AND	02	AND	03	AND	04	AND	05	AND	06	AND	07	AND	08	09
System Summary §110.1 , §110.2 , §140.4 (See Table F)		Pumps §140.4(k) (See Table G)		Fans/ Economizers §140.4(c) , §140.4(e) (See Table H)		System Controls §110.2 , §120.2 , §140.4(f) (See Table I)		Ventilation §120.1 (See Table J)		Terminal Box Controls §140.4(d) (See Table K)		Distribution §120.3 , §140.4(l) (See Table L)		Cooling Towers §110.2(e)2 (See Table M)	Compliance Results
	AND		AND		AND		AND		AND		AND	Yes <input checked="" type="checkbox"/>	AND		
Mandatory Measures Compliance (See Table Q for Details)															



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C. COMPLIANCE RESULTS															
Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.															
01		02		03		04		05		06		07		08	09
System Summary §110.1 , §110.2 , §140.4	AND	Pumps §140.4(k)	AND	Fans/ Economizers §140.4(c) , §140.4(e)	AND	System Controls §110.2 , §120.2 , §140.4(f)	AND	Ventilation §120.1	AND	Terminal Box Controls §140.4(d)	AND	Distribution §120.3 , §140.4(l)	AND	Cooling Towers §110.2(e)2	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)	
Yes	AND		AND	Yes	AND	Yes	AND	Yes	AND		AND	Yes	AND		COMPLIES
Mandatory Measures Compliance (See Table Q for Details) DOES NOT COMPLY															

D. EXCEPTIONAL CONDITIONS
This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.
Please review Table F for compliance: all fields which are not grey must be completed; design or rated efficiency must be greater than or equal to the minimum efficiency required.

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP))								
01	02	03	04	05	06	07	08	09
Name or Item Tag	Size Category (Btu/h)	Rating Condition (°F)	Heating Mode			Cooling Mode		Design Efficiency
			Efficiency Unit	Min Efficiency Required per Tables 110.2/ Title 20	Design Efficiency	Efficiency Unit	Min Efficiency Required per Tables 110.2/ Title 20	
Outside	≥240,000	47°Fdb/43°Fwb OSA		3.2	4	EER	9.5	
						IEER	12.7	
								Reset



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C. COMPLIANCE RESULTS															
Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.															
01	AND	02	AND	03	AND	04	AND	05	AND	06	AND	07	AND	08	09
System Summary §110.1 , §110.2 , §140.4		Pumps §140.4(k)		Fans/ Economizers §140.4(c) , §140.4(e)		System Controls §110.2 , §120.2 , §140.4(f)		Ventilation §120.1		Terminal Box Controls §140.4(d)		Distribution §120.3 , §140.4(l)		Cooling Towers §110.2(e)2	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)	
Yes	AND		AND	Yes	AND	Yes	AND	Yes	AND		AND	Yes	AND		
Mandatory Measures Compliance (See Table Q for Details)															COMPLIES

Q. MANDATORY MEASURES DOCUMENTATION LOCATION		
Table Instructions: Indicate where mandatory measures are documented in the plan set or construction documentation. For any mandatory measures that do not apply, mark the plan sheet or construction document location as "N/A", any active cells that are left blank will result in non-compliance in Table C.		
01	02	
	Plan sheet or construction document location	
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block:	Yes	M-1

Q. MANDATORY MEASURES DOCUMENTATION LOCATION		
Table Instructions: Indicate where mandatory measures are documented in the plan set or construction documentation. For any mandatory measures that do not apply, mark the plan sheet or construction document location as "N/A", any active cells that are left blank will result in non-compliance in Table C.		
01	02	
	Plan sheet or construction document location	
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block:	No	
03	04	
Mandatory Measure	Plan sheet or construction document location	
Heating Equipment Efficiency per §110.1	M-1	
Cooling Equipment Efficiency per §110.1	M-1	
Furnace Standby Loss Control per §110.2(d)	N/A	
Duct Insulation per §120.4	N/A	
Heating Hot Water Equipment Efficiency per §110.1	N/A	
Cooling Chilled and Condenser Water Equipment Efficiency per §110.1	N/A	
Open and Closed Circuit Cooling Towers conductivity of flow-based controls per §110.2(e)1	N/A	
Open and Closed Circuit Cooling Towers Flow Meter with analog output per §110.2(e)3	N/A	
Open and Closed Circuit Cooling Towers Overflow Alarm per §110.2(e)4	N/A	
Open and Closed Circuit Cooling Towers Efficient Drift Eliminators per §110.2(e)5	N/A	
Pipe Insulation per §120.3(b)	P-1	
Combustion air shutoff, combustion air fan controls and stack design and controls for boilers per §120.9	N/A	
Heat Pump with Supplementary Electric Resistance Heater Controls per §110.2(b)	N/A	
The air duct and plenum system is designed per §120.4(a)-(f)	M-1	
Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2	N/A	



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STATE OF CALIFORNIA

Mechanical Systems

NRCC-MCH-E (Created 3/20)

CALIFORNIA ENERGY COMMISSION 

CERTIFICATE OF COMPLIANCE

NRCC-MCH-E

Project Name: Example Winery	Report Page:	Page 6 of 10
Project Address: Winery	Date Prepared:	Today

⁴ See [Standards Tables 120.1-A and 120.1-B](#).

⁵ For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.

⁶ [§120.2\(e\)3](#) requires systems serving rooms that are required by [§130.1\(c\)](#) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft² or smaller, multipurpose rooms less than 1,000ft², classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by [§130.1\(c\)](#).

K. TERMINAL BOX CONTROLS

This Section Does Not Apply

L. DISTRIBUTION (DUCTWORK AND PIPING)

This Section Does Not Apply

M. COOLING TOWERS

This Section Does Not Apply

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
<input checked="" type="radio"/>	<input type="radio"/>	NRCI-MCH-01-E - Must be submitted for all buildings.	<input type="checkbox"/>	<input type="checkbox"/>

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/

YES	NO	Form/Title	Field Inspector	
			Pass	Fail



NRCC-MCH-E: Gina's Way

STATE OF CALIFORNIA

Mechanical Systems

NRCC-MCH-E (Created 3/20)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE

NRCC-MCH-E

Project Name: Example Winery

Report Page:

Page 7 of 10

Project Address: Winery

Date Prepared:

Today

<input checked="" type="radio"/>	<input type="radio"/>	NRCA-MCH-02-A Outdoor Air must be submitted for all newly installed HVAC units. <i>Note: MCH02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap.</i>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCA-MCH-03-A Constant Volume Single Zone HVAC NOTE: This form does not automatically move to "Yes". If Constant Volume Single Zone HVAC Systems are included in the scope, permit applicant should move this form to "Yes".	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCA-MCH-04-A Air Distribution Duct Leakage	<input type="checkbox"/>	<input type="checkbox"/>

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

Selections made in Table O have been changed by the permit applicant. See Table E. Additional Remarks for permit applicant's explanation.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

NRCA-MCH-20 not required since this is not a multifamily occupancy

<input type="radio"/>	<input checked="" type="radio"/>	NOTE: This form does not automatically move to "Yes". If Distributed Energy Storage or AC systems are included in the scope, permit applicant should move this form to "Yes".	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCA-MCH-15-A Thermal Energy Storage (TES) System Acceptance NOTE: This form does not automatically move to "Yes". If Chilled Water Storage, Ice-on-Coil Internal Melt, Ice-on-Coil External Melt, Ice Harvester, Brine, Ice-Slurry, Eutectic Salt, Clathrate Hydrate Slurry (CHS), Cryogenic or Encapsulated (Ice Ball) Systems are included in the scope, permit applicant should move this form to "Yes".	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="radio"/>	<input type="radio"/>	NRCA-MCH-16-A Supply Air Temperature Reset Controls	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCA-MCH-17-A Condenser Water Temperature Reset Controls	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="radio"/>	<input type="radio"/>	NRCA-MCH-18 Energy Management Control Systems	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="radio"/>	<input type="radio"/>	NRCA-MCH-19 Occupancy Sensor Controls	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCA-MCH-20 Multi-Family Ventilation	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCA-MCH-21 Multi-Family Envelope Leakage	<input type="checkbox"/>	<input type="checkbox"/>



NRCC-MCH-E: Gina's Way

STATE OF CALIFORNIA

Mechanical Systems

NRCC-MCH-E (Created 3/20)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE

NRCC-MCH-E

Project Name: Example Winery

Report Page:

Page 8 of 10

Project Address: Winery

Date Prepared:

Today

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be completed by a HERS Rater and provided to the building inspector during construction. The final documents must be created by a HERS Providers registry, but drafts can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCV/

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
<input type="radio"/>	<input checked="" type="radio"/>	NRCV-MCH-04-H Duct Leakage Test <i>NOTE: Must be completed by a HERS Rater</i>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCV-MCH-24 Enclosure Air Leakage Worksheet <i>NOTE: Must be completed by a HERS Rater</i>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCV-MCH-27 High-rise Residential <i>NOTE: Must be completed by a HERS Rater</i>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="radio"/>	<input checked="" type="radio"/>	NRCV-MCH-32 Local Mechanical Exhaust <i>NOTE: Must be completed by a HERS Rater</i>	<input type="checkbox"/>	<input type="checkbox"/>



NRCC-MCH-E: Gina's Way

STATE OF CALIFORNIA

Mechanical Systems

NRCC-MCH-E (Created 3/20)

CALIFORNIA ENERGY COMMISSION 

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E	
Project Name: Example Winery	Report Page:	Page 10 of 10	
Project Address: Winery	Date Prepared:	Today	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Gina Rodda	Documentation Author Signature: Gina Rodda	<small>Digitally signed by Gina Rodda Date: 2020.03.24 14:53:28 -07'00'</small>	
Company: Gabel Energy	Signature Date: 3/24/2020		
Address: 20825 Nunes Ave	CEA/ HERS Certification Identification (if applicable): NR16-04-20035		
City/State/Zip: Castro Valley CA 94546	Phone: 510-428-0803		

RESPONSIBLE PERSON'S DECLARATION STATEMENT

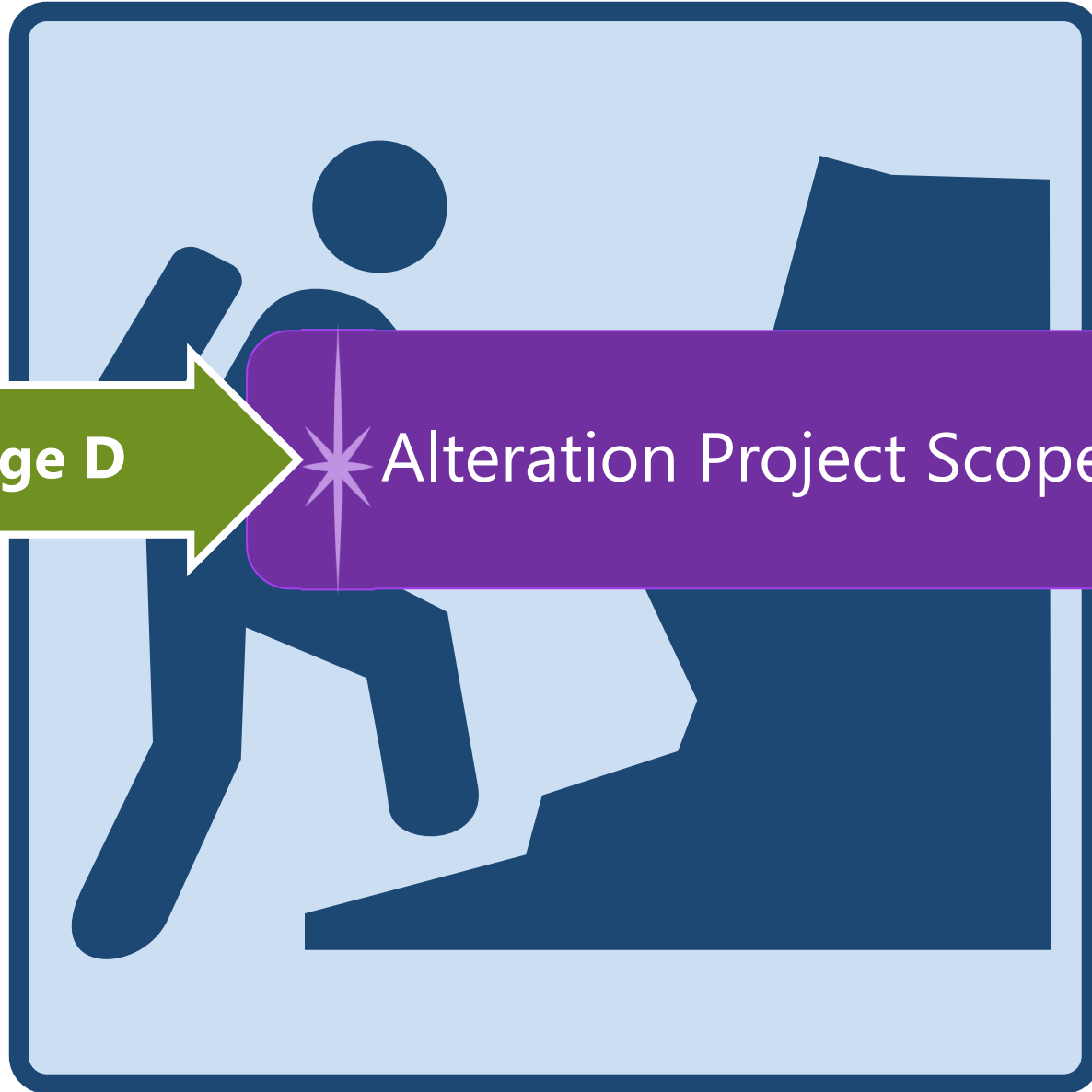
I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Responsible Designer Signature:
Company :	Date Signed:
Address:	License:
City/State/Zip:	Phone:



Challenge D



Challenge D

Alteration Project Scope



Example: Envelope Alteration



✦ **Replace Windows**



New Roof

✦ **Open Walls**



NRCC-ENV-E: Gina's Way

STATE OF CALIFORNIA

Envelope Component Approach

NRCC-ENV-E (Created 11/19)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE

NRCC-ENV-E

This document is used to demonstrate compliance with mandatory requirements in [§110.8\(g\)](#) and [§120.7\(b\)](#) for newly constructed buildings, and [§141.0\(b\)1](#) for alterations, related to roof, wall and floor assemblies. It is also used to demonstrate compliance with prescriptive requirements in [§140.3](#) for newly constructed buildings, and [§141.0](#) for additions and alterations, related to roof, wall, floor, door, fenestration and daylighting requirements.

Project Name: Example: Envelope	Report Page: Page 1 of 4
Project Address: Example	Date Prepared:

A. GENERAL INFORMATION				
01	Project Location (city)	Example	05 # of Stories (Habitable Above Grade) 2	
02	Zipcode	90000	06 Total Conditioned Floor Area (ft ²) 10,000	
03	Climate Zone	3	07 Total Unconditioned Floor Area (ft ²) 0	
04	Occupancy Types Within Project (select all that apply): If one occupancy constitutes ≥ 80% of the conditioned floor area, the entire building envelope may be designed to comply with the provisions of that occupancy per §100.0(f) .		08 <input type="checkbox"/> Project includes unconditioned enclosed space(s) > 5,000ft ² under a roof with a ceiling height of at least 15ft. ¹	
<input checked="" type="checkbox"/> All Nonresidential, including Relocatable Public School Building certified for use in one climate zone Occupancy: A / B / E / F / H / M / S / U		<input type="checkbox"/> Relocatable Public School Building for use in all climate zones Occupancy: E	<input type="checkbox"/> High-Rise Residential Occupancy: R-2 / R-3	<input type="checkbox"/> Hotel/Motel Guest Rooms Occupancy: R-1

¹ FOOTNOTE: Enclosed spaces > 5,000 ft² directly under roof with ceiling height > 15ft in climate zones 2 through 15 are required to meet the minimum daylighting requirements defined in [§140.3\(c\)](#). Compliance with [§140.3\(c\)](#) is documented in Table L. This is the only prescriptive requirement which applies to unconditioned spaces.



NRCC-ENV-E Gina's Way

B. PROJECT SCOPE			
<i>Table Instructions:</i> Include any building envelopes that are within the scope of the permit application and are demonstrating compliance using the prescriptive paths outlined in §140.3, and §141.0(a)1 and §141.0(b)1 and 2 for additions and alterations.			
My project consists of (check all that apply)		Component Types	
01	02		
<input type="checkbox"/> New Construction or Newly Conditioned Space <input type="checkbox"/> One or more enclosed spaces > 5,000 ft ² directly under roof with ceiling height > 15ft	<input type="checkbox"/> Roof	<input type="checkbox"/> Walls <input type="checkbox"/> Floors	<input type="checkbox"/> Exterior Doors <input type="checkbox"/> Fenestration/Glazed Door ¹
<input type="checkbox"/> Addition of conditioned space <input type="checkbox"/> One or more enclosed spaces > 5,000 ft ² directly under roof with ceiling height > 15ft	<input type="checkbox"/> Roof	<input type="checkbox"/> Walls <input type="checkbox"/> Floors	<input type="checkbox"/> Exterior Doors <input type="checkbox"/> Fenestration/Glazed Door ¹
<input type="checkbox"/> Alteration of conditioned space <input type="checkbox"/> One or more enclosed spaces > 5,000 ft ² directly under roof with ceiling height > 15ft and lighting system installed for the first time	<input type="checkbox"/> Roof Assembly <input type="checkbox"/> Roofing Material	<input type="checkbox"/> Walls <input type="checkbox"/> Floors	Exterior Doors NA for Alts. <input type="checkbox"/> Fenestration

Pick all features that apply

- ✦ *Example:* New free standing 2 story conditioned building
 - ✦ Roof + Walls + Floors + Exterior Doors + Fenestration

Pick all features that apply

- ✦ *Example:* Adding second floor to existing building:
 - ✦ Roof + Walls + Fenestration
- ✦ *Example:* Adding 2 story addition and replacing windows in existing conditioned building:
 - ✦ Roof + Walls + Floors + Fenestration + **alteration feature "fenestration"**

Pick all features that apply

- ✦ *Example:* Reroof:
 - ✦ Roof Assembly + Roofing Material
- ✦ *Example:* Openings walls and replacing windows:
 - ✦ Walls + Fenestration



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F. ROOF ASSEMBLY SCHEDULE

Table Instructions: Complete this table to demonstrate compliance with prescriptive roof assembly requirements in [§140.3\(a\)1B](#) for new construction or additions, or [§141.0\(b\)2Biii](#) for alterations.

01	Indicate roof types included in the project:	<input type="checkbox"/> Framed	<input type="checkbox"/> SIPs	<input checked="" type="checkbox"/> Span Deck & Concrete	<input type="checkbox"/> Metal Panels	<input type="checkbox"/> Metal Building
----	--	---------------------------------	-------------------------------	--	---------------------------------------	---

Span Deck & Concrete Roof Assemblies

01	<input type="checkbox"/>	Include Span Deck & Concrete Roof assemblies in Area-Weighted Average U-factor Calculation ¹						
02	03	04	05		06			
Tag / Plan Detail ID	Name / Description	Status	Exception to Roof Insulation Requirements in §141.0(b)2Biii (Alts. Only)		Occupancy Type			
Roof	flat roof	Altered	Mechanical equipment will not be lifted as part of the roof replacement, insu		Nonresidential/ Relocat			
		New	Existing roof is insulated with at least R-7 or has a U-factor lower than 0.089		Nonresidential/ Relocat			
		Altered	Mechanical equipment will not be lifted as part of the roof replacement, Adding required insulation will reduce base flashing height to less than 8 inches.		Nonresidential/ Relocatable 1 CZ			
			None of these exceptions apply		Relocatable air CZ			
07	08	09	Concrete Topping Thickness (in)	Insulation per Design	Performance Unit	Thermal Performance ²	U-factor per Design	Net Area ³ (ft ²)
Tag / Plan Detail ID	How Design U-factor was determined	Fireproofing						
Roof				R-			per JA4 per Software/ Other	

¹ FOOTNOTE: If any individual assembly is non-compliant, assemblies may show compliance using an area-weighted calculation. Metal building roofs may not be combined with other roof types. The area-weighted compliance option is not available for alterations demonstrating compliance with R-values in [Table 141.0-C](#).

² If "R-value" is shown in cell 12 as the Thermal Performance Unit, the R-value shown here is for continuous insulation per [Table 141.0-C](#).

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Opaque Envelope Components					Fenestration	Daylighting Spaces > 5,000 ft ²	Compliance Results
Roof Assembly	Roofing Materials	Walls	Floors	Doors			
01	02	03	04	05	06	07	08
(See Table F)	(See Table G)	(See Table H)	(See Table I)	(See Table J)	(See Table K)	(See Table L)	
Yes	Yes	No			No		DOES NOT COMPLY





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G. RATED ROOFING MATERIAL (COOL ROOF)						
Table Instructions: Complete this table to demonstrate compliance with prescriptive roof material requirements in §140.3(a)1A for new construction or additions, or §141.0(b)2B for alterations.						
01	02	03	04	05	06	07
Tag / Plan Detail ID	Name / Description / Location	Status	Occupancy Type	Roof Slope	Roof Material	Compliance Method
new roof	Single Ply - White	Altered	Nonresidential/ Re	≤ 2:12 (Low)	Single-Ply	Solar Reflectance (Aged)/
		New	Nonresidential/ Relc	≤ 2:12 (Low)	Aggregate or Ballast	Solar Reflectance (Initial)/ E
		Altered	High-rise Res/ Hotel, Relocatable all CZ	> 2:12 (Steep)	Bitumen	Solar Reflectance (Aged)/ E
				Material Performance	Field-Applied Coating	Solar Reflectance Index (SR
				Reflectance	Fluid-Applied Membrane	U-factor Trade-off per Table
				Emittance	Metal	NA: Roof-integrated PV or S
				SRI	Metal Shake or Shingle	NA: Weight ≥ 25lb/ft ² over
					Paver	NA: < 50% roof area & < 2,C
					Polymer or Composite	NA: Demising Roof
					Single-Ply	

**FOOTNOTE: If Solar Reflectance (Initial) is indicated in column 07, enter the Initial Reflectance here and the form will convert it to a "Calculated Aged Solar Reflectance" when determining compliance.*

C. COMPLIANCE RESULTS							
Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.							
Opaque Envelope Components					Fenestration	Daylighting Spaces > 5,000 ft ²	Compliance Results
Roof Assembly	Roofing Materials	Walls	Floors	Doors			
01	02	03	04	05	06	07	08
(See Table F)	(See Table G)	(See Table H)	(See Table I)	(See Table J)	(See Table K)	(See Table L)	
Yes	Yes	No			No		DOES NOT COMPLY





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H. WALL ASSEMBLY SCHEDULE

Table Instructions: Complete this table to demonstrate compliance with prescriptive wall assembly requirements in [§140.3\(a\)2](#) and [§140.3\(a\)3](#) for new construction or additions, or mandatory wall assembly requirements in [§141.0\(b\)1B](#) for alterations.

01	Indicate wall types included in the project: ¹	<input checked="" type="checkbox"/> Framed	<input type="checkbox"/> Mass (new only)	<input type="checkbox"/> Concrete Sandwich Panel (new only)	<input type="checkbox"/> SIPs	<input type="checkbox"/> ICF (new only)
		<input type="checkbox"/> Metal Panel	<input type="checkbox"/> Metal Building	<input type="checkbox"/> Spandrel/ Curtain Wall	<input type="checkbox"/> Straw Bale	<input type="checkbox"/> Log Home (new only)

¹FOOTNOTE: Wall types indicated above as "New only" do not have Title 24, Part 6 requirements for alterations. New construction and additions do have requirements and

Framed Walls

01	<input checked="" type="checkbox"/>	Calculate Area-Weighted Average U-factor for Metal Framed Walls ¹									
02	<input type="checkbox"/>	Include Wood Framed Walls in Area-Weighted Average U-factor Calculation ¹									
03	04	05	06	07	08	09	10	11	12	13	
Tag/Plan Detail ID	Occupancy & Status	How Design U-factor was determined	Location	Frame Material, Spacing & Depth	Cavity Insulation per Design	Continuous Insulation per Design	Thermal Performance Unit	Required Thermal Performance ²	U-factor per Design		Net Area ³ (ft ²)
Exterior	Any Occupancy: Altered		Exterior	Metal 16" OC & 2x6	R-19		R-value	13	per JA4		
					R-	R-			per Software/Other		
Demising	Any Occupancy: Altered			Metal 16" OC & 2x4	R-13	R-	R-value	13	per JA4		
									per Software/Other		
New exterior	Nonresidential / Relocatable 1 CZ: New	JA4 Tables	Exterior	Metal 24" OC & 2x6	R-21	R-6 c.i.	U-factor	0.082	per JA4	0.082	1,200
					R-	R-			per Software/Other		

Reset Add Row Remove Last

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Opaque Envelope Components					Fenestration	Daylighting Spaces > 5,000 ft ²	Compliance Results
Roof Assembly	Roofing Materials	Walls	Floors	Doors			
01	02	03	04	05	06	07	08
(See Table F)	(See Table G)	(See Table H)	(See Table I)	(See Table J)	(See Table K)	(See Table L)	
Yes	Yes	Yes			No		DOES NOT COMPLY



NRCC-ENV-E: Gina's Way

K. FENESTRATION AND GLAZED DOOR SCHEDULE

Table Instructions: Complete this table to demonstrate compliance with prescriptive fenestration requirements in [§140.3\(a\)5](#) for new construction or additions, or [§141.0\(b\)2A](#) for alterations. Exterior doors that are more than one-half glass in area are considered Glazed Doors and should be documented on this table with fenestration.

01 Indicate fenestration types included in the project: Vertical (alteration) Vertical (new) Skylights Glazed Doors (new only)

¹ FOOTNOTE: Fenestration types indicated above as "(new only)" do not have Title 24, Part 6 requirements for alterations. New construction and additions do have requirements and should be clicked above and compliance demonstrated within this table.

Vertical Fenestration- U-factor, Solar Heat Gain Coefficient (RSHGC/SHGC), Visible Transmittance (VT)







01	<input checked="" type="checkbox"/>	Calculate Area-Weighted Average U-factor for Vertical Fenestration ¹							
02	<input checked="" type="checkbox"/>	Calculate Area-Weighted Average SHGC for Vertical Fenestration ¹							
03	<input checked="" type="checkbox"/>	Calculate Area-Weighted Average VT for Vertical Fenestration ¹							
04	05	06	07	08	09	10	11	12	13
Tag/Plan Detail ID	Fenestration Type	Occupancy & Status	(R)SHGC Compliance Method	VT Compliance Method	Calculation Method for Performance Values per Design ²	Product Performance Unit	Required Product Performance	Product Performance per Design	Area (ft ²)
Storefront	Storefront	Nonresidential/Relocatable 1 CZ: Alt. (Replacement > 150ft ²)	Table 141.0-A	Table 140.3-B/C/D	NFRC Certified	U-factor (max)	0.58	0.45	2,000
					<input type="checkbox"/> Overhang used for RSHGC	(R)SHGC(max)	0.41	0.38	
						VT(min)	0.46	0.7	
Windows	Operable Window	Nonresidential/Relocatable 1 CZ: New	Table 140.3-B/C/D	Table 140.3-B/C/D	NFRC Certified	U-factor (max)	0.46	0.45	500
					<input type="checkbox"/> Overhang used for RSHGC	(R)SHGC(max)	0.22	0.22	
						VT(min)	0.32	0.7	
							Reset	Add Row	Remove Last

Area-Weighted Average U-factor, SHGC, VT Compliance Calculation for Vertical Fenestration and Glazed Doors

01	02	03	04	05
Product Performance Unit	Total Area of Fenestration (ft ²)	Area-weighted Calculation for Fenestration		Compliance Results Using Area-Weighted Calculation Option
		Required	Designed	
U-Factor	2,500	0.556	0.45	COMPLIES
(R)SHGC	2,500	0.372	0.348	COMPLIES
VT	2,500	0.432	0.7	COMPLIES



NRCC-ENV-E: Gina's Way

C. COMPLIANCE RESULTS 							
Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.							
Opaque Envelope Components					Fenestration	Daylighting Spaces > 5,000 ft ²	Compliance Results
Roof Assembly	Roofing Materials	Walls	Floors	Doors			
01	02	03	04	05	06	07	08
(See Table F)	(See Table G)	(See Table H)	(See Table I)	(See Table J)	(See Table K)	(See Table L)	
Yes 	Yes 	Yes 			Yes 		COMPLIES 



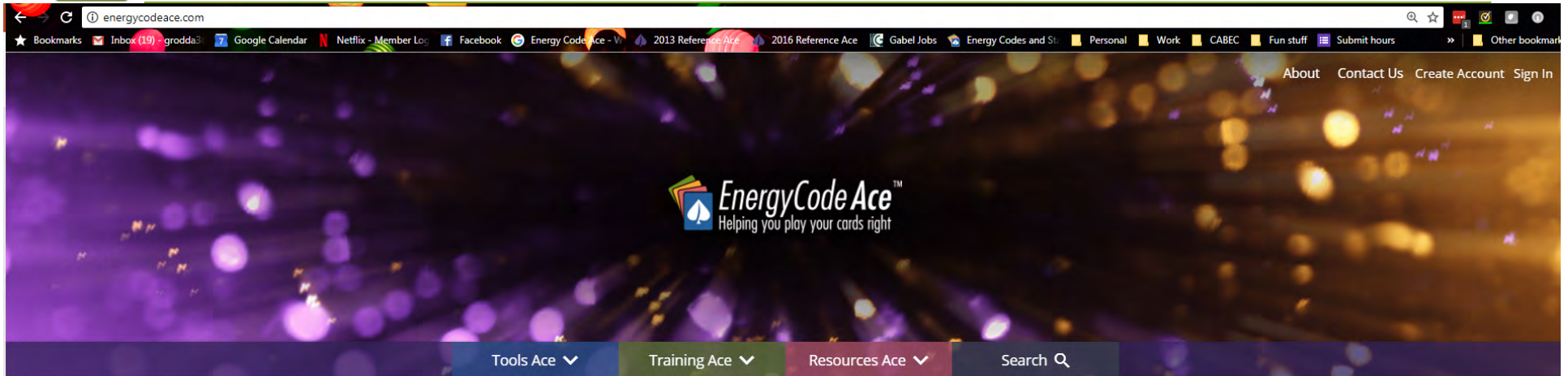
Next Steps



HELPING YOU PLAY YOUR CARDS RIGHT



Other ECA Resources



Code & Coffee with Brian – Nonresidential Forms: NRCC Dynamic Forms

Coming Soon!
Sign up at

<https://www.youtube.com/channel/UCQW7cjrM1sr9Pjw-7FF9CQ/featured>

Hide Available Training

Filter Available Training

LIST CALENDAR

Event Type

On-dema... & 1 more

- Live
 - Decoding Talk
 - Traditional Classroom
 - Virtual Classroom
- On-demand
 - Online Self-Study
 - Recorded
 - Recorded Code & Coffee
 - Recorded Decoding Talk

Accreditation (CEUs)

Filter Available Training

LIST CALENDAR

Event Type

On-dema... & 1 more

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 - Online Self-Study
 - Recorded
 - Recorded Code & Coffee
 - Recorded Decoding Talk

Accreditation (CEUs)



Other ECA Resources

The screenshot shows the Energy Code Ace website interface. At the top, there is a navigation bar with tabs for 'Tools Ace' and 'Training Ace'. Below this, there are several resource cards: 'Ace Resources' (Application Guides, Facts Sheets, Trigger Sheets, Checklists), 'Resources Ace' (downloadable charts, sheets), 'Trigger Sheets' (Documents that trigger a permit), 'Report' (Reporting and record keeping), 'Submit a Question' (Have a question about Energy Code Ace, Title 24, Part 6, Title 20 or how to comply with the standards?), and 'Application Guides' (Guides including compliance requirements and recommendations for implementing the Standards in new construction, addition or renovation projects). A large purple arrow points from the 'Resources Ace' card down to the 'Submit a Question' card. On the right side of the page, there is a prominent 'Submit a Question' form with the following text: 'Submit a Question', 'Have a question about Energy Code Ace, Title 24, Part 6, Title 20 or how to comply with the standards?', 'Just ask us. Submit your question and we'll respond to you via email within 3 business days.', and input fields for 'Name (optional)', 'Email Address', and 'Question', followed by a 'Submit' button.



Energy Commission Resources

The screenshot shows the California Energy Commission website's Online Resource Center. The page features a navigation menu with options like HOME, PROCEEDINGS, RULES AND REGULATIONS, PROGRAMS AND TOPICS, FUNDING, DATA AND REPORTS, and SHOWCASE. Below the navigation is a search bar and a main heading "Online Resource Center". The content area includes a description of the center's purpose, a list of resources (Compliance Forms, Energy Videos, Trainings and Upcoming Events, Exhibitor Booth Handouts), and a section for "ENERGY STANDARDS AND FORMS" with two articles about the 2019 and 2016 Building Energy Efficiency Standards. On the right side, there are sections for "BUILDING ENERGY EFFICIENCY STANDARDS - TITLE 24", "CONTACT", and "SUBSCRIBE" with a form for entering first name, last name, and email.

CEC Hotline

Monday – Friday, 8 a.m. to noon, 1 p.m. to 4:30 p.m.
1-800-772-3300 (CA), (916) 654-5106 (Outside CA)
Email: Title24@energy.ca.gov

List Server & Newsletter

Main conduit for stakeholder communication:
www.energy.ca.gov/listservers/
(Subscribe to Building Standards & Blueprint Newsletter)

Download the Blueprint Newsletter:
www.energy.ca.gov/efficiency/blueprint

Other Useful Links

CEC Online Resource Center:
<https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/online-resource-center>

Approved Compliance Software:
www.energy.ca.gov/title24/2019standards/2019_computer_prog_list.html