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**Response to the CEC's Request for Information on Building
Decarbonization and EV Charging Equipment Web Guide**

Additional submitted attachment is included below.



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September 14, 2022

California Energy Commission
Docket Unit, MS-4
Re: Docket No. 22-DECARB-02
715 P Street
Sacramento, CA 95814

**SUBJECT: SDG&E's Response to the CEC's Request for Information on
Building Decarbonization and EV Charging Equipment Web Guide
(Docket # 22-DECARB-02)**

San Diego Gas & Electric Company (SDG&E) appreciates the opportunity to provide feedback responsive to the California Energy Commission's Request for Information (RFI) on Building Decarbonization and EV Charging Equipment, originally issued on July 6, 2022. The RFI seeks materials and feedback on a wide range of issues related to building decarbonization, electric vehicle charging, and more. SDG&E is pleased to help inform the CEC's development of a website that will help guide Californians through the critical building and transportation decarbonization transitions.

While the information we provide is not an exhaustive list, nor does it respond to every question the CEC poses, it includes information on several of our efforts related to clean transportation, energy efficiency and financing customer programs, and implementation of the state's building codes and standards.¹ Our responses to the CEC's questions for stakeholders are included in Appendix A, and additional information regarding Energy Code Ace and Local Energy Codes websites, trainings, tools, and resources is provided in Appendix B.²

In addition, SDG&E notes the important role that both state and federal governments play in advancing decarbonization. Publicly-funded investments in building decarbonization and zero-emission vehicle strategies will be vital to maintain affordable

¹ For additional information about SDG&E's incentives, financing, and program offerings, visit <https://www.sdge.com>.

² Please note that information provided in Appendix B is also being filed to Docket #22-DECARB-02 under separate cover by other parties. SDG&E collaborated with PG&E and SCE on the development of this content.

electricity to facilitate California's transition to a decarbonized economy. Efforts like the federal Inflation Reduction Act (IRA) and Infrastructure Investment and Jobs Act (IIJA), as well as the recently approved state budget appropriation to support building decarbonization, are excellent examples.

Thank you for your consideration of SDG&E's comments. Please do not hesitate to contact me should you have any questions or wish to discuss our comments in greater detail. We look forward to continuing to work with Commission staff on this effort.

Sincerely,

/s/ Sarah M. Taheri

Sarah M. Taheri
Regulatory Affairs Manager

Appendix A: SDG&E Responses to Questions Included in RFI

Appendix B: Energy Code Ace and Local Energy Codes Websites, Trainings, Tools,
and Resources

Appendix A: SDG&E Responses to Questions Included in CEC Request for Information on Building Decarbonization and EV Charging Equipment

Information Requests and Questions for Stakeholders

1. Which building technologies (devices, appliances, and equipment) that advance or facilitate building decarbonization, electrification, and EV charging would you recommend be included on CEC's informational website? Where applicable, please address the following in your response.

SDG&E is not providing information responsive to question 1 at this time.

2. What tools, software, or resources that advance or facilitate building decarbonization, electrification, and EV charging would you recommend staff review for inclusion on CEC's informational website? This includes, but is not limited to, studies, equipment guidance and comparison, outreach materials, energy modeling/budgeting software, GHG modeling, model building permits or permitting process, model ordinances, and websites. Where applicable, please address the following in your response.
 - *Explain how the recommended tool, software, or resource facilitates the installation of EV chargers and reduces GHG emissions in buildings.*
 - SDG&E would like to highlight the [Integration Capacity Analysis \(ICA\) and Locational Benefit Analysis \(LNBA\) Map](#).
 - *Explain how the recommended tool, software, or resource would assist building owners, local governments, or contractors.*
 - The tool allows a user to access data regarding integrated capacity and locational net benefit analysis. These resources quantify the capability of the system to integrate Distributed Energy Resources (DERs) within San Diego Gas & Electric's distribution system. Results are dependent on the most limiting element of the various power system criteria such as thermal ratings, power quality, system protection limits and safety standards of existing equipment.
 - *Does the recommended tool, software, or resource offer additional benefits or value?*
 - The ICA and LNBA Map provide an integration capability framework for DERs within SDG&E service territory. These tools can provide a means of analyzing resource distribution across a variety of key factors. This can be of value for planning and high-level data interpretation.
 - *Please indicate if the tool, software, or resource is fee-based or free to users to access.*
 - The tool is free to users pending approval by SDG&E. A user must first register for an account and provide a reason for requesting access. Pending review of terms and conditions and approval, a user is granted a log in account and is free to access the tool and related resources.

3. Incentive and Financing: Provide recommendations of successful or innovative financing and incentive programs or models - proposed, past, or active programs - that advance building decarbonization, electrification, and EV charging. Where applicable, please address the following in your response.

a. SDG&E's On-Bill Financing (OBF) Program

- *Explain the program/model and how it advances the installation of EV chargers and reduces GHG emissions in buildings. This includes, but is not limited to, incentive or financing being offered, eligible parties and equipment, market segment, geographic region, and administrator.*
 - SDG&E's On-Bill Financing offers zero-percent interest loans to eligible non-residential customers participating in our energy efficiency rebate, incentive, or 3rd Party programs. OBF finances only energy-efficiency equipment that qualifies for a rebate or incentive. OBF works in conjunction with the current Energy Efficiency (EE) Rebate and/or Incentive programs which do not offer EV chargers. However, within the current EE programs there are rebates and or incentives available for other types of building electrification measures that do reduce GHG emissions.
- *If the program is ongoing or concluded, what were/are the program results?*
 - The OBF program is still ongoing. For the program results please see the 2021 SDG&E EE Annual Report. Report is located at https://www.sdge.com/sites/default/files/documents/R1311005_%20PUBLIC%20SDGE%202021%20EE%20Annual%20Report.pdf.
- *How does your program or model advance energy equity and reduce energy burden?*
 - SDG&E's OBF option helps to support energy efficiency upgrades for all non-residential customers by offering an equitable finance solution. Our OBF option removes the barrier for Businesses that do not have the upfront capital for energy efficiency investments. The OBF loans granted to our non-residential Customers have helped to lower energy bills, improve air quality, safety, and comfort.
- *Which existing program website or websites would be helpful templates and models for the CEC to see and to potentially consider linking to the proposed webpage discussed here?*
 - For more information on SDG&E's OBF option please visit the SDG&E site at <https://www.sdge.com/0-interest-loans-qualifying-businesses?keywords=obf>.

b. SDG&E's Clean Energy Financing Proposal

- *Explain the program/model and how it advances the installation of EV chargers and reduces GHG emissions in buildings. This includes, but is not limited to, incentive or financing being offered, eligible parties and equipment, market segment, geographic region, and administrator.*
 - SDG&E has proposed the Business Customer Clean Energy Financing program as part of the Clean Energy Financing OIR with the CPUC. The program intends to provide on-bill financing to promote the electrification of existing natural gas water heating and

space heating equipment. The primary goal of the program is to increase the adoption of long-lasting building electrification measures by addressing some of the market barriers to achieving this objective, thereby contributing to the State's goal to reduce greenhouse gases and other emissions resulting from fuel substitution measures. Customers would benefit from zero-interest financing over an estimated five-year term, thereby reducing upfront costs with no additional loan charges. The program also proposes incentives to reduce total cost of installation for customers. This program is proposed for SDG&E's service territory, specific for heat pump water heating, heat pump space heating and panel upgrades. SDG&E would be the likely administrator for this program with support from third-party implementer(s).

- *If the program is ongoing or concluded, what were/are the program results?*
 - This program is a proposal as part of the Clean Energy Financing OIR which expects a proposed decision in September 2022. Based on that proposed decision, the program would begin implementation planning in Q4 2022 with estimated launch mid-2023.
 - *How does your program or model advance energy equity and reduce energy burden?*
 - This program is proposed to target small and medium business customers, with a specific focus on small, hard-to-reach businesses, including dedicating 50% of the program budget on this market. SDG&E's small business market has been underserved in terms of clean energy program adoption though it represents an important audience to achieve the State's clean energy and GHG reduction goals. SDG&E's Path to Net Zero Decarbonization Roadmap also forecasts the need for higher adoption of heat pump water and space heating among the non-residential segment which includes small, hard-to-reach businesses. Only qualified energy efficient technologies would be eligible. Customers would benefit from zero-interest financing over an estimated five-year term, thereby reducing upfront costs with no additional loan charges. The program also proposes incentives to reduce total cost of installation for customers.
 - *Which existing program website or websites would be helpful templates and models for the CEC to see and to potentially consider linking to the proposed webpage discussed here?*
 - This program is still in proposal phase and as such does not have online sites or templates.
- c. SDG&E's Power Your Drive for Workplaces Program**
- *Explain the program/model and how it advances the installation of EV chargers and reduces GHG emissions in buildings. This includes, but is not limited to, incentive or financing being offered, eligible parties and equipment, market segment, geographic region, and administrator.*
 - Response: SDG&E's Power Your Drive for Workplaces EV Charging Infrastructure Program is designed to reduce greenhouse gas emissions (GHGs) and meet customer demand for more electric

vehicle (EV) chargers in the region, SDG&E plans to install charging infrastructure at about 100 workplaces over two years. Among the sites selected, 50% will support California Assembly Bill 841 underserved communities (UDC), which include certain disadvantaged and federally recognized tribal communities.

- *If the program is ongoing or concluded, what were/are the program results?*
 - Response: Phase 1 of the interest submission process closed on Aug. 31, 2022. Interest submissions collected after Aug. 31, 2022 will be placed on a wait list. The program will install charging infrastructure at about 100 workplaces over two years.
- *How does your program or model advance energy equity and reduce energy burden?*
 - SDG&E's Power Your Drive for Workplaces emphasizes and advances energy equity by providing different infrastructure installation options determined by ownership preference and providing charger rebates tailored to business size and/or the location within an underserved community. Power Your Drive for Workplaces supports underserved communities in 50% of project sites.
- *Which existing program website or websites would be helpful templates and models for the CEC to see and to potentially consider linking to the proposed webpage discussed here.*
 - SDG&E's Power Your Drive for Workplaces website is accessible here, along with links to program information, requirements, and fact sheets.

APPENDIX B: Energy Code Ace and Local Energy Codes Websites, Trainings, Tools, and Resources

NOTE: These resources were identified and compiled by a statewide IOU (SDG&E/PG&E/SCE) effort. Please note that, as such, the information is also being filed to Docket #22-DECARB-02 under separate cover.

The California Statewide Utility Codes and Standards (C&S) Team appreciates the opportunity to provide information in response to the California Energy Commission's (CEC) Request for Information (RFI) seeking to inform a new webpage providing information, resources, and tools about building decarbonization and electric vehicle (EV) charging equipment

The C&S Team actively supports code-setting bodies in developing and revising building energy codes and standards. The program's objective is to achieve significant energy savings and assist in meeting other energy-related state policy goals through the development of reasonable, responsible, and cost-effective code changes. This program is funded by California utility customers and administered by Pacific Gas and Electric (PG&E), San Diego Gas & Electric (SDG&E®) and Southern California Edison (SCE) under the auspices of the California Public Utilities Commission (CPUC).

In response to this RFI, the above-mentioned utilities want to make sure the CEC is aware of the following resources developed by the C&S Team:

1. **Fact Sheet on 2022 CALGreen Residential and Nonresidential EV Charging Requirements.** It provides an overview of the new 2022 CALGreen EV infrastructure requirements for residential and nonresidential construction, effective January 1, 2023.
 - a. Website link:
https://localenergycodes.com/download/965/file_path/fieldList/CALGreen%202022%20EV%20Charging%20Requirements.pdf
2. **Summary of Locally Adopted Energy Ordinances, Including All-electric Ordinances and EV Charging Infrastructure Ordinances.** It provides a summary of 2019 code cycle locally adopted ordinances, including jurisdiction, ordinance type, scope, and link to the ordinance.
 - a. Website link:
https://localenergycodes.com/download/557/file_path/fieldList/2019%20Adopted%20Reach%20Codes.pdf
3. **Light-Duty EV Charging Infrastructure Analysis for Title 24, Part 11 (CALGreen).** This report documents various supports provided to the California Air Resource Board (CARB) staff in developing initial proposals for 2022 CALGreen light-duty EV charging infrastructure requirements for multifamily and nonresidential buildings. The supporting documentation includes a comparison of EV requirements from 37 local jurisdiction reach codes across California, an EV charging infrastructure cost study comparison from previously published reports, and a summary of existing building EV requirements from local reach codes and select international codes. Finally, the report presents recommendations for future code updates, including load shaping to align charging with renewable generation, future proofing considerations to reduce retrofit costs, improving technical power requirements, incorporating automatic load management systems, and

establishing minimum performance requirements, accommodating variations in dwell times, and filling data gaps to support future code enhancements.

a. Website link:

<https://title24stakeholders.com/wp-content/uploads/2021/09/CALGreen-2022-Light-Duty-EV-Infrastructure-Analysis-09-2021.pdf>

4. **Medium- and Heavy-Duty EV Charging Infrastructure Cost Analysis for Title 24, Part 11 (CALGreen).** This report documents various supports provided to CARB staff in developing proposals for 2022 CALGreen Medium- and Heavy-Duty (MHD) EV charging infrastructure requirements. The report reviews the regulatory landscape for EV charging infrastructure and outlines the proposed requirements to enable impactful opportunity charging for visiting MHD EVs at loading spaces for grocery, retail, and warehouse building types. A study, which outlines the benefits and cost analysis featuring nine scenarios shows that these proposed requirements meet the public benefit and purpose of accelerating the electrification of MHD transportation to address greenhouse gas (GHG) reduction and air quality improvement priorities by preparing buildings to host a minimum level of EV charging infrastructure. Further, the new construction requirements will help avoid potentially much more expensive retrofit costs to install the same equipment in the future. The report concludes with recommendations for future work to increase scope and close data gaps.

a. Website link:

<https://title24stakeholders.com/wp-content/uploads/2021/09/CALGreen-2022-Medium-and-Heavy-Duty-EV-Charging-Cost-Analysis-2021-09.pdf>

The IOUs may assist local jurisdictions with local ordinance adoption through the Codes and Standards Reach Code Subprogram. The IOUs can equip jurisdictions with the tools and information they need to pursue local energy ordinances that help achieve higher efficiency than minimum code requires, and spur the adoption of PV systems, electrification measures and more. Please see www.LocalEnergyCodes.com for more information.

The IOU Codes and Standards Compliance Improvement subprogram comments focus on how the CEC's new website may link to the Codes and Standards Compliance Improvement Subprogram's Energy Code Ace website to help industry access existing training, tools and resources that are designed to help overcome barriers to building electrification for multiple building systems and appliances. These recommended tools, trainings and resources assist building owners, local governments, contractors, and multiple market actors to comply with the CEC's Title 24 Part 6 Building Energy Code and Appliance Standards. These tools, trainings, and resources are available and accessible to users at no cost.

The following pages feature illustrative examples of content the CEC may wish to link to on EnergyCodeAce.com.



Our popular resources help facilitate effective implementation of California's building and appliance energy efficiency standards.

Application Guides

These short manuals include compliance requirements and recommendations for implementing Title 24, Part 6 in Nonresidential and Residential New Construction, Additions and renovation projects. Guides with building electrification content include:

- Nonresidential Envelope and Solar Ready
- Nonresidential HVAC and Plumbing
- Residential Envelope, Solar Ready and PV
- Residential HVAC and Plumbing

Fact Sheets

Our "quick reference" summaries of key requirements, forms, definitions and resources for implementing Title 24, Part 6 and Title 20. Fact sheets with building electrification content include:

- Residential Compliance Pathways 2019
- What's New in 2019 Nonresidential Energy Code
- What's New in 2019 Residential Energy Code
- What's Changed for 2022 – Multifamily Buildings
- What's Changed for 2022 – Nonresidential Buildings
- What's Changed for 2022 – Single-family Residential Buildings
- What's New in 2022 Nonresidential Energy Code
- What's New in 2022 Residential Energy Code
- What's New in 2022 Multifamily Energy Code

Find all our resources at EnergyCodeAce.com/Resources.

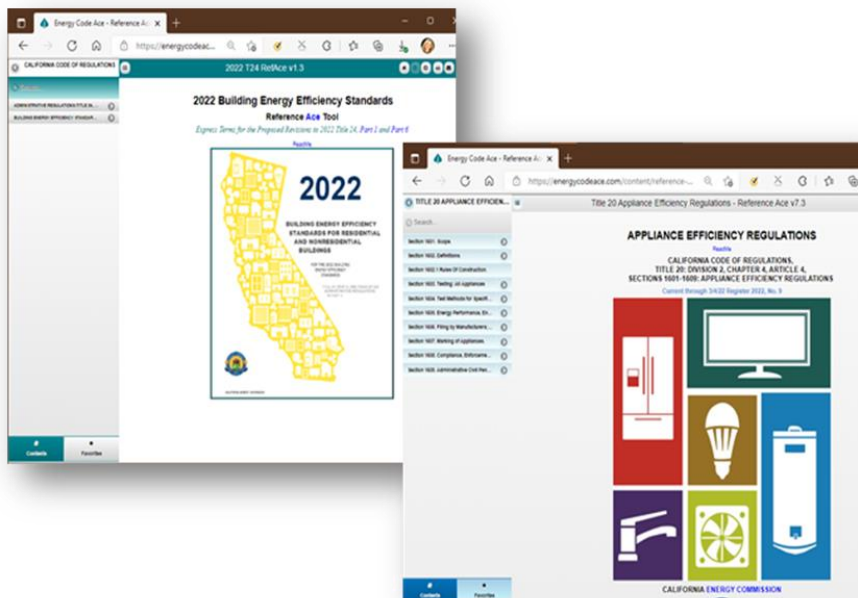


Online Live: Check our site for upcoming class dates
2019 Title 24, Part 6 Essentials – Nonresidential Standards for Architects & Designers Designed to help nonresidential architects and designers advance their understanding of California's 2019 Energy Code, the course offers a clear roadmap of the compliance process, including how to administer and coordinate with the design team and energy consultant, and it provides guidance on the Energy Code requirements for commissioning and design review, envelope, daylighting and solar ready design. Learn more here.
2019 Title 24, Part 6 Essentials – Residential Standards for Architects & Designers Designed to help residential architects and designers advance their understanding of California's 2019 Energy Code, the course offers a clear roadmap of the compliance process, including how to administer and coordinate with the design team and energy consultant, and it provides guidance on the Energy Code requirements for envelope, mechanical and photovoltaic (solar) design. Learn more here.
2022 Title 24, Part 6 Essentials – Nonresidential Standards: What's New Summarizes the new and revised requirements in the 2022 California Energy Code for nonresidential buildings, and directs participants to informational and training resources that provide more in-depth information on the Energy Code. Learn more here.
2022 Title 24, Part 6 Essentials – Residential Standards: What's New Summarizes the new and revised requirements in the 2022 California Energy Code for residential buildings, and directs participants to informational and training resources that provide more in-depth information on the Energy Code. Learn more here.
Code Breakers: Contact us to schedule
Code Breaker: Single Family All Electric – 2022 Energy Code Reviews not only the all-electric preparation requirements of the 2022 Energy Code, but also PV exemptions. The presentation also explores preparation for future all-electric buildings in the Energy Code requirements for heat pump space heating, domestic hot water and battery-ready electrical panel configuration. Learn more here.
Code Breaker: Multifamily All Electric – 2022 Energy Code Reviews not only the all-electric preparation requirements of the 2022 Energy Code, but also PV exemptions. The presentation also explores preparation for future all-electric buildings in the Energy Code requirements for HVAC systems, domestic hot water and battery storage. Learn more here.
Code Breaker: Nonresidential All Electric – 2022 Energy Code Reviews not only the all-electric preparation requirements of the 2022 Energy Code, but also PV exemptions. The presentation also explores preparation for future all-electric buildings in the Energy Code requirements for HVAC systems, domestic hot water and battery storage. Learn more here.
On-demand: Available online at your convenience
Code & Coffee: Modeling Residential PV Systems for the 2019 Energy Code using EnergyPro8 Focuses on residential building performance modeling for compliance with California's 2019 Energy Code. The host demonstrates how to model detailed PV system inputs for a single-family residential project. Watch the video here.
Code & Coffee: Residential Modeling – 2019 Energy Code New Construction Project Demonstrates how to update an existing 2016 Energy Code new construction model for compliance with the 2019 Energy Code using EnergyPro version 8. Key topics include adding a solar PV system and battery storage, updating envelope, HVAC and DWH system measures, reviewing the new EDR compliance metric and checking the CF1R for accuracy. Watch the video here.
2019 Residential Modeling – Heat Pump Water Heaters Serving Single Dwellings Provides an overview of considerations for simple heat pump water heater systems and demonstrates how to model such systems in both EnergyPro and CBECC-Res software packages. Watch the video here.



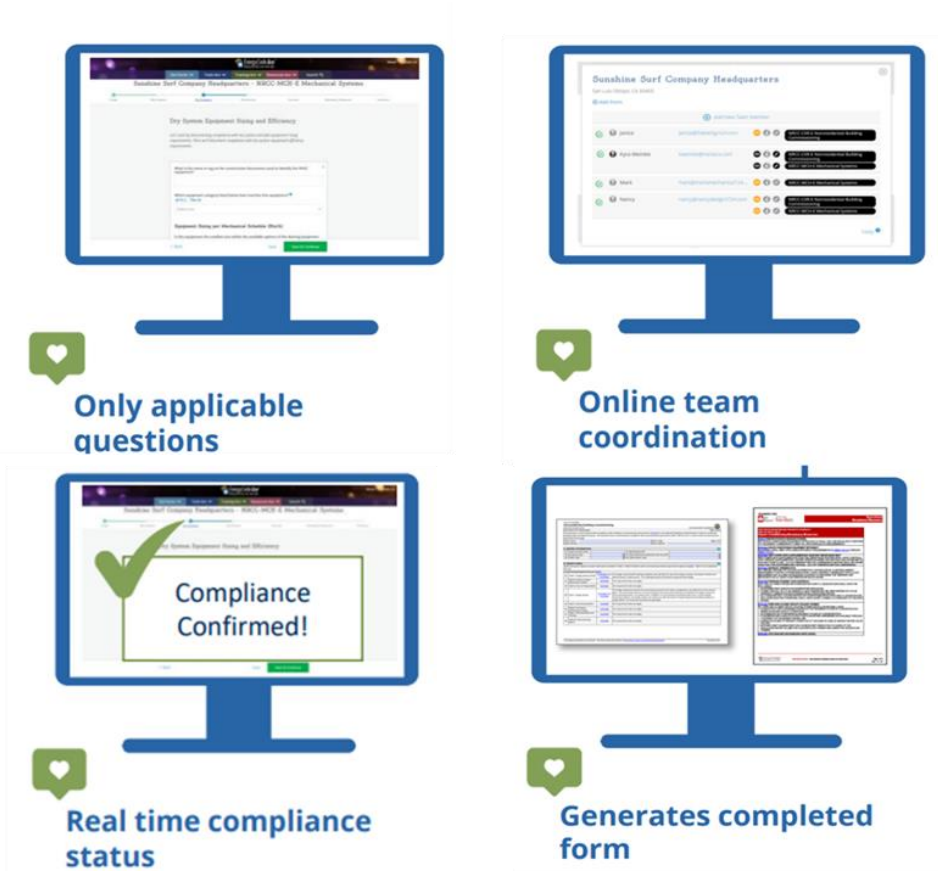
Reference Ace helps industry quickly navigate the code language and appendices.

Notice the Reference Ace includes both Title 24, Part 6 and Title 20 standards documents.



Virtual Compliance Assistant can ease identifying code requirements, verifying compliance and completing forms for all types of nonresidential projects.

This tool verifies compliance and generates forms that indicate when a project does and doesn't comply *before* the permit application arrives at the permit counter. It also auto populates certificates of installation with permitted project data, saving the installer time and indicates if field substitutions are equal or better than what was permitted. This saves designers and installers time on change orders and should streamline inspections. Schemas may be used by other entities who have tools that automate tasks and these schemas will lead to consistent as-designed vs. as-built project data that may be captured in a central repository.



Energy Code Product Finder identifies certified products and other product requirements for a specific project scope and provides example specification language to help designers reflect Title 24, Part 6 and Title 20 product requirements in construction documents.

The tool also provides links to referenced product databases, such as the Cool Roof Rating Council (CRRC) or National Fenestration Rating Council (NFRC) websites.

Energy Code Product Finder

We can help find Title 24, Part 6 compliant products. Using the buttons below, just let us know which parts of the project you are working on or, if you already have a [Construction Specifications Institute \(CSI\) MasterFormat®](#) Number, you can choose that instead.

Building Component	CSI Number	Show All
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▼ Tell me more about requirements

OK, start by answering a few questions about the parts of your project you need product info for so we can determine applicable product requirements.

1. What is your project's occupancy type?

2. Which applications do you want to check for certified projects?

3. What is the project ZIP Code? ⓘ

Energy Code Product Finder

Title 24, Part 6 Compliant Products

Search for a product type or specification number				
Save Results				
PRODUCT	CODE SECTION	BLOG OCCUPANCY	CSI NUMBERS & EXAMPLE PRODUCT SPECIFICATION LANGUAGE	PRODUCT DATABASE
Envelope				
Daylighting Requirements	2019 Energy Code (Current) §110.6(a)4: VT §140.3(c)5: Haze	Single Family	CSI Numbers: 08 06 00 Schedules for Openings 08 60 00 Roof Windows and Skylights Want pro designer tips for specifying these products in your construction documents? Show Example ▼	National Fenestration Rating Council
Exterior Doors	2019 Energy Code (Current) §110.6(a)1	Single Family	CSI Numbers: 08 10 00 Doors and Frames Want pro designer tips for specifying these products in your construction documents? Show Example ▼	No database or list available. Refer to product documentation to confirm certification.
Fenestration (Window/Skylight/Glazed Door)	2019 Energy Code (Current) §110.6(a)1: Air Leakage §110.6(a)2: U-factor §110.6(a)3: SHGC §110.6(a)4: VT	Single Family	CSI Numbers: 08 50 00 Windows Want pro designer tips for specifying these products in your construction documents? Show Example ▼	National Fenestration Rating Council
Insulation	2019 Energy Code (Current) §110.8(a)	Single Family	CSI Numbers: 07 21 00 Thermal Insulation Want pro designer tips for specifying these products in your construction documents? Show Example ▼	Bureau of Household Goods and Services