

Title 20 Requirements for C&I Fans and Blowers

Commercial and industrial fans and blowers (C&I fans and blowers) manufactured on or after April 29, 2024, are required to comply with the testing, marking, and certification requirements listed in [Sections 1601-1609 of California's Appliance Efficiency Regulations \(Title 20\)](#).

All regulated products are required to be listed on the California Energy Commission's (CEC) [Modernized Appliance Efficiency Database System \(MAEDbS\)](#), a publicly available database that contains all regulated products that are legally allowed to be sold or offered for sale in California.

Title 20 Compliance Summary

Compliance entails the following:

- ✦ Testing regulated products by using the required test method in a test lab that meets the requirements outlined in [Section 1603](#);
- ✦ Marking regulated products in accordance with [Section 1607](#); and
- ✦ Certifying regulated products to the CEC's MAEDbS

It is illegal to sell or offer for sale a regulated product in California that is not certified to the MAEDbS, even if the C&I fan or blower model meets all testing and marking requirements outlined in Title 20. Everyone in the sales chain – including manufacturers, distributors, retailers, contractors, and importers – is responsible for ensuring non-compliant products are not sold or offered for sale in California.



Axial panel fan

To review the adopted code language for C&I fans and blowers, refer to [CEC's Proposed Regulatory Language for 15-Day Express Terms](#). The latest code language will be made available on [Westlaw](#) and the [Reference Ace](#) soon.

Quick Links to Relevant Code Sections

California Appliance Efficiency Regulations - Title 20

- ✦ [Section 1602\(d\)](#) – Definitions
- ✦ [Section 1603](#) – Testing: All Appliances
- ✦ [Section 1604](#) - Test Methods for Specific Appliances
- ✦ [Section 1606](#) – Filing by Manufacturers; Listing of Appliances in Database
- ✦ [Section 1607](#) – Marking of Appliances
- ✦ [Section 1608](#) – Compliance, Enforcement, and General Administrative Matters

Title 20 Background and Benefits

Title 20 establishes minimum efficiency standards for energy and water consumption in products. The Title 20 C&I fan and blower regulations require that products are marked with the operation boundaries at which the fan operates efficiently with a fan energy index (FEI) of 1.00 or higher. FEI is a relatively new metric that is also used in [California's 2022 Building Energy Efficiency Standards \(Title 24, Part 6 or the Energy Code\)](#), the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), and the International Code Council (ICC) energy codes.

In May 2023, the U.S. Department of Energy (DOE) adopted a test procedure for C&I fans and blowers, which modified testing requirements that the CEC had previously adopted. As a result, in April 2024, the CEC updated the Title 20 regulations to align with the new U.S. DOE test procedure.

According to the [2022 CEC Staff Report](#), this regulation can save roughly 1,755 gigawatt hours (GWh) of electricity in California per year after full stock turnover. This is equivalent to the average annual electricity consumption of over 200,000 homes in the U.S. The net benefit at full stock turnover equates to roughly \$5 billion for California businesses and industries.

The estimated savings from this regulation are...



1,755 GWh
of electricity in California
per year after full stock
turnover

equivalent to roughly...



The average annual
electricity consumption of
200,000+ homes
in the U.S.



The net benefit at full
stock turnover equates to
approximately
\$5 billion
for California businesses
and industries

Scope of C&I Fan and Blower Regulations

The Title 20 regulation applies to all C&I fans and blowers including those with a rated shaft input power of greater than or equal to one horsepower (HP). For fans without a rated shaft input power, an electrical input power must be greater than or equal to 0.89 kilowatt (kW), and a fan output power, static air power or total air power, less than or equal to 150 HP as prescribed in paragraph(a)(4)(ii) of [10 Code of Federal Regulations \(C.F.R.\) section 431.174](#).

The standard covers C&I fans and blowers used in building applications, including:

- ✦ Centrifugal housed fans
- ✦ Centrifugal inline fans
- ✦ Centrifugal unshrouded fans
- ✦ Centrifugal power roof ventilator supply (PRV-S) fans
- ✦ Centrifugal power roof ventilator exhaust (PRV-E) fans
- ✦ Axial inline fans
- ✦ Axial panel fans
- ✦ Axial powered roof ventilator (PRV) fans
- ✦ Inline mixed-flow fans
- ✦ Power roof/wall ventilator fans
- ✦ Radial housed fans



Centrifugal housed fan

The Title 20 standard *excludes* the following fan types:

- ✦ Radial housed unshrouded fan with blade diameter at tip less than 30 inches or a blade width of less than 3 inches
- ✦ Safety fans as defined in [Section 1602\(d\)](#)
- ✦ Induced-flow fans
- ✦ Jet fans
- ✦ Cross-flow fans
- ✦ Fans manufactured exclusively to be powered by internal combustion engines
- ✦ Fans that create a vacuum of 30 inch water gauge or more
- ✦ Fans that are designed and marketed to operate at or above 482°F (250°C)
- ✦ Fans and blowers embedded in the equipment listed in paragraph (a)(3) of [10 C.F.R. section 431.174](#)
- ✦ Fans and blowers embedded in equipment other than the equipment listed in paragraph (a)(3) of [10 C.F.R. section 431.174](#), that meets the following criteria: (i) the fan or blower is available only as part of a manufactured assembly that includes functions other than air movement or as a replacement part for that assembly, and (ii) the fan or blower is not subject to federal efficiency standards.

Testing Requirements

Regulated C&I fans and blowers must be certified in the MAEDbS prior to being sold or offered for sale in California. To be listed in MAEDbS, manufacturers must test their products using the U.S. DOE test procedure and upload test results documenting compliance with the Title 20 standards. Manufacturers have two primary methods to test their products:

1. The U.S. DOE test procedure, 10 C.F.R. section 431.174 (Appendix A to Subpart J of part 431), for fans and blowers.
2. The alternative efficiency determination method (AEDM) and additional testing requirements, as detailed in 10 C.F.R. Sections [429.69](#) and [429.70](#). An AEDM is a mathematical model based on the covered equipment design that estimates energy efficiency or energy consumption characteristics of the basic model, and mitigates the potential cost associated with having to physically test units.

Testing for C&I fans and blowers must be conducted in a test lab that meets the following requirements:

- ✦ Has conducted tests using the applicable test method within the previous 12 months;
- ✦ Agrees to and does interpret and apply the applicable test method set forth in [Section 1604](#);
- ✦ Continues to ensure that all equipment, material, and facilities has been, is, and will be properly calibrated and maintained, as necessary to apply the applicable test method precisely as written;
- ✦ Agrees to and maintains copies of all test reports, and provides any such report to the Executive Director on request, for all basic models that are still in commercial production; and
- ✦ Agrees to and does allow the Executive Director to witness any test of such an appliance on request, up to once per calendar year for each basic model.

Once listed in the MAEDbS, products do not need to be re-certified each year. However, per [Section 1606\(i\)](#), manufacturers must renew their certification every ten years to be considered in production and to be legally sold in California. Additionally, manufacturers should remove their product listings if the product is no longer available for sale and add new products or modify the ratings of products for any that have changed. Some manufacturers elect to update their entire MAEDbS listing each year to ensure their listings are current.

For More Information



CALIFORNIA
ENERGY COMMISSION

energy.ca.gov

- ★ **Appliances Call Center:** (888) 838-1467 or outside California (916) 651-7100. Questions may also be emailed to appliances@energy.ca.gov
- ★ [California Appliance Efficiency Standards Site](#)
- ★ [Modernized Appliance Efficiency Database \(MAEDbs\)](#)
- ★ **Commercial and Industrial Fans and Blowers Rulemaking Documents:** [docket # 22-AAER-01](#)



energycodeace.com

Your one-stop shop for no-cost tools, training and resources to help you comply with California's Title 24, Part 6 building energy code and Title 20 appliance standards.



A suite of interactive tools to help you understand the compliance process, required forms, installation techniques, and energy efficiency regulations applicable to Title 20 and Title 24, Part 6

- ★ [Title 20 Reference Ace](#) - Navigate the Title 20 Standards using an index, keyword search, and hyperlinked text.




A portfolio of on-demand, live online, and in-person training on Title 20 and Title 24, Part 6, tailored to a variety of industry professionals to address key requirements

- ★ [Title 20 Training Ace](#)
- ★ [Title 20 Essentials: Using MAEDbs for Manufacturers](#)



An array of downloadable materials providing practical and concise guidance on how and when to comply with Title 20 and Title 24, Part 6

- ★ [Title 20 C&I Fans and Blowers FAQ \(coming soon\)](#)
- ★ [Title 20 Basics - Manufacturers](#)
- ★ [Title 20 Basics - Retailers, Distributors, and Installers](#)
- ★ [MAEDbs 101](#)

 **Submit a Question** – Get your Title 20 questions answered directly by experts. Select the 'Appliances' drop-down menu, navigate to 'Resources,' and select 'Submit a Question.'

Energy Code Ace is here to help you ensure your products meet Title 20 requirements. This website can help prevent issues that impact your sales and bottom line, including civil penalties under Title 20 Section 1609 for non-compliant products. Create an account on the Energy Code Ace website and select an industry role for your profile to receive messages about our offerings!



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. © 2020 PG&E, SDG&E, SoCalGas and SCE. All rights reserved, except that this document may be used, copied, and distributed without modification. Neither PG&E, SoCalGas, SDG&E, nor SCE — nor any of their employees makes any warranty, express or implied; or assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any data, information, method, product, policy or process disclosed in this document; or represents that its use will not infringe any privately-owned rights including, but not limited to patents, trademarks or copyrights. Images used in this document are intended for illustrative purposes only. Any reference or appearance herein to any specific commercial products, processes or services by trade name, trademark, manufacturer or otherwise does not constitute or imply its endorsement, recommendation or favoring.