



# NONRESIDENTIAL HVAC REQUIREMENTS



COMMUNITY DEVELOPMENT DEPARTMENT • 345 N EL DORADO STREET • STOCKTON, CA 95202 • (209) 937-8561  
[www.stocktonca.gov/buildinginspection](http://www.stocktonca.gov/buildinginspection)

## PERMIT REQUIREMENTS:

- A building permit is required for the following nonresidential HVAC projects:
  - New HVAC installation
  - HVAC Changeout
  - Replacement of furnace, coil, FAU, or condenser
  - Relocation of an existing HVAC unit
- A **Fire Department Permit** may also be required for your project, see below for more information.
- Permits are issued to a California licensed **C-20** contractor with a current City of Stockton Business License.
- **Nonresidential HVAC permits are now available to apply, pay, and receive online via our Online Permit System. You must create a free user account to use this service. Please visit [www.aca.accela.com/Stockton](http://www.aca.accela.com/Stockton)**
- Permits can also be obtained at the Community Development Department Permit Center.
  - Located at 345 N. El Dorado St, Stockton, CA 95202
  - Office hours are from 8:00 a.m. to 4:30 p.m. Monday through Friday, closed alternate Fridays.

## SUBMITTAL CHECKLIST:

- A. Completed Building Permit Application
- B. Energy Compliance Forms – See below
- C. Gas Pipe Sizing Calculations (if applicable)
- D. Authorization Letter from the licensed contractor for the individual picking up the permit (if applicable)
- E. Plans & Structural Analysis – Required for new units

## ENERGY CODE COMPLIANCE:

- Refer to the attached document from Energy Code Ace summarizing the requirements for HVAC projects.
- All new or replacement equipment must meet the minimum efficiency requirements of CEC Section 110.2(a)
- Acceptance Testing by an Acceptance Test Technician is required for most nonresidential HVAC projects. The required acceptance tests shall be identified on the required energy forms.

## FORMS:

- NRCC-MCH-E
  - Required at time of permit application.
  - **It is the contractor's responsibility to provide completed forms at time of application**
- NRCI-MCH-01-E
  - Completed and signed by the installing contractor and made available for final inspection by the Building Department.
  - Additional forms may be required depending on the scope of the project and the required acceptance tests and HERS verification.

**ADDITIONAL REQUIREMENTS:**

Provide equipment specifications from the manufacturer for new or replacement equipment that includes the unit weight (see below for units heavier than the existing unit), electrical requirements, and gas requirements. Below is a sample table that you may use to document the equipment specs:

MECHANICAL EQUIPMENT SCHEDULE									
Manufacturer	Model	Fuel Type	CFM <sup>1</sup> Rating	Unit <sup>3</sup> Weight	Electrical			Location <sup>2</sup>	Gas <sup>4</sup> BTUs/Hr
					Voltage	MCA	MOCP		

**NOTES:**

1. If the new or replacement unit has smoke detection installed, exceeds 2,000 CFM, or serves a room where multiple systems exceed 2,000 CFM, the system must be equipped with duct smoke detection and an automatic shutoff. A **Fire Department Permit will be required** in accordance with the California Fire Code. Contact the City of Stockton Fire department at (209) 937-8271 for more information about this requirement.
2. A Site Plan is required with all submittals for new ground mounted equipment.
3. For new rooftop units or replacement units that are heavier than the existing unit a structural analysis shall be provided with the submittal. Provide a partial roof framing plan, connection details, and structural calculations in accordance with California Building Code Chapter 16.
4. Gas pipe sizing calculations are required for new units or replacement units with a higher gas load demand. If the units will be served by a gas line fed directly from the gas meter, calculations may not be required.

**Packaged Units — Single-zone, Direct Expansion (DX) — Split Systems**

Change This (and nothing else)	Mandatory Requirements									Prescriptive Requirements						
	Tstat <sup>B</sup> §§110.2(c), 110.12(a), 120.2(a), (b), (c) & (e)	Supply & Exhaust Dampers (ventilation provided by HVAC) §120.2(f)	Min. Cooling Efficiency §110.2(a)	Min. Heating Efficiency §110.2(a)	Ventilation Calcs <sup>J</sup> §120.1	Demand Control Ventilation <sup>B, J</sup> §§120.1(c) 3 & 4	Duct Insulation §120.4	Demand Shed Controls <sup>E</sup> §§110.2(c), 110.12(a), 110.12(b), 120.2(b), (h)	Occupant Sensor Ventilation Control <sup>J</sup> §120.1(d)5	Cooling Load Calcs §140.4(b)	Heating Load Calcs §140.4(b)	Equipment Sizing (per load calcs) §140.4(a)	Fan Power <sup>F</sup> §140.4(c)	Econo-mizer <sup>G</sup> §140.4(e)	Duct Seal & Test <sup>H, J</sup> §140.4(l)	Fan Control §140.4(m)
Whole Pkg Unit or Split System NO ALTERED DUCTS	YES	YES	YES	YES	YES	YES	no	YES	YES	YES	YES	YES	YES	YES	YES	YES <sup>I</sup>
Cooling Coil of Packaged System	YES	no	YES	no	no	no	no	YES	no	no	no	no	no	no	YES	no
Split System Outdoor Condensing Unit	YES	no	YES	YES <sup>C</sup>	no	no	no	YES	no	no	no	no	no	no	YES	no
Split System, Air Handler, or Cooling or Heating Coil	YES	no	YES	YES <sup>C</sup>	no	no	no	YES	no	no	no	YES	YES	YES	YES	no
Ductwork <sup>A</sup>	no	no	no	no	no	no	YES	no	no	no	no	no	no	no	YES	no
New or Replacement Ducts and Whole Pkg Unit or Split System	YES	YES	YES	YES	YES <sup>K</sup>	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES <sup>I</sup>

**NOTE: For Nonresidential HVAC systems, a change in blower motor, compressor or condenser coil is considered a repair and does not trigger the Energy Code. However, repairs must not increase the pre-existing energy consumption of the repaired component, system or equipment.**

- A Check with your local building department to see if changes to duct work only will require a permit.
- B Thermostats also must comply with requirements of Reference [Joint Reference Appendix 5 \(JA5\)](#) per §120.2(b)4 (Mandatory for single zone air conditioners and heat pumps) and §141.0(b)2Ei (Prescriptive).
- C If split system operates as a heat pump, heating efficiency must meet Mandatory requirements in §110.2(a) plus the supplemental electric resistance heater control requirements of §110.2(b).
- D If the system has an airside economizer or modulating outside air control or a design flow rate >3,000 cfm and serves a high-density space (≥25 people per 1,000 ft²).
- E If the altered unit has DDC to the zone level, the requirements of §§110.12(a), 110.12(b) and 120.2(h) must be met. Otherwise, the altered unit’s thermostatic controls must comply with JA5, which also includes demand shed control requirements.F If total system nameplate fan power is >5 HP.
- G If >54,000 Btu/h cooling capacity (4.5 tons).
- H If system is Constant Air Volume (CAV) single-zone and serves <5,000 ft² conditioned floor area, and >25% of the duct surface is outdoors or in unconditioned space, including under a roof that has a U-factor greater than the U-factor of the ceiling, or does not meet current Prescriptive insulation requirements.
- I DX cooling systems with ≥65,000 Btu/hr cooling capacity, and chilled water and evaporative systems with fan motors ≥1/4 hp require a minimum of 2 stages of fan control. Systems that include an air side economizer require a minimum of 2 stages of fan control during economizer operation. All systems required to control the space temperature by modulating the airflow to the space have fan power limits at half speed.
- J Duct systems and ventilation systems serving healthcare facilities are exempt from this requirement and must instead be sealed in accordance with the California Mechanical Code.
- K Requires a MERV 13 filter.

## Acceptance Tests: Packaged Units — Single-zone, Constant Air Volume (CAV) — and Split Systems

Change This (and nothing else)	Form NRCA-MCH-02-A: Ventilation Systems Adequate OSA (when ventilation provided by HVAC)	Form NRCA-MCH-03-A: Constant-volume, Single- zone Unitary A/C and HP Temperature Scheduling & Controls for DX units Proper system temperature scheduling & controls for DX units	Form NRCA-MCH-04a-H Form NRCA-MCH-04b-A: Air Distribution Systems <sup>c</sup> Duct leakage rate	Form NRCA-MCH-05-A: Air Economizer Controls Proper operation of economizer controls	Form NRCA-MCH-06-A: Demand Control Ventilation Proper operation of DCV controls	Form NRCA-MCH-11-A: Demand Shed Controls Demand response <sup>E</sup>	Form 2019-NRCA-MCH-19-A: Occupancy Sensor Controls Proper operation of occupancy sensors
Whole Package Unit	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES<sup>B</sup></b>	<b>YES<sup>D</sup></b>	<b>YES</b>	<b>YES</b>
Air Handler, or Cooling or Heating Coil, or Outdoor Condensing Unit	no	<b>YES</b>	<b>YES</b>	no	no	<b>YES</b>	no
Entire Split System	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>
Ductwork <sup>A</sup>	no	no	<b>YES</b>	no	no	no	no
New or Replacement Ducts and Whole Pkg Unit or Split System	<b>YES<sup>B</sup></b>	<b>YES</b>	<b>YES</b>	<b>YES<sup>B</sup></b>	<b>YES<sup>D</sup></b>	<b>YES</b>	<b>YES</b>

**NOTE: For Nonresidential HVAC systems, a change in blower motor, compressor or condenser coil is considered a repair and does not trigger the Energy Code. However, repairs must not increase the pre-existing energy consumption of the repaired component, system or equipment.**

- A Check with your local building department to see if changes to duct work only will require a permit.
- B If the system has a factory-installed economizer that is certified operational by the manufacturer to the California Energy Commission's economizer quality control requirements, the in-field functional tests do not have to be conducted. Regardless of whether the economizer is field- or factory-installed, complete the construction inspection, including the compliance with high temperature lockout temperature setpoints.
- C If ducts are for a single-zone CAV unit serving <5,000 ft<sup>2</sup> and if >25% duct surface area is in unconditioned space or outdoors. The [NRCA-MCH-04a-H](#) Air Distribution Duct Leakage form documents HERS verification and should be submitted to the HERS registry by a HERS provider. The [NRCA-MCH-04b-A](#) Air Distribution Duct Leakage form documents Acceptance Testing as performed by an Acceptance Test Technician.
- D If system is single-zone with any controls or multi-zone with direct digital controls (DDC), and has airside economizer, and serves a high-density space (≥25 people per 1,000 ft<sup>2</sup>).
- E The acceptance test requirement only applies if the unit has DDC controls.

## For More Information

### Primary Sources

- Energy Code Section 110.2 – Mandatory Requirements for Space-Conditioning Equipment:  
[energycodeace.com/site/custom/public/reference-ace-2019/Documents/section1102mandatoryrequirementsforspaceconditioningequipment.htm](http://energycodeace.com/site/custom/public/reference-ace-2019/Documents/section1102mandatoryrequirementsforspaceconditioningequipment.htm)
- Energy Code Section 110.12 – Mandatory Requirements for Demand Management:  
[energycodeace.com/site/custom/public/reference-ace-2019/index.html#1Documents/section11012mandatoryrequirementsfordemandmanagement.htm](http://energycodeace.com/site/custom/public/reference-ace-2019/index.html#1Documents/section11012mandatoryrequirementsfordemandmanagement.htm)
- Energy Code Section 120.1 – Requirements for Ventilation:  
[energycodeace.com/site/custom/public/reference-ace-2019/Documents/section1201requirementsforventilationandindoorairquality.htm](http://energycodeace.com/site/custom/public/reference-ace-2019/Documents/section1201requirementsforventilationandindoorairquality.htm)
- Energy Code Section 120.2 – Required Controls for Space-Conditioning Systems:  
[energycodeace.com/site/custom/public/reference-ace-2019/Documents/section1202requiredcontrolsforspaceconditioningsystems.htm](http://energycodeace.com/site/custom/public/reference-ace-2019/Documents/section1202requiredcontrolsforspaceconditioningsystems.htm)
- Energy Code Section 120.4 – Requirements for Air Distribution System Ducts and Plenums:  
[energycodeace.com/site/custom/public/reference-ace-2019/Documents/section1204requirementsforairdistributionsystemductsandplenums.htm](http://energycodeace.com/site/custom/public/reference-ace-2019/Documents/section1204requirementsforairdistributionsystemductsandplenums.htm)
- Energy Code Section 140.4 – Prescriptive Requirements for Space Conditioning Systems:  
[energycodeace.com/site/custom/public/reference-ace-2019/Documents/section1404prescriptiverequirementsforspaceconditioningsystems.htm](http://energycodeace.com/site/custom/public/reference-ace-2019/Documents/section1404prescriptiverequirementsforspaceconditioningsystems.htm)
- Energy Code Joint Reference Appendix 5 (JA5) – Technical Specifications For Occupant Controlled Smart Thermostats  
[energycodeace.com/site/custom/public/reference-ace-2019/Documents/appendixja5technicalspecificationsforoccupantcontrolledsmarthther.htm](http://energycodeace.com/site/custom/public/reference-ace-2019/Documents/appendixja5technicalspecificationsforoccupantcontrolledsmarthther.htm)

### California Energy Commission Information & Services

- Energy Code Hotline: 1-800-772-3300 (Free) or [Title24@energy.ca.gov](mailto:Title24@energy.ca.gov)
- Online Resource Center:  
[www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/online-resource-center](http://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/online-resource-center)
  - The Energy Commission’s main web portal for the Energy Code, including information, documents and historical information

### Additional Resources

- Energy Code Ace:  
[EnergyCodeAce.com](http://EnergyCodeAce.com)
  - An online “one-stop-shop” providing free resources and training to help appliance and building industry professionals decode and comply with Title 24, Part 6 and Title 20. The site is administered by California’s investor-owned utilities.  
Please register with the site and select an industry role for your profile in order to receive messages about all our free 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.

© 2019 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.