2019 ENERGY CODE

Ace Resources Title 24, Part 6 Triggers

Nonresidential - Commercial

Refrigeration System Features

Application: Retail food stores with ≥ 8000 ft² of conditioned area that use either refrigerated display cases, or walk-in coolers or freezers.

	Mandatory Requirements							
					Lighting Control §120.6(b)3A, §120.6(b)3B			
Refrigeration Component Used	Variable Speed Fan Control [D] §120.6(b)1A	Variable Setpoint Control §§120.6(b)1B, C, D	Floating Suction Pressure [F] §120.6(b)2A	Liquid Subcooling [C] §120.6(b)2B	Timed Overrides: Allow ON <1 hour	Manual Overrides: Turn OFF after <1 hour	Motion Sensor: Reduce power by 50% (min.) within 30 min. after the area is vacated	Heat Recovery [G] §120.6(b)4 Minimum 25% of THR
Condensers [A, B, H]	**YES**	**YES** [E]	no	no	no	no	no	**YES** [G]
Compressors	no	no	**YES**	**YES**	no	no	no	no
Refrigerated Display Cases	no	no	no	no	**YES**	**YES**	**YES**	no

A Minimum condensing temperature set point ≤ 70°F. Refer to Table 1 below for Minimum Specific Efficiency Requirements. Air-cooled condensers, except microchannel condensers and reused condensers, must have a fin density no greater than 10 fins per inch.

B Not applicable to new condenser replacement where compressor system Total Heat of Rejection (THR) is not increased, and less than 25% of the attached compressors and attached display cases are new.

C Requires low temperature systems with a design capacity ≥ 100,000 Btu/hr and a saturated suction temperature ≤ 10°F to have (1) subcooled liquid temperature at ≤ 50°F and (2) saturated suction temperature operation at ≥ 18°F.

D For fan-powered condensers and gas coolers.

E Based on ambient drybulb for air-cooled condensers and adiabatic condensers in all Climate Zones except 16. For evaporative-cooled condensers, variable setpoint control is based on ambient wetbulb temperature.

F Not applicable to single compressor systems without continuous variable capacity and suction groups that comprise the high side of a two-stage or cascade systems, or have design saturated suction temperature of >30°F, or primarily serve chillers.

G Only if THR for individual refrigeration system is ≥ 150,000 Btu/hr at design conditions. Exempt for sites in Climate Zone 15 with systems that are reused for an addition or alteration.

H All transcritical CO_2 refrigerated systems are required to have variable speed fan control, but are exempt from variable setpoint control logic, condensing temperatures and efficiency requirements listed in Sections 120.6(b)1B, C, D, E, F and G.

Condenser Type	Minimum Specific Efficiency	Rating Condition
Evaporative-Cooled with THR Capacity >8,000 MBH	350 Btuh/W	100°F Saturated Condensing Temperature (SCT), 70°F Outdoor Wetbulb Temperature
Evaporative-Cooled with THR Capacity <8,000 MBH and Indoor Evaporative-Cooled	160 Btuh/W	100°F SCT, 70°F Outdoor Wetbulb Temperature
Air-Cooled	665 Btuh/W Halocarbon 75 Btuh/W Ammonia	105°F SCT, 95°F Outdoor Drybulb Temperature
Adiabatic Dry Mode	45 Btu/W Halocarbon	105°F SCT, 95°F Entering DryBulb Temperature

Table 1: Fan-powered Condensers - Minimum Efficiency Requirements
Source: Table 120.6-C in §120.6(b)

For More Information

Primary Sources

- Energy Code Section 120.6(b) - Mandatory Requirements for Commercial Refrigeration
  energycodeace.com/site/custom/public/reference-ace-2019/Documents/section1206mandatoryrequirementsforcoveredprocesses.htm

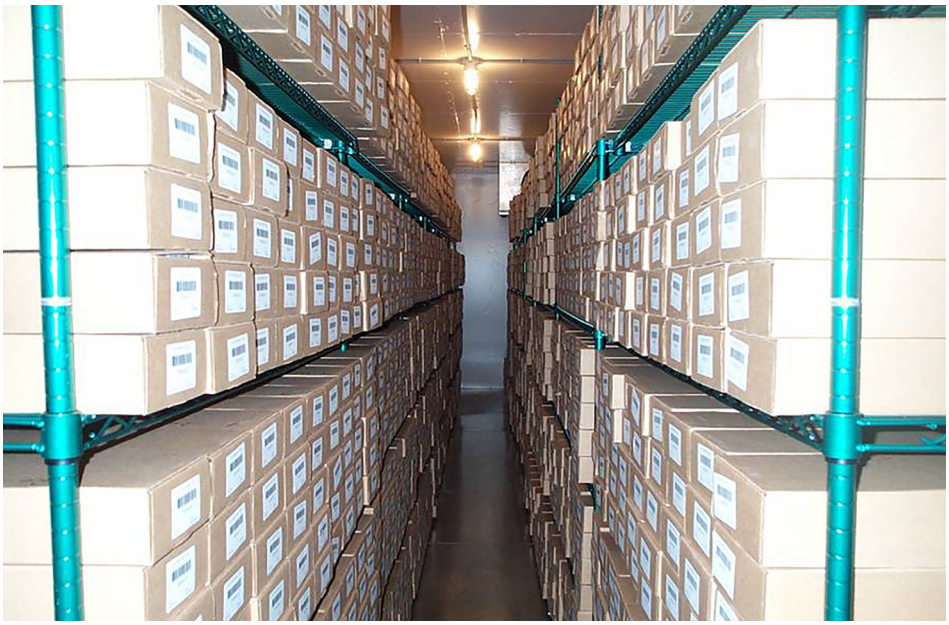
California Energy Commission Information & Services

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

Additional Resources

- Energy Code Ace:
  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!



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