

Climate Zone 7 Recommendation Table for Small Retail Buildings

	Item	Component	Recommendation (Minimum or Maximum)	How-To Tips in Chapter 5	✓
Envelope	Roof	Insulation entirely above deck	R-25 c.i.	EN1-2, 17, 20-21	
		Metal building	R-16 + R-19	EN1, 3, 17, 20-21	
		Attic and other	R-60	EN4, 17-18, 20-21	
		Single rafter	R-38 + R-10 c.i.	EN5, 17, 20-21	
		Solar reflectance index (SRI)	No recommendation	EN1	
	Walls	Mass (HC > 7 Btu/ft ²)	R-15.2 c.i.	EN6, 17, 20-21	
		Metal building	R-13 + R-13	EN7, 17, 20-21	
		Steel framed	R-13 + R-7.5 c.i.	EN8, 17, 20-21	
		Wood framed and other	R-13 + R-7.5 c.i.	EN9, 17, 20-21	
		Below-grade walls	R-7.5 c.i.	EN10, 17, 20-21	
	Floors	Mass	R-14.6 c.i.	EN11, 17, 20-21	
		Steel framed	R-38	EN12, 17, 20-21	
		Wood framed and other	R-30	EN12, 17, 20-21	
	Slabs	Unheated	R-15 for 24 in.	EN13, 17, 19-21	
		Heated	R-15 full slab	EN14, 17, 19-21	
Doors – Opaque	Swinging	U-0.50	EN15, 20-21		
	Non-swinging	U-0.50	EN16, 20-21		
Vertical Glazing Including Doors	Area (percent of gross wall)	40%	EN22-23, 27, 28, 30		
	Thermal transmittance	U-0.38	EN22, 25		
	Solar heat gain coefficient (SHGC)	N, S, E, W - 0.41; N only—0.41	EN22		
	Exterior sun control (S, E, W only)	Projection factor > 0.5	EN26, DL3		
Skylights	Area (percent of gross roof)	3%	EN24		
	Thermal transmittance	U-0.69			
	Solar heat gain coefficient (SHGC)	0.64	DL3-10		
Lighting	Interior Lighting	Lighting power density (LPD)	1.3 W/ft ²	EL1, 3, 4, 14, 16-25	
		Linear fluorescent with high-performance electronic ballast	91 mean lm/W	EL7, 8	
		All other sources	50 mean lm/W	EL9,10	
		Dimming controls for daylight harvesting under skylights	Dim fixtures within 10 ft of skylight edge	DL1-9, EL15	
		Occupancy controls	Auto-off all non-sales rooms	EL13	
		Interior room surface reflectances in locations with daylighting	80%+ on ceilings, 70%+ on walls	DL2, EL5	
	Additional Interior Lighting for Sales Floor	Additional LPD for adjustable lighting equipment that is specifically designed and directed to highlight merchandise and is automatically controlled separately from the general lighting	0.4 W/ft ² (spaces not listed below) 0.6 W/ft ² (sporting goods, small electronics) 0.9 W/ft ² (furniture, clothing, cosmetics, and artwork) 1.5 W/ft ² (jewelry, crystal, china)	EL1, 2, 10, 11, 14, 20, 21	
		Sources	Halogen IR or CMH	EL10-12	
	Exterior Lighting	Façade and externally illuminated signage lighting	0.2 W/ft ²	EX2, 3, EL5, EL7-12	
	HVAC	HVAC	Air conditioner (0-65 kBtuh)	13.0 SEER	HV1-4, 6, 12, 16-17, 20
Air conditioner (>65-135 kBtuh)			No recommendation	HV1-4, 6, 12, 16-17, 20	
Air conditioner (>135-240 kBtuh)			No recommendation	HV1-4, 6, 12, 16-17, 20	
Air conditioner (>240 kBtuh)			No recommendation	HV1-4, 6, 12, 16-17, 20	
Gas furnace (0-225 kBtuh - SP)			80% AFUE or E _t	HV1-2, 6, 16, 20	
Gas furnace (0-225 kBtuh - Split)			90% AFUE or E _t	HV1-2, 6, 16, 20	
Gas furnace (>225 kBtuh)			80% E _c	HV1-2, 6, 16, 20	
Heat pump (0-65 kBtuh)			13.0 SEER/7.7 HSPF	HV1-4, 6, 12, 16-17, 20	
Heat pump (>65-135 kBtuh)			No recommendation	HV1-4, 6, 12, 16-17, 20	
Heat pump (>135 kBtuh)		No recommendation	HV1-4, 6, 12, 16-17, 20		
Economizer		Air conditioners & heat pumps- SP	No recommendation	HV23	
Ventilation		Outdoor air damper	Motorized control	HV7-8	
		Demand control	CO ₂ sensors	HV7, 22	
		Ducts	Friction rate	0.08 in. w.c./100 ft	HV9, 18
Ducts	Sealing	Seal class B	HV11		
	Location	Interior only	HV9		
	Insulation level	R-6	HV10		
	SWH	Service Water Heating	Gas storage (> 75 kBtuh)	90% E _t	WH1-4
Gas Instantaneous			0.81 EF or 81% E _t	WH1-4	
Electric storage (≤ 12 kW and > 20 gal)			EF > 0.99 – 0.0012xVolume	WH1-4	
Pipe insulation (d < 1½ in./ d ≥ 1½ in.)			1 in./ 1½ in.	WH6	

Note: If the table contains “No recommendation” for a component, the user must meet the more stringent of either Standard 90.1 or the local code requirements in order to reach the 30% savings target.

Zone 8



Alaska

- Bethel (CA)
- Dillingham (CA)
- Fairbanks North Star
- Nome (CA)
- North Slope
- Northwest Arctic
- Southeast Fairbanks (CA)
- Wade Hampton (CA)
- Yukon-Koyukuk (CA)