Building Envelope Requirements List, pg 1 of 9

The following information is necessary to check a building permit application for compliance with the building envelope requirements in the Washington State Energy Code, Commercial Provisions.

For questions about this report, contact WSEC Commercial Technical Support at 360-539-5300 or via email at com.techsupport@waenergycodes.com

Project:
Wesley Bradley Park Phase 2 Care Center - 2018 WSEC
707 39th Ave. SE
Puyallup, WA 98374

City of Puyallup Building ACCEPTED
JMontgomery
05/22/2024
7:34:54 AM

Date: 2024-03-13

Applies	Code Section	Component	Compliance Information Required In Permit Documentation	Location in Documents	Building Department Notes
SCOPE					
	C103.1	Construction documents - General	For a tenant space (first build-out) project, indicate if there is no envelope scope included in the project.		
	C103.1	Construction documents - General	For an alteration project, indicate if there is no envelope scope included in the project.		
	C402.1.1.1	Low energy spaces	Identify low energy spaces on plans; include calculations if applicable that demonstrate eligibility for envelope provisions exemption		
	C402.1.1.2	Semi-heated spaces	Identify semi-heated spaces on plans, include mechanical heating system type and calculations that demonstrate eligibility for wall insulation exemption		
	C402.1.1.3	Greenhouse spaces	Identify greenhouse spaces on plans; include non-opaque assembly information and mechanical heating system type if applicable, that demonstrates eligibility for envelope provisions exemption		
	C402.1.2	Equipment buildings	Provide building sf area, average wall and roof U-factor, installed electrical and mechanical equipment information and heating setpoint restriction, that demonstrates eligibility for envelope provisions exemption		
NA	C402.1.2.1	Standalone elevator hoistways	Provide building area, average wall and roof U-factor, installed mechanical equipment information and heating setpoint restriction, that demonstrates eligibility for envelope provisions exemption		
	C410.2	Walk-in cooler and freezer spaces	Identify walk-in cooler and freezer spaces on plans; including site assembled, site constructed and prefabricated units		
			Identify warehouse cooler and freezer spaces on plans		
	C101.4.1	Mixed residential & commercial building	Identify spaces with different occupancy requirements on plans		
	C503.2	Change of space conditioning alteration	Identify on plans existing unconditioned spaces changing to semi-heated or conditioned space, and existing semi-heated spaces changing to conditioned space; provide calculations for existing and final level of space conditioning		
	C505.1	Change of occupancy alteration	Identify on plans existing F, S and U-occupancy spaces undergoing a change in occupancy and final occupancy type		

FULL SIZED LEDGIBLE COLOR REPORT IS REQUIRED TO BE PROVIDED BY THE PERMITTEE ON SITE FOR ALL INSPECTIONS

PRCNC20240424

			Group R spaces permitted before July 1, 2002 that are undergoing a change to a commercial occupancy shall be identified on plans		
			Commercial (non-Group R) occupancy spaces undergoing a change to Group R shall be identified on plans		
ENVELOPE PROVISIONS					
YES	C103.2 C103.6.3 C402.1.3 C402.1.4 C402.1.5	Compliance documentation	Indicate envelope thermal performance compliance path (prescriptive or component performance) and provide WSEC envelope compliance reports	AC0.0	
NO			If complying via component performance, demonstrate that the Proposed Total UA is equal to or less than the Allowable Total UA		
			If complying via total building performance, provide a list of all proposed envelope component types, areas and U-values		
YES	C303.1.1 C303.1.2	Insulation identification	Indicate identification mark shall be applied to all insulation materials and insulation installed such that the mark is readily observable during inspection	See spec section 07 21 00	
YES	C303.1.3 C402.4.3	Fenestration product rating	Indicate fenestration products shall be labeled with NFRC U-factor, SHGC, VT and leakage rating, or if products do not have an NFRC rating, indicate applicable Chapter 3 default values	See factors noted on Sheet A11.1	
YES	C303.1.1 C402.2.1	General insulation installation	Indicate installation methods, thicknesses, densities and clearances to achieve the intended R-value of all insulation materials	See AC0.0 and Assembly types on A5 Series sheets indicating required R-values. Spec section 07 21 00 also specifies R-values per inch. Due to manufacturer differences, final thicknesses are coordinated with submittals.	
YES			Where two or more layers of rigid insulation will be used, indicate that edge joints between layers are staggered, or exception taken	See spec section 07 53 00 (2.02)(C)(1)	
YES	C103.2 C402.2.1	Roof assembly insulation	Indicate R-value(s) of cavity/continuous insulation on roof sections	A4 & 5 Series Sheets/Assembly types listed	
YES			Indicate framing materials on roof sections	A5 Series Sheets/Assembly types listed	
YES			Indicate method of framing for ceilings below vented attics and vaulted ceilings per A102.2 (std, adv)	AC0.0	

NO			Provide area weighted average U-factor calculation for insulation whose thickness varies by 1 inch or less		
NA			Indicate effective U-factors of tapered insulation entirely above deck per A102.2.6; include roof configuration and slope, maximum R-value at peak and minimum R-value at low point for all roof surfaces		
NA			Indicate R-values for thermal spacers and each insulation layer, and liner system (LS) method for metal building roofs		
	C402.2.1.1	Skylight curb insulation	Indicate skylight curb insulation R-value on roof section, if not included in skylight NFRC rating		
YES	C402.2.1.2	Rooftop HVAC equipment curbs	Indicate rooftop HVAC equipment curb insulation R-value on roof section	7/A6.6	
YES	C103.2 C402.2.3 C402.2.4 C303.2.1	Above/below grade wall insulation	Indicate R-value(s) of cavity/continuous insulation on wall sections	See Wall types Sheet A10.1	
YES			Indicate framing materials on wall sections	See Wall types Sheet A10.1 & A5 Series sheets	
NA			Indicate method of framing for wood construction per A103.2 (std, int, adv)		
			Indicate material density category, wall weight and heat capacity for qualifying mass walls		
NA			For qualifying ASTM C90 masonry walls, indicate loose-fill core insulation material and percentage of cores filled including grouted cores, bond beams, vertical fills, headers and any other grouted cores		
NA			Indicate method of protection of exposed exterior basement/crawlspace wall insulation		
YES	C103.2 C402.4.4	Opaque doors	Indicate rated U-factor or R-value (non-swinging) on wall sections or in door schedules - applies to doors with less than 50% glazed area	See door schedule COMMENTS section	
NA	C402.4.4	Garage doors	Indicate rated U-factor for sectional and tilt-up garage doors on wall sections or in door schedules - applies to garage doors with less than 14% glazed area; all other garage doors shall comply as opaque doors		
YES	C402.2.5	Floor over outdoor or unconditioned space insulation	Indicate R-value(s) of cavity/continuous insulation on floor sections	See AC0.0 & A5 series Sheets/Assembly types	
YES			Indicate framing material on floor sections	See A4 & A5 Series Sheets	
			Indicate material density category and weight of qualifying mass floors		

YES	C402.2.6 C303.2.1	Slab-on-grade floor insulation	Indicate R-value of continuous insulation on wall section or foundation detail	See Sheet A6.1 for foundation details; A10.1 Exterior & foundation wall types	
YES			Indicate insulation extends down vertically and/or horizontally the required distance from top of slab	See Wall Type CF on Sheet A10.1 & foundation details Sheet A6.1	
YES			Indicate method of protection of exposed exterior slab edge insulation	See A5 Series Sheets and referenced details	
NA			Indicate R-value of continuous insulation on wall section or foundation detail		
NA			Indicate insulation extends down vertically from top of slab and then horizontally under the entire slab		
NA			Indicate method of protection of exposed exterior slab edge insulation		
NA	C402.2.8	Radiant heating system insulation	Indicate insulation R-value behind radiant panels, U-bend/headers and bottom surface of radiantly heated floors (other than heated slab-on-grade)		
YES	C402.4.1 C502.2.1	Vertical fenestration maximum area	Provide total gross sf area of all above grade wall elements and rough opening sf area of all vertical fenestration elements in the building, for the prescriptive max allowed window-to-wall ratio (WWR) calculation in the WSEC envelope compliance reports; demonstrate compliance for each space conditioning category separately	See AC0.0	
	C402.4.1.1 C405.2.4.1 C502.2.1	Increased prescriptive maximum vertical fenestration area with daylight zones and controls	Provide calculations showing that not less that 50% of the total conditioned floor area is within a daylight zone; demonstrate compliance for each space conditioning category separately		
			Indicate in envelope plans that all lighting fixtures located within daylight zones shall be provided with daylight responsive controls per Section C405.2.4.1		
			Indicate that the VT of vertical fenestration is at least 1.1 times the rated SHGC or no less than VT-0.55, whichever is greater		
	C402.4.1.3 C502.2.1	Increased prescriptive maximum vertical fenestration area with high-performance glazing	Indicate high performance U-factors and SHGC values in fenestration schedules		
			Indicate if an area-weighted U-factor is used for multiple fenestration elements within the same fenestration category per Table C402.4; provide area-weighted U-factor calculation		

	C402.1.5	Wall/vertical fenestration target area adjustment	Indicate if component performance with target area adjustment will be used to account for vertical fenestration area in excess of the prescriptive maximum allowed; include target area adjustment in WSEC envelope compliance reports		
	C402.4.1 C502.2.2	Skylight maximum area	Provide total gross sf area of roof, and rough opening sf area of all skylight elements in the building, for the prescriptive max allowed skylight-to-roof ratio (SRR) calculation in the WSEC envelope compliance reports; demonstrate compliance for each space conditioning category separately		
	C402.1.5.2	Roof/skylight target area adjustment	Indicate if component performance with target area adjustment will be used to account for skylight area in excess of the prescriptive maximum allowed; include target area adjustment in WSEC envelope compliance reports		
YES	C402.4 C402.4.3.4 C303.1.3	U-factors, SHGC and VT for all fenestration assemblies	Indicate U-factors, SHGC and VT values in fenestration schedules	A11.1	
YES			Indicate if an area-weighted U-factor is used for multiple fenestration elements within the same fenestration category per Table C402.4; provide area-weighted U-factor calculation	See AC0.0	
YES			Indicate if values are NFRC or default; if default then specify frame type, glazing layers, gap width, low-e coatings, gas-fill	All factors are from the manufacturer	
NA	C402.4.3	Permanent shading devices	For each group of windows with similar orientation and overhang or permanent projection geometry, provide projection factor calculations (Equation C4-6) for north and non-north orientations		
	C402.4.2	Single story spaces requiring skylights	Provide list of enclosed, single story spaces that exceed 2,500 sf; for each space identify the space use, floor area, floor to ceiling height, whether skylights are installed, and any exception taken		
			Provide calculations for percentage of conditioned floor area located within a toplit daylight zone; if exception is taken for spaces where the total floor area minus the sidelit zone area is less than 2,500 sf, include percentage of conditioned floor area located within a sidelit daylight zone in calculations		
			Provide calculations for percentage of skylight area in each space over 2,500 SF, OR		
			Provide calculations for skylight effective aperture (Equation C4-5) for each space over 2,500 SF		
			Indicate haze factor of skylight glazing material or diffuser		

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	C410.2	Walk-in and warehouse cooler and freezer envelope	Indicate insulation R-value in cooler and freezer wall and ceiling assemblies		
			Indicate cooler and freezer door insulation R-value; indicate method of minimizing infiltration (strip doors, curtains, spring-hinged doors, etc); provide automatic door closure (or note exception taken)		
			For transparent reach-in doors and fixed windows, indicate number of glass panes (double or triple pane); identify whether the interstitial spaces between panes is filled with inert gas or if panes are heat-reflective treated glass		
ADDITIONAL EFFICIENCY CREDITS - ENHANCED ENVELOPE PERFORMANCE					
NA	C406.10	Enhanced envelope performance	To comply with additional efficiency credit, demonstrate envelope thermal performance compliance via component performance; provide WSEC envelope compliance reports that demonstrate Proposed Total UA is 15% lower than the Allowable Total UA		
AIR LEAKAGE					
YES	C402.5.1.1	Air barrier construction and sealing	Identify location and provide diagram of continuous air barrier in plans and sections	3 & 3A/A6.3	
YES			Provide details for all joints, transitions in materials, penetrations in air barrier and note method of sealing (caulked, gasketed, or other approved method)	A6 series details	
NA	C402.5.3 C402.1.3 C402.1.4	Rooms containing fuel burning space conditioning appliances	For room(s) located within the conditioned space that contain non-direct vent fuel-burning appliances that require outdoor air for combustion, indicate method of isolation from the conditioned space; include sealing of walls, floor and ceiling of room, doorway gasketting and sealing around ductwork and piping penetrations		
NA			Indicate walls, floor and ceiling of the room envelope are insulated to the same level required for exterior envelope, and combustion air ductwork that passes thru conditioned space is insulated to at least R-8		
YES	C402.5.4	Doors and access openings to shafts, chutes, stairways and elevator lobbies	Indicate locations of all doors and access openings to shafts, chutes, stairways and elevator lobbies		
YES			Indicate method of sealing of these openings (gasketing, weatherstripping, other sealing method); or exception taken		
NO	C402.5.5 C403.7.8	Outdoor air intakes, exhausts and relief openings	Indicate locations of all stairway enclosure, elevator shaft and building pressurization relief openings, outside air intakes and exhaust openings		

			Note in envelope plans that all relief, outside air intake and exhaust openings shall be provided with dampers in accordance with Mechanical Section C403.7.8		
YES	C402.5.8	Recessed lighting in building envelope	Indicate method of sealing between light fixture housing and wall or ceiling	Roof attic is unvented - all ceiling mounted lights are within conditioned space. See Air sealing notes on Sheet A6.3	
NA			Note in envelope plans that all recessed lighting fixtures shall be IC rated and have an air leakage rating not greater than 2 cfm per ASTM E283 test; include these requirements in lighting fixture schedules		
NA	C402.5.6	Loading dock seals	Indicate weather seal at cargo and loading dock doors		
YES	C402.5.7	Vestibules	Indicate locations and dimensions of vestibules for building entrances; also indicate vestibule information for exit-only doors in buildings where separate doors for entering and exiting are provided	See Sheet A1.1S	
NA			Indicate locations of all building entrances and exit-only doors provided with an air curtain in lieu of a vestibule		
NA			Indicate exception and criteria utilized for all building entrances and exit-only doors that do not have a vestibule or air curtain		
NA			Indicate required performance for air curtains installed per Exception 7		
NA			For unconditioned vestibules, indicate which envelope assembly (interior or exterior) complies with the requirements for a conditioned space		
YES	C103.2 C402.5.1.2C 402.5.1.2.1 R402.4.1.2	Building enclosure air leakage test	Indicate in project documents that building enclosure air leakage testing is required for WSEC compliance	AC0.0; Spec Section 01 41 00	
YES			Provide area calculations that account for all six sides of the air barrier boundaries	See AC0,0	
NO			For commercial buildings, indicate that building enclosure air leakage testing shall be performed per ASTM C779 (or equivalent method approved by the code official) and the target leakage rate is 0.25 cfm/ft2 (1.5 L/s*m2) at 0.3 in. wg (75 Pa)	See C406.9 below	

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NA			If the building is mixed residential / commercial and three stories or less above grade plane, indicate which building enclosure air leakage test procedure will be used for the Group R-2 / R-3 areas (Section R402.4.1.2 or C402.5.1.2); if per R402.4.1.2, indicate that the target leakage rate is 5 air changes per hour at 0.2 in. wg (50 Pa)		
YES			Include the following requirements in project documents: (1) Submit building enclosure air leakage test reports to jurisdiction and owner; (2) If initial test result exceeds 0.25 cfm/ft2 (1.5 L/s*m2), indicate that inspection and all practical corrective actions be completed and documented in the air leakage test report; (3) If initial test result exceeds 0.40 cfm/ft2 (2.0 L/s*m2), indicate that corrective actions shall also include re-testing; (4) Indicate that corrective measures and retesting must be repeated until the test result is 0.40 cfm/ft2 (2.0 L/s*m2) or less; (4) Include air barrier test report in project close out documentation provided to building owner.	Air leakage test are required per the spec	
ADDITIONAL EFFICIENCY CREDITS - REDUCED AIR INFILTRATION					
YES	C406.9	Reduced air infiltration	To comply with additional efficiency credit, indicate in project documents that the building enclosure air leakage test results shall not exceed 0.17 cfm/ft2 at 0.3 in. wg (75 Pa); all documentation requirements per C103.2 and C402.5.1.2 apply	See AC0.0	
ALTERATIONS					
	C503.1 C503.3.1	Roof alteration - insulation	For a roof alteration where existing ceiling cavities are exposed, indicate cavities are insulated to full depth at minimum nominal value of R-3.0 per inch		
			For a roof covering replacement where insulation is installed entirely above the roof deck, indicate insulation complies with requirements for new construction per Tables C402.1.3 or C402.1.4		
	C503.1	Wall and floor alteration - insulation	For a wall or floor alteration (floor over outdoor or unconditioned space) where existing envelope cavities are exposed, indicate cavities are insulated to full depth at minimum nominal value of R-3.0 per inch		

	C503.3.2	Addition of vertical fenestration	Where the addition of new vertical fenestration results in a window-to-wall ratio (WWR) exceeding the prescriptive maximum allowed per C402.4.1, demonstrate method of compliance (prescriptive vertical fenestration alternate, component performance with target area adjustment for the alteration area and existing-to-remain areas combined, or total building performance per C407); demonstrate for each space conditioning category separately		
	C503.3.3	Addition of skylights	Where the addition of new skylights results in a skylight-to-roof ratio (SRR) exceeding the prescriptive maximum allowed per C402.4.1, demonstrate method of compliance (component performance compliance with target area adjustment for the alteration area and existing-to-remain areas combined, or total building performance per C407), demonstrate for each space conditioning category separately		
NA	C103.2 C103.6.3 C503.2 C505.1	Change in space conditioning or occupancy compliance documentation	Indicate envelope alteration thermal performance compliance path (prescriptive or component performance with 110% allowance); provide WSEC envelope compliance reports		
NA	C103.2 C103.6.3 C503.2C 505.1	Change in space conditioning or occupancy compliance documentation	If complying via total building performance with 110% allowance, provide a list of all proposed envelope component types, areas and U-values		
PROJECT CLOSE OUT DOCUMENTATION					
YES	C103.6.3	Project close out documentation requirements	Indicate in plans that project close out documentation is required including applicable calculations, WSEC envelope compliance reports, and fenestration NFRC rating certificates		
If "no" is selected for any question, provide explanation.					