

MECHANICAL COMPLIANCE SUMMARY

2021 WSEC Compliance Forms for Commercial Buildings including Group R1, R2, and Group R3 & R4 over 3 stories

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Project & Applicant Information	Project Title	Wesley Bradley Park Phase 2 - Care Center - 2021 WSEC	For Building Department Use: PRCNC20240424	Date: Dec 3, 2024
	Project Address	707 39th Ave. SE Puyallup, WA 98374		
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Mechanical Compliance Summary Scope - Compliance verification provided in this report is limited to code minimum efficiency requirements for mechanical equipment types defined in Tables C403.3.2(1) through C403.3.2(16) of the 2021 WSEC-C. This includes efficiency multipliers for economizer exceptions. Performance criteria for additional energy efficiency and load management measures ARE NOT included in this report. Additional documentation is required to demonstrate compliance with all other provisions of the energy code, including better than code efficiency criteria for Section C406. For questions about this report, contact WSEC Commercial Technical Support at 360-539-5300 or via email at com.techsupport@waenergycodes.com.

General Occupancy	All Commercial		General Building Use Type(s)	Healthcare, Senior Care Community	Building Cond. Floor Area	37,315
General Project Types	New Building	New Building or Addition Mechanical Scope	Central Plant Systems Single Zone Systems & Equipment Multiple Zone Systems & Equipment	Alteration Mechanical Scope	Project Cond. Floor Area	37,315
					Floors Above Grade	1
					Overall Compliance Path	General Prescriptive
Mechanical Project Description	VRF System for heating and cooling with two DOAS with ERV to provide ventilation air.					

Mechanical Compliance Scope and Method	Project Type	Mechanical Scope	Economizer Exception(s) Applied?	DOAS Ventilation Provided?	Equipment Efficiency Compliance Verification	
	Building Addition	Central Plant Systems	Yes	NA	COMPLIES	
	New Building	Single Zone Systems & Equipment	Yes	Yes	COMPLIES	
	New Building	Multiple Zone Systems & Equipment	Yes	Yes	COMPLIES	
Additional Energy Efficiency Measures (AEM)	No mechanical additional energy efficiency measures included in project			Load Management Measures (LDM)	HVAC load management	
Does building include occupancy classifications requiring DOAS?			Yes	Does project include DOAS equipment?		Yes
Based on project scope do TSPR requirements apply?			No	Do all systems comply with Appendix D standard reference design or qualify for an exception to TSPR?		Yes

Scope & Space Conditioning	BUILDING ADDITION - CENTRAL PLANT SYSTEMS	Compliance Verification	COMPLIES
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VRF Multi-Split Systems Category - Heat pump outdoor unit

Cooling Equipment Efficiency Information												
System ID	Cooling System Type	Specific Type	Cooling Capacity (Btu/h)	Econo Exception Multipliers (Full/IPLV)		Required Full Load Efficiency (Code Min + Econo)	Required Part Load Efficiency (Code Min + Econo)	Proposed Cooling Efficiency	CE Units	Proposed Part Load Efficiency	PL Units	Efficiency Compliance Verification
CU-1,2,3,4	VRF air-cooled HP	Heat pump w/ heat recovery	216,000	0	0	10.4	13.7	12.7	EER	20.5	IEER	COMPLIES

Heating Equipment Efficiency Information												
System ID	Heating System Type	Specific Type	Heat Pump Heating Capacity (Btu/h)	Cooling Capacity (Btu/h) (Identical to Cooling Table)	Required Heat Pump Heating Efficiency	Required Low Water Temp Efficiency	Proposed Heat Pump Heating Efficiency	HE Units	Proposed Low Water Temp Efficiency	LWTH Units	Efficiency Compliance Verification	

Equipment Details			
System ID	Location in Project Documents - Plan/Detail #	Quantity of Fan Coil Units in VRF System	System/Equip Compliance Path
CU-1,2,3,4	M2.0A, M2.1B, ME1.1	60	General Prescriptive
	WSEC Equipment Efficiency Reference Table: Table C403.3.2(9) VRF Air-to-Air & Water Source Heat Pumps		Air-side economizer exception applied?: Exp 1 - DOAS paired with cooling system (Note equip location limitations)
	Economizer Compliance Method: Economizer not required		

Scope & Space Conditioning	NEW BUILDING - SINGLE ZONE SYSTEMS & EQUIPMENT	Compliance Verification	COMPLIES
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Single Zone Air Systems Category - Fan coil unit, hydronic & VRF

Air Systems Summary Information						
System/Equip ID	Quantity of Items	Supply Airflow Control	Ventilation Standard	Ventilation CFM (Total if Multiple Items)	Ventilation Air Source	Paired with DOAS
FC-1, 3, 7, 8, 9, 10, 11, 21	8	Constant volume	ASHRAE Standard 62.1	1045	Other System	
FC-12, 19, 20	3	Constant volume	ASHRAE Standard 62.1	350	Other System	
FC-13, 15, 17, 18, 22	5	Constant volume	ASHRAE Standard 62.1	905	Other System	
FC-2, 14, 16	3	Constant volume	ASHRAE Standard 62.1	700	Other System	
FC-4		Constant volume	ASHRAE Standard 62.1	65	Other System	
FC-5, 6, 24, 25	4	Constant volume	ASHRAE Standard 62.1	470	Other System	
FC-A	32	Constant volume	ASHRAE Standard 62.1	2720	Other System	
FC-B, FC-23	5	Constant volume	ASHRAE Standard 62.1	285	Other System	

Air Systems & Equipment - Cooling			
System/Equip ID	Cooling System/Equip Type	Specific Type	Cooling Capacity per item (Btu/h)
FC-1, 3, 7, 8, 9, 10, 11, 21	Fan coils, hydronic & VRF, cooling	VRF	24,000
FC-2, 14, 16	Fan coils, hydronic & VRF, cooling	VRF	30,000
FC-4	Fan coils, hydronic & VRF, cooling	VRF	9,000
FC-5, 6, 24, 25	Fan coils, hydronic & VRF, cooling	VRF	12,000
FC-12, 19, 20	Fan coils, hydronic & VRF, cooling	VRF	18,000
FC-13, 15, 17, 18, 22	Fan coils, hydronic & VRF, cooling	VRF	36,000
FC-A	Fan coils, hydronic & VRF, cooling	VRF	8,000
FC-B, FC-23	Fan coils, hydronic & VRF, cooling	VRF	6,000

Air Systems & Equipment - Heating			
System/Equip ID	Heating System/Equip Type	Specific Type	Heating Output Capacity per item (Btu/h)
FC-1, 3, 7, 8, 9, 10, 11, 21	Fan coils, hydronic & VRF, heating	VRF	27,000
FC-2, 14, 16	Fan coils, hydronic & VRF, heating	VRF	34,000
FC-4	Fan coils, hydronic & VRF, heating	VRF	9,000
FC-5, 6, 24, 25	Fan coils, hydronic & VRF, heating	VRF	13,000
FC-12, 19, 20	Fan coils, hydronic & VRF, heating	VRF	13,000
FC-13, 15, 17, 18, 22	Fan coils, hydronic & VRF, heating	VRF	40,000
FC-A	Fan coils, hydronic & VRF, heating	VRF	9,000
FC-B, FC-23	Fan coils, hydronic & VRF, heating	VRF	6,700

Air Systems & Equipment Details			
System/Equip ID	Discrete Area(s) Served	Location In Project Documents - Plan/Detail #	System/Equip Compliance Path
FC-1, 3, 7, 8, 9, 10, 11, 21	Office, Education, Dayroom, Corridors, Conf Room, Nurse	M2.0A, M2.1A, M2.2A, ME1.1	General Prescriptive
	Cooling Capacity Source: CU-1, 2, 3, 4		
	Heating Capacity Source: CU-1, 2, 3, 4		
FC-12, 19, 20	Spa, Office, Director	M2.1A, M2.2B, ME1.1	General Prescriptive
	Cooling Capacity Source: CU-1, 2, 3, 4		
	Heating Capacity Source: CU-1, 2, 3, 4		
FC-13, 15, 17, 18, 22	Serving Kitchen, Dining, Chapel, Commons, Dayroom	M2.1A, M2.2B, M3.2, ME1.1	General Prescriptive
	Cooling Capacity Source: CU-1, 2, 3, 4		
	Heating Capacity Source: CU-1, 2, 3, 4		
FC-2, 14, 16	Staff Breakroom, Therapy	M2.0A, M2.1A, M2.2A, ME1.1	General Prescriptive
	Cooling Capacity Source: CU-1, 2, 3, 4		
	Heating Capacity Source: CU-1, 2, 3, 4		
FC-4	Med Records	M2.0A, ME1.1	General Prescriptive
	Cooling Capacity Source: CU-1, 2, 3, 4		
	Heating Capacity Source: CU-1, 2, 3, 4		
FC-5, 6, 24, 25	Storage, Corridor, Laundry	M2.0A, ME1.1	General Prescriptive
	Cooling Capacity Source: CU-1, 2, 3, 4		
	Heating Capacity Source: CU-1, 2, 3, 4		
FC-A	Units	M2.1A, M2.2B, M3.0, ME1.1	General Prescriptive
	Cooling Capacity Source: CU-1, 2, 3, 4		
	Heating Capacity Source: CU-1, 2, 3, 4		
FC-B, FC-23	Units, Office	M2.2B, M3.0, ME1.1	General Prescriptive
	Cooling Capacity Source: CU-1, 2, 3, 4		
	Heating Capacity Source: CU-1, 2, 3, 4		
Single Zone Air Systems Category - Heat pump, split & single package, SC, SDHV			

Air Systems Summary Information								
System/Equip ID	Quantity of Items	Supply Airflow Control	Ventilation Standard	Ventilation CFM (Total if Multiple Items)	Ventilation Air Source	Paired with DOAS	Ventilation energy recovery	Energy Recovery Efficiency (%)
DHU-1		Staged volume	ASHRAE Standard 62.1	1400	Integral		Not provided, not required	

Air Systems & Equipment - Cooling												
System/ Equip ID	Cooling System/Equip Type	Specific Type	Cooling Capacity per item (Btu/h)	Econo Exception Multipliers (Full/IPLV)		Required Cooling Efficiency (Code Min + Econo)	Required Part Load Efficiency (Code Min + Econo)	Proposed Cooling Efficiency	CE Units	Proposed Part Load Efficiency	PL Units	Efficiency Compliance Verification
DHU-1	Heat pump, air cooled	Split system	120,000	0	0	11.0	13.9	13	EER	16	IEER	COMPLIES

Air Systems & Equipment - Heating											
System /Equip ID	Heating System/Equip Type	Specific Type	Heat Pump Heating Capacity per item (Btu/h)	Cooling Capacity per Item (Btu/h) (Identical to Cooling Table)	Required Heat Pump Heating Efficiency	Required Low OSA Temp Efficiency	Proposed Heat Pump Heating Efficiency	HPH Units	Proposed Low OSA Temp Efficiency	LTH Units	Efficiency Compliance Verification
DHU-1	Heat pump, air cooled, heating	Split system	124,000	120,000	3.4	2.25	3.7	COP	2.4	COP	COMPLIES

Air Systems & Equipment Details											
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System/Equip ID	Discrete Area(s) Served	Location In Project Documents - Plan/Detail #	System/Equip Compliance Path
DHU-1	Pool	M2.1A, ME1.1	General Prescriptive
	Heating Section/Auxiliary Heating Type: Electric resistance (or None)		Economizer Compliance Method: Air-side economizer provided
	WSEC Equip Efficiency Reference Table - Cooling: Table C403.3.2(2) Unitary Heat Pumps		
	Proposed Low OSA Temp Efficiency: 2.4		LTH Units: COP
	WSEC Equip Efficiency Reference Table - Heating: Table C403.3.2(2) - Unitary Heat Pumps		

Single Zone Equipment Category - Baseboard & wall heaters

Radiant & Passive Convection Information

System/Equip ID	Quantity of Items	Ventilation Standard	Ventilation CFM (Total if Multiple Items)	Ventilation Air Source	Paired with DOAS
ERH-A	2	ASHRAE Standard 62.1	0	Other System	
FF-A	4	ASHRAE Standard 62.1	0	Other System	

Radiant & Passive Convection Equipment - Heating

System /Equip ID	Heating System/Equip Type	Specific Type	Heating Output Capacity per Item	HC Units
FF-A	Wall heaters	Electric	3,000	Watts
ERH-A	Wall heaters	Electric	750	Watts

Equipment Details

System/Equip ID	Discrete Area(s) Served	Location In Project Documents - Plan/Detail #	System/Equip Compliance Path
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Scope & Space Conditioning

NEW BUILDING - MULTIPLE ZONE SYSTEMS & EQUIPMENT

Compliance Verification

COMPLIES

Multiple Zone Air Systems Category - Dedicated outside air system (DOAS)

Air Systems Summary Information

System ID	Paired with other Systems/Equip	Ventilation Airflow Control	Ventilation Standard	Ventilation CFM	Ventilation energy recovery	Energy Recovery Efficiency (%)
ERV-1	Paired with multiple zone system(s)	Staged volume	ASHRAE Standard 62.1	4500	Yes per C403.5 Energy Recovery	74
ERV-2	Paired with multiple zone system(s)	Staged volume	ASHRAE Standard 62.1	5000	Yes per C403.5 Energy Recovery	73

Air Systems & Equipment - Cooling

System/Equip ID	Cooling System/Equip Type	Specific Type	Cooling Capacity (Btu/h)	Econo Exception Multiplier (Full)	Required Cooling Efficiency (Code Min + Econo)	Proposed Cooling Efficiency	CE Units	Efficiency Compliance Verification
ERV-2	DX-DOAS, air cooled	With energy recovery	72	0	5.2	6	ISMRE	COMPLIES
ERV-1	DX-DOAS, air cooled	With energy recovery	67.3	0	5.2	6	ISMRE	COMPLIES

Air Systems & Equipment - Heating

System /Equip ID	Heating System/Equip Type	Specific Type	Heating Output Capacity (Btu/h)	Heat Pump Heating Capacity (Btu/h)	Cooling Capacity (Btu/h) (Identical to Cooling Table)	Required Heat Pump Heating Efficiency	Proposed Heat Pump Heating Efficiency	HPH Units	Efficiency Compliance Verification
ERV-1	DOAS	ERV with supplemental heat	100,000	0	0				COMPLIES
ERV-2	DOAS	ERV with supplemental heat	100,000	0	0				COMPLIES

Air Systems & Equipment Details			
System/Equip ID	Discrete Area(s) Served	Location In Project Documents - Plan/Detail #	System/Equip Compliance Path
ERV-1	North Part of Building	M2.0A, M2.1A, M2.1B, M2.2A, ME1.0	General Prescriptive
	WSEC Equip Efficiency Reference Table - Cooling: Table C403.3.2(13) DX-DOAS Units, With ER		
	Economizer Compliance Method: Air-side economizer provided		
ERV-2	South Part of Building	M2.1B, M2.2B, ME1.0	General Prescriptive
	WSEC Equip Efficiency Reference Table - Cooling: Table C403.3.2(13) DX-DOAS Units, With ER		
	Economizer Compliance Method: Air-side economizer provided		