n 4a		oject Name:					Pag			_
STEMS	- GENERA	.						Pa	rt 1	of
plicabilit ussion of qualify ptions on page	ying 4-25				Show cor	/Specs Inpliance by includion section and s			t, detai	il numb
_ Is this f	cablity (Section form required? Required. Complet	·	new H	HVAC sys	stem is beind	a installed, or	compone	nts of	an	
existing	HVAC system are	being repla	aced ((I.e., equi	ipment, cont	rols, ductwork	a, and ins	ulation	.)	
	Exception. The burequirements. App qualify:									
Area:						Exception	n 🔲 -1	- 2	-	3
Area:						Exception	n 🔲 -1	- 2	-	3
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☐ Form N	lot Required. This	project does	s not	contain v	work require	d to comply w	ith code.			
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Form 4a	Project Name:		Page:
SYST	EMS - GENERAL		Part 2 of 6
_	Complies . All new HVAC systems in temperatures within the zones.	ne Controls (Section 1317.4.) nclude at least one temperature control or an exception from zone control requi	device responding to
	Portions of the building that qualify: The plans/specs show compliance in	the following locations:	
	Complies. Systems must have at least Control Setback Complies. Each sy reducing energy through control setback Equipment Shutdown Complies. Each energy use through automatic shutdown HVAC systems with equipment Programmable controls (1317) Occupant sensor (1317.4.3.1) Interlocked to a security system Manually activated timers with Exception. The building qualifies for	rstem is equipped with automatic control ack during periods of non-use or alternated by the controls can be ach system is equipped with controls can be ach system is equipped with controls can be active and shutdown are equipped with at least (4.4.3.1 (1)) (2)) (2)) (2)) (3) (1317.4.3.1 (3)) (3) (4) (5) (6) (6) (7) (7) (8) (8) (9) (9) (9) (9) (9) (9) (9) (9) (9) (9	ol capable of ate use of spaces apable of reducing ate use of spaces. one of the following:
	The plans/specs show compliance in		eption 🔲 -1 🔟 -2
_	1317.4.2.1. Where used to control be providing a temperature range or dea heating and cooling energy to the zor	cable of being set to the temperatures of both heating and cooling, zone controls subband of at least 5 degrees F within where is shut off or reduced to a minimum. an exception to the deadband requirem	shall be capable of nich the supply of
	Portions of the building that qualify: The plans/specs show compliance in	the following locations:	
	just meet temperature set point at tim	have controls capable of varying start-use of occupancy. esign supply air capacity not exceeding	
	6.5 Heat Pump Controls (Se No Heat Pump. The plans/specs do Complies. All new heat pumps equithe use of supplemental heat as defir The plans/specs show compliance in	not call for a new heat pump pped with supplementary heaters are c ned in Section 1317.4.4.	controlled to minimize

7. Economizer Cooling (Section 1317.3) No Cooling. The building plans do not call for a new fan system with mechanical cooling. Complies. Each new fan system has an air economizer capable of modulating outside-air and return-air dampers to provide up to 100 percent of the design supply air as outside air. Exception At least one new fan system qualifies for an exception. The applicable code exception is Section 1317.3, Exception	_ = = 171	Project Name: 5 - GENERAL		Page:	Part 3	」 of €
No Cooling. The building plans do not call for a new fan system with mechanical cooling. □ Complies. Each new fan system has an air economizer capable of modulating outside-air and return-air dampers to provide up to 100 percent of the design supply air as outside air. □ Exception At least one new fan system qualifies for an exception. The applicable code exception is Section 1317.3, Exception □ -1 □ -2 □ -3 □ -4 □ -5 □ -6 □ -7 If Exception 3 is selected complete the following: (a) Total cooling capacity of exempt units (Btu/hr) (b) Total installed building cooling capacity (Btu/hr) □ Complies. Sum of exempt units rated at less than 54,000 Btu/hr is <240,000 or a/b < 0.10 (10% of total building cooling capacity). Unit Identifier of exempt units: The plans/specs show compliance in the following locations: ■ No Economizer Pressure Relief & Integration (Section 1317.3.1 and 1317.3.2) No Economizers Required. Project does not contain a new fan system requiring economizers. Overpressurization Complies. The drawings specifically identify a pressure relief mechanism for each fan system that will relieve the extra air introduced by the economizer. Integration Complies. Economizer is capable of providing partial cooling even when additional mechanical cooling is required to meet the remainder of the cooling load. Exception. The applicable exception is Section 1317.3.2, Exception □ -1 □ -2 The plans/specs show compliance in the following locations: ■ Complies. See allowable amount of hot gas bypass as a percentage of total cooling capacity in table below.					Tare o	01 (
(b) Total installed building cooling capacity (Btu/hr) Complies. Sum of exempt units rated at less than 54,000 Btu/hr is <240,000 or a/b < 0.10 (10% of total building cooling capacity). Unit Identifier of exempt units: The plans/specs show compliance in the following locations: **The plans/specs show compliance in the following locations: **No Economizer Pressure Relief & Integration (Section 1317.3.1 and 1317.3.2) No Economizers Required. Project does not contain a new fan system requiring economizers. Overpressurization Complies. The drawings specifically identify a pressure relief mechanism for each fan system that will relieve the extra air introduced by the economizer. Integration Complies. Economizer is capable of providing partial cooling even when additional mechanical cooling is required to meet the remainder of the cooling load. Exception. The applicable exception is Section 1317.3.2, Exception -1 -2 The plans/specs show compliance in the following locations: 9. Hot Gas Bypass (Section 1317.5) No Hot Gas Bypass Complies. See allowable amount of hot gas bypass as a percentage of total cooling capacity in table below.	No Co Compl return- Excep	loling. The building plans do no lies. Each new fan system has air dampers to provide up to 10 tion. At least one new fan system ion 1317.3, Exception.	t call for a new fan system with med an air economizer capable of modul 0 percent of the design supply air as em qualifies for an exception. The ap -2 -3 -3 -4 -5 -6	ating outside-a s outside air. oplicable code	air and	
Complies. Sum of exempt units rated at less than 54,000 Btu/hr is <240,000 or a/b < 0.10 (10% of total building cooling capacity). Unit Identifier of exempt units: The plans/specs show compliance in the following locations: 8. Economizer Pressure Relief & Integration (Section 1317.3.1 and 1317.3.2) No Economizers Required. Project does not contain a new fan system requiring economizers. Overpressurization Complies. The drawings specifically identify a pressure relief mechanism for each fan system that will relieve the extra air introduced by the economizer. Integration Complies. Economizer is capable of providing partial cooling even when additional mechanical cooling is required to meet the remainder of the cooling load. Exception. The applicable exception is Section 1317.3.2, Exception -1 -2 The plans/specs show compliance in the following locations: 9. Hot Gas Bypass (Section 1317.5) No Hot Gas Bypass Complies. See allowable amount of hot gas bypass as a percentage of total cooling capacity in table below.		(a) Total cooling capacity of ex	kempt units (Btu/hr)			
Unit Identifier of exempt units: The plans/specs show compliance in the following locations: **The plans/specs show compliance in the following locations:** **Reconomizer Pressure Relief & Integration (Section 1317.3.1 and 1317.3.2) **No Economizers Required.** Project does not contain a new fan system requiring economizers. **Overpressurization Complies.** The drawings specifically identify a pressure relief mechanism for each fan system that will relieve the extra air introduced by the economizer. **Integration Complies.** Economizer is capable of providing partial cooling even when additional mechanical cooling is required to meet the remainder of the cooling load. **Exception.** The applicable exception is Section 1317.3.2, Exception		(b) Total installed building coo	ling capacity (Btu/hr)			
The plans/specs show compliance in the following locations: 8. Economizer Pressure Relief & Integration (Section 1317.3.1 and 1317.3.2) No Economizers Required. Project does not contain a new fan system requiring economizers. Overpressurization Complies. The drawings specifically identify a pressure relief mechanism for each fan system that will relieve the extra air introduced by the economizer. Integration Complies. Economizer is capable of providing partial cooling even when additional mechanical cooling is required to meet the remainder of the cooling load. Exception. The applicable exception is Section 1317.3.2, Exception -1 -2 The plans/specs show compliance in the following locations: 9. Hot Gas Bypass (Section 1317.5) No Hot Gas Bypass Complies. See allowable amount of hot gas bypass as a percentage of total cooling capacity in table below.		•		s <240,000 or a	a/b	7
8. Economizer Pressure Relief & Integration (Section 1317.3.1 and 1317.3.2) No Economizers Required. Project does not contain a new fan system requiring economizers. Overpressurization Complies. The drawings specifically identify a pressure relief mechanism for each fan system that will relieve the extra air introduced by the economizer. Integration Complies. Economizer is capable of providing partial cooling even when additional mechanical cooling is required to meet the remainder of the cooling load. Exception. The applicable exception is Section 1317.3.2, Exception12 The plans/specs show compliance in the following locations: 9. Hot Gas Bypass (Section 1317.5) No Hot Gas Bypass Complies. See allowable amount of hot gas bypass as a percentage of total cooling capacity in table below.	ı	Unit Identifier of exempt units:				
 No Economizers Required. Project does not contain a new fan system requiring economizers. Overpressurization Complies. The drawings specifically identify a pressure relief mechanism for each fan system that will relieve the extra air introduced by the economizer. Integration Complies. Economizer is capable of providing partial cooling even when additional mechanical cooling is required to meet the remainder of the cooling load. Exception. The applicable exception is Section 1317.3.2, Exception □ -1 □ -2 The plans/specs show compliance in the following locations: 9. Hot Gas Bypass (Section 1317.5) No Hot Gas Bypass Complies. See allowable amount of hot gas bypass as a percentage of total cooling capacity in table below. 	The pla	ans/specs show compliance in t	the following locations:			_
 No Economizers Required. Project does not contain a new fan system requiring economizers. Overpressurization Complies. The drawings specifically identify a pressure relief mechanism for each fan system that will relieve the extra air introduced by the economizer. Integration Complies. Economizer is capable of providing partial cooling even when additional mechanical cooling is required to meet the remainder of the cooling load. Exception. The applicable exception is Section 1317.3.2, Exception □ -1 □ -2 The plans/specs show compliance in the following locations: 9. Hot Gas Bypass (Section 1317.5) No Hot Gas Bypass Complies. See allowable amount of hot gas bypass as a percentage of total cooling capacity in table below. 						
table below.	Integra mecha Excep	ation Complies. Economizer is inical cooling is required to mee ition. The applicable exception in	capable of providing partial cooling the remainder of the cooling load. is Section 1317.3.2, Exception	even when ad		
Unit ID Rated Cooling Capacity Hot Gas Bypass Capacity	Integramecha Excep The pla 9. Hot	ation Complies. Economizer is inical cooling is required to mee ition. The applicable exception is ans/specs show compliance in the Gas Bypass (Section 13) at Gas Bypass	capable of providing partial cooling to the remainder of the cooling load. is Section 1317.3.2, Exception the following locations:	even when ad -1 ☐ -2	lditional	
	Integramecha mecha Excep The pla 9. Hot No Ho Compliately	ation Complies. Economizer is anical cooling is required to mee ation. The applicable exception is ans/specs show compliance in the Gas Bypass (Section 13 at Gas Bypass) lies. See allowable amount of below.	the remainder of the cooling load. is Section 1317.3.2, Exception the following locations: 17.5) hot gas bypass as a percentage of	even when ad -1 ☐ -2	lditional	_
Allowable Het Coe Byrness	Integramecha mecha Excep The pla 9. Hot No Ho Compliately	ation Complies. Economizer is anical cooling is required to mee ation. The applicable exception is ans/specs show compliance in the Gas Bypass (Section 13 at Gas Bypass) lies. See allowable amount of below.	the remainder of the cooling load. is Section 1317.3.2, Exception the following locations: 17.5) hot gas bypass as a percentage of	even when ad -1 ☐ -2	lditional	
Allowable Hot Gas Bypass Rated Cooling Capacity Max Hot Gas Bypass	Integramecha mecha Excep The pla 9. Hot No Ho Compliately	ation Complies. Economizer is anical cooling is required to mee ation. The applicable exception is ans/specs show compliance in the	t capable of providing partial cooling to the remainder of the cooling load. is Section 1317.3.2, Exception the following locations: 17.5) Hot gas bypass as a percentage of the Gas Bypass Capacity	even when ad -1 ☐ -2	lditional	
<u>≤</u> 240,000 Btu/hr 50%	Integramecha mecha Excep The pla 9. Hot No Ho Compliately	ation Complies. Economizer is anical cooling is required to mee ation. The applicable exception is ans/specs show compliance in the	the remainder of the cooling load. is Section 1317.3.2, Exception the following locations: 17.5) Hot Gas Bypass Capacity Gas Bypass	even when ad -1 ☐ -2	lditional	
>240,000 Btu/hr 25%	Integramecha mecha Excep The pla 9. Hot No Ho Compliately	Allowable Hot Rated Cooling Capacity Allowable Hot Rated Cooling Capacity Allowable Hot Rated Cooling Capacity	the remainder of the cooling load. is Section 1317.3.2, Exception the following locations: 17.5) Hot Gas Bypass Capacity Gas Bypass Max Hot Gas Bypass	even when ad -1 ☐ -2	lditional	

	Project Name:		Page:
STEMS	- GENERAL		Part 4 of
□ Not Requestion □ Complies □ Exception	on. The building qualifies for	•	requirement. The
The plans	s/specs show compliance in	the following locations:	
shut whe setback. Complied operation	s. Outdoor air supply and exen systems or spaces served s. Stair and shaft vents are of	rols (Section 1317.4.3.3.1) Thaust systems shall be provided dampare not in use or during building warm capable of being automatically closed or required by fire and smoke detection state the following locations:	u-up, cooldown, or
☐ Complied of 4 cfm/f	ft2 at 1.0 in w.g. when tested on. Packaged HVAC equipm	oply and exhaust air dampers have a not in accordance with AMCA Standard 5 ent may have maximum leakage rate of	500-1998.
o	n tested in accordance with		
The plans	s/specs show compliance in	the following locations.	
	or cooling system or part of a	and specifications do not call for new p circulating service water heating syste	
heating o Complie water hea	ating system complies with the	neating or cooling system or part of a content of the requirements of the Code, Section exception: Section 1314.1, Exception	•
heating of Complies water heating of water heat Exception 12. Occur Complies in Chapte Complies	ating system complies with the control of the Contr	the requirements of the Code, Section exception: Section 1314.1, Exception stems provide the required amount of	ventilation specified on as certified by a
heating of Complies water heating of water heat Exception 12. Occu Complies in Chaptes Complies reg-istered The plans	ating system complies with the control of the Contr	the requirements of the Code, Section of exception: Section 1314.1, Exception stems provide the required amount of al Specialty Code. Is provide required amount of ventilatic pecified by Section1203.4.1, Exception	ventilation specified on as certified by a

CTENIC A	Project Name:			Page:		
91 FM9 - (GENERAL				Part 5	of
Complies. areas having	ccupancy Ventilation HVAC systems with vented an average occupant low verage automatical series.	ilation air capaci ad of 20 square	ties of 1,500 CFM or great the comments of the			
Identify app	licable systems:					
Plans/specs	indicate where equipme	nt (i.e. carbon die	oxide sensor) and sec	quence is s	pecified:	T
recovery eff	ccupancy Systems. Proj	ject does not cor	ntain an HVAC systen]
Not Regula min. outside Complies. I 30°F (Zone Exception. exception from	t Air Heat Recovery ted. HVAC system does air supply ≥70%, and 3) Heat recovery system inc 2) and has provision to put An HVAC system qualifier om Section 1318.3 Excepted show compliance in	not have: 1) designated at least 1 exhaustreases outside a rovide bypass dues for an exception	ign supply air cap. of st fan rated at 75% o ir temperature by 20° uring air economizer ron to this requirement	F min outsic F (Climte Z node. . Applicable	de air Cone 1) or	7
□ Not Regula CFM that se □ Complies. I reduce airflo The plans/s	Yolume Fan System ted. The building plans of erve a single zone and fur Fan systems are equippe by as required by Section pecs show compliance in	r specifications on totion for the pur d with variable from 1318.4.2.3.	lo not call for fan syst pose of temperature	control.		
locations:						
16. Variable Not Regula horsepower Complies. A systems are Exception. Portions of t Applicable of	e Speed Drives (Seted. The building plans of and greater that serve variable controlled by a variable. The building qualifies for the building that qualify: sode exception is Section	r specifications of ariable-flow air or 10 hp and greate speed drive. an exception to 1317.10.3.1, Ex	lo not call for fan and r liquid systems. er which serve variabl the variable-speed dr	e-flow air o	r liquid	
16. Variable Not Regula horsepower Complies. A systems are Exception. Portions of t Applicable of The plans/s locations:	ted. The building plans of and greater that serve variable from and pump motors to controlled by a variable. The building qualifies for the building that qualify: sode exception is Section pecs show compliance in	r specifications of ariable-flow air or 10 hp and greate speed drive. an exception to 1317.10.3.1, Exthe following	lo not call for fan and r liquid systems. er which serve variabl the variable-speed dr	e-flow air o	r liquid	
16. Variable Not Regula horsepower Complies. A systems are Exception. Portions of t Applicable of The plans/s locations: 17. Service No New Wa heaters, hot Complies. systems cor	ted. The building plans of and greater that serve variable acontrolled by a variable. The building qualifies for the building that qualify: sode exception is Section	r specifications of ariable-flow air or 10 hp and greate speed drive. an exception to 1317.10.3.1, Exthe following rec. 1315) ag plans and specific hot water of water storage at sof the Section	lo not call for fan and r liquid systems. er which serve variable the variable-speed dreception cifications do not call distribution systems. tanks or service hot we reliqued to the call distribution systems.	e-flow air on the requirer for new wa	r liquid ment. ter ution	
16. Variable Not Regula horsepower Complies. A systems are Exception. Portions of t Applicable of The plans/s locations: 17. Service No New Wa heaters, hot Complies. systems cor Exception.	ted. The building plans of and greater that serve variable from the building qualifies for the building that qualify: sode exception is Section pecs show compliance in the building. The building that qualify: sode exception is Section pecs show compliance in the building that qualify: water Heating (September 1998). The building that water storage tanks or so all new water heaters, he mply with the requirement	r specifications of ariable-flow air or 10 hp and greate speed drive. an exception to 1317.10.3.1, Exthe following rec. 1315) ag plans and specific hot water of water storage at sof the Section	lo not call for fan and r liquid systems. er which serve variable the variable-speed dreception cifications do not call distribution systems. tanks or service hot we reliqued to the call distribution systems.	e-flow air or ive requirer for new wa vater distrib	r liquid ment. ter ution	

m 4a	Project Name:		Page:		
STEMS -	GENERAL			Part 6	of 6
	• -	Hot Tubs (Section 1315.5) ad specifications do not call for new, sw	rimming poo	ols, spas or	
hot tubs. On/Off Co	ontrols Complies. Spa and	hot tub heaters are equipped with a re		•	
☐ Ventilation		I ventilation system is controlled based		y.	
Heat Reco		t tubs and spas are equipped with a coas, and hot tubs, over 200 ft ² utilize rec		at as	
☐ Ex he	ception. Heat recovery is n	ot necessary as pool is heated by rene of providing at least 70 percent of the ason.			
	Hoods (Section 1317	•			
	Hoods. The building plans or than 15,000 cfm.	do not call for fume hood systems that I	have a total	exhaust	
☐ Complies ☐ Va	. Fume hood systems have	at least one of the following features: ust and room supply systems capable or less of design values	of reducing	exhaust	
Dir wa no	rect makeup (auxiliary) air su urmer than 2° F below room	upply equal to at least 75% of the exha set point, cooled no cooler than 3° F at no simultaneous heating and cooling us	ove room s		
		ondition makeup air from fume hood ex gy Recovery, without using any except		ccordance	
The plans/	specs show compliance in t	he following locations:			1
OO Dowlein	a Canana Vantilation	(Santian 1217 0 2)			
☐ No Enclos	•	plans and specifications do not call for aust rate greater than 30,000 CFM.	enclosed G	Froup S-2	
Section 13	317.2.3.	ns call for carbon monoxide sensing de	evices as re	quired by	
	Open parking garages.				
☐ Not Regul	en Hoods (Section 13 lated. The plans/specs do not an 5,000 cfm each.	17.11) ot call for any new kitchen hoods with ϵ	exhaust cap	acity	
Complies least 50 pe	. All new kitchen hoods with	h a total exhaust capacity greater than up air; (a) unheated or heated to no mo			
The plans/	specs show compliance in t	he following locations:]
22. Outsid	le Heating Systems (Section 1317.12)			1
systems o	utside the building.	ans/specs do not call for new permane	•		
		Illed outside heating systems are radian timer switch as required by Section 13°		systems	

Form 4b		Project Name:			Page:
COMPLE	X	HVAC SYSTEM	S		Part 1 of 3
Applic- ability Discussion of qualifying excep-	1.		red for complex	Section 1317.9, 1317.10 systems only. If your plans qualin is not required.	
tions in instructions section. Fan Motor Energy See Section 1318.4.2 for maximum horse-power allowed.		or greater (include sum Brake Horsepower Co requirements. Complete Nameplate Horsepowe than is allowed by Secti	VAC system do of all supply, reimplies. The energy and attach Woer Complies. Secon 1318.4.2.3. (18.4.2, Exception that qualify:	es not have total fan nameplate heturn, & exhaust fans operating at ergy demand of all HVAC fan systrksheet 4l. elected fan motors have nameplat Complete Worksheet 4L.)	design conditions). tems meets code
Cooling Tower Fans			ere is no cooling er fans have cor er temperature/		
		No Cooling. The buildi	ng HVAC syster vent reheating, bition is Section of complete and att	recooling or mixing of mechanical	
Exceptions Discussion of qualifying exceptions in instructions		Electric Motor Eff Not Regulated. There a permanently wired polyp Complies. The efficien	are no NEMA Debhase motors of cy of all regulate 17.10.3, Exception that qualify:	ection 1317.10.3 & Table esign A&B squirrel cage,T-frame is one horsepower or more which sed motors meets code requirement on12	nduction, erve built up HVAC
OF ORES		Not Regulated. The bu by a static pressure sen Complies. The system	ilding plans or s sor or direct dig static pressure s ding the require 18.2.3, Exceptio	Reset Controls (Section 1 pecifications do not call for a VAV ital control of individual zone boxeset point automatically resets to the digital digital digital control of the zones with the grand	system controlled es. ne lowest point

b	Project Name:			Page:
	EX HVAC SYSTEMS	<u> </u>		Part 2 of 3
	Not Regulated. Project does recomplies. VAV terminal units addition of reheat when the zo Exception. Section 1317.4.2. The plans/specs show compliant following locations:	not contain VAV terr are programmed to ne temperature is w 1, Exception <u> </u>	minal units. operate at the minimum a	
	Supply-Air Temperatur Not Regulated. The building p Complies. Multiple zone HVAG temperatures in response to be Exception. The building qualif Applicable code exception is S	plans or specification C systems include ouilding loads or outs ies for an exception	ns do not call for multiple zo controls that automatically side air temperature. to the supply-air reset co	zone HVAC systems. reset the supply-air ntrols requirement.
	Portions of the building that qu	alify:		
	The plans/specs show complia following locations:	nce in the		
	Chilled and Hot Water			
	a design capacity exceeding 3 Complies. Chilled and hot was temperatures by representative Exception. Section 1318.2.4, Portions of the building that query The plans/specs show complians following locations:	er systems include building loads or because Exception -1 alify:	y outside air temperature.	
10	D. Separate Air Distribut	tion Systems	Section 1318.2.7)	
	Not Regulated. The building p	lans or specification	•	th special process
_	temperature or humidity requir Complies. Separate air distrib humidity requirements from the provisions are included so prin Exception. Section 1318.2.7,	ution systems served be zones serving on ary systems are spreamed are spreamed.	nly comfort conditions, or	supplementary control
	Identify zones with special pro- requirements:	cess		
	The plans/specs show complia following locations:	nce in the		
13	1. Zone Isolation Contro	ols (Section 13	318.2.6)	
	Not Regulated. Building plans occupancies or floors with ≥24			
	Complies. HVAC systems ser capacity, or >300,000 Btu/hr hautomatically shutting off supp	ving multiple occupa eating capacity are ly air to and from ea	ancies or floors with >240 equipped with isolation de	,000 Btu/hr cooling evices capable of
	independently and satisfies ter requirements. Central fan syste The plans/specs show complia	em air volume is red		timum start control

	Project Name: EX HVAC SYSTEMS	Page: Part 3 of 3
1′	2. Humidity Controls (Section 1318.2.2)	
	No Moisture Added to Building. The building plans do not call for means	s to add moisture to
	maintain specific humidity levels.	
Ш	Complies. All new humidity control systems equipped with a humidistat w	•
	humidifier preheating devices have an automatic value to shut off preheat The plans/specs show compliance in	when numidification
	the following locations:	
1:	3. Hydronic System Controls (Section 1318.2.8)	
	No Hydronic System. The building plans or specifications do not call for a ne	ew hydronic system.
_	Complies. The hydronic system complies as follows:	,
	13.1 Variable Flow Controls (Section 1318.2.8.4)	
	System does not have a 10 hp or greater motor	
	☐ Complies. System has controls capable of varying pump flow	
	The plans/specs show compliance in	
	the following locations: 13.2 Three-Pipe System (Section 1318.2.8.1)	
	System does not have a common return system (a three-pipe system	n) for both hot water
	and chilled water.	,
	13.3 Two-Pipe Changeover System (Section 1318.2.8.2)	
	System is not a Two-Pipe Changeover System	
	Complies. System is:	
	 Designed to allow a deadband between changeover from or of at least 15°F outside air temperature. 	ne mode to the other
	b. Designed to operate and provided with controls that will all	ow operation in one
	mode for at least four hours before changing over to the ot	
	c. Provided with reset controls that allow heating and cooling	supply temperatures
	at the changeover point to be no more than 30°F apart.	
	The plans/specs show compliance in the following locations:	
	13.4 Hydronic (Water Loop) Heat Pump System (Section 1318.2.8.3)	
	System is not a Hydronic (Water Loop) Heat Pump System	
	Complies. Hydronic heat pumps connected to a common heat pump	water loop with
	central devices for heat rejection (e.g., cooling tower) and heat addit	•
	have the following:	
	 a. Controls installed capable of providing a heat pump water 	
	deadband of at least 20°F between initiation of heat reject	ion and heat
	addition by the central devices (e.g., tower and boiler).	
	b. Closed-circuit tower (fluid cooler) has either an automatic	
	installed to bypass all but a minimal flow of water around t	
	(for freeze protection), or low-leakage positive closure danc. Open-circuit tower installed directly in the heat pump loop	•
	valve installed to bypass all heat pump water flow around	
	circuit towers used in conjunction with a separate heat exc	-
	the tower from the heat pump loop are controlled by shutti	_
	circulation pump on the cooling tower loop.	•
OF ON	d. A two-position valve at each hydronic heat pump for hydronic	onic systems
Euro 6	having a total pump system power exceeding 10 hp.	
	The plans/specs show compliance in the following locations:	

CRITATION A TORY A I	D CONDI	Project Name:				Page:	
NITARY A	IR CONDI	TIONER - AIR CO	OLED				
Equipment	(a)	(b)	(c) Capacity	(0	d) Seasonal or	(e) Compliance	(f) New or
biscussion of equipment atings and equipment efinitions on page 4-19.	Equip. ID	Model Designation	(Btu/h)	Steady State	Part Load	Schedule (A-E)	
	Indicate source of	of information					
equired ocument- tion		biringthation					
		roducts directory, Section ULE, page: (Attach data furnished by the equipn	nent supplier, I.e.,	"cut sheets")			
ode Required	1 Compliance			Cooling Cap	acity (btu/hr)	Minimur	m Rating Seasonal or
Efficiencies	Schedule	Equipment Type	New * Replacement *	Over 0 0	But not over - 65,000 65,000	Steady State na na	Part Load 13 SEER 9.7 SEER

This schedule of equipment efficiencies was reformatted from code, Table 13-L.

			Cooling Cap	acity (btu/hr)	Minimur	n Rating
Compliance						Seasonal or
Schedule	Equipment Type		Over	But not over -	Steady State	Part Load
		New *	0	65,000	na	13 SEER
	Single Package Without a	Replacement *	0	65,000	na	9.7 SEER
Α	Heating Section or With Electric		65,000	135,000	10.3 EER	n/a
A	Resistance Heat	All	135,000	240,000	9.7 EER	n/a
	Resistance neat	All	240,000	760,000	9.5 EER	9.7 IPLV
			760,000	-	9.2 EER	9.4 IPLV
		New *	0	65,000	na	13 SEER
	Split System Without a Heating	Replacement *	0	65,000	na	10 SEER
В	Section or With Electric		65,000	135,000	10.3 EER	n/a
Ь	Resistance Heat	All	135,000	240,000	9.7 EER	n/a
	Resistance Heat	All	240,000	760,000	9.5 EER	9.5 IPLV
			760,000	-	9.2 EER	9.2 IPLV
		New *	0	65,000	na	13 SEER
	Single Package With a Heating	Replacement *	0	65,000	na	9.7 SEER
С	Section Other Than Electric		65,000	135,000	10.1 EER	n/a
C	Resistance	All	135,000	240,000	9.5 EER	n/a
	Resistance	All	240,000	760,000	9.3 EER	9.5 IPLV
			760,000	-	9.0 EER	9.2 IPLV
		New *	0	65,000	na	13 SEER
	Split System With a Heating	Replacement *	0	65,000	na	10 SEER
D	Section Other Than Electric		65,000	135,000	10.1 EER	n/a
J	Resistance	All	135,000	240,000	9.5 EER	n/a
	1 Colotalice	All	240,000	760,000	9.3 EER	9.7 IPLV
			760,000	-	9.0 EER	9.4 IPLV
Е	Condensing Unit Only	All	135,000	-	10.1 EER	11.2 IPLV



^{*} Equipment is a new installation or replaces existing equipment

Worksheet 4b	Project Name:		Page:	
UNITARY A	IR COND WATER &	EVAPORATIVELY COOLE	D	

(d) **Equipment** (a) (b) (e) **Proposed Performance** Discussion of equip-Compliance ment ratings and Cooling Capacity (Btu/h) Seasonal or Schedule (Aequipment defini-Equip. ID **Model Designation** Steady State Part Load E) tions on page 4-19.

Required	Indicate source of information	
Document-	☐ ARI Unitary Directory, Section AC, page:	
ation	ARI Applied Products directory, Section ULE, Page:	
	Product data (Attach data furnished by the equipment supplier	I.e., "cut sheets")

Code Required Efficiencies

This equipment efficiencies schedule was reformatted from code, Table 13-L.



			Cooling Capac	city (btu/hr)	Minimu	m Rating
	Compliance Schedule	Equipment Type	Over	But not over -	Steady State	Seasonal or Part Load
		Single Packaged and Split	0	65,000	12.1 EER	n/a
	Α	AC Without a Heating	65,000	135,000	11.5 EER	na
:-	^	Section or With Electric	135,000	240,000	11.0 EER	n/a
		Resistance Heat	ce Heat 240,000	-	11.0 EER	10.3 IPLV
		Single Packaged and Split	0	65,000	12.1 EER	n/a
	В	AC With a Heating Section	65,000	135,000	11.3 EER	na
	Ь	Other Than Electric	135,000	240,000	10.8 EER	n/a
		Resistance	240,000	-	10.8 EER	10.1 IPLV
	С	Condensing Units	135,000	-	13.1 EER	13.1 IPLV

Worksheet 4c	Project Name:	Page:	
UNITARY HEAT PUM	P - AIR COOLED		

Equipment

Discussion of equipment ratings and equipment definitions on page 4-19.

(a)	(b)	(c)	(c	d)		(e)		(f)	(g)
			Propose	d Rating	Propose	d Heating F	kating		
		Cooling Capacity				COP	СОР	Compliance Schedule	New or
Equip. ID	Model Designation	(Btu/h)	SEER	EER	HSPF	(47°F)	(17°F)	(A-E)	Replacmnt*

Required
Document-
ation

Indicate source of information

☐ ARI Unitary Directory, Section AC, page:

☐ ARI Applied Products directory	Section ULE, Page:
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Product data (Attach data furnished by the equipment supplier, I.e., "cut sheets")

Code Required Efficiencies

This schedule of equipment efficiencies was reformat-ted from the code, Table 13-M.

			(btu	/hr)	Rat	ing	Mir	nimum Heating	Rating
Compliance				But not		or Part		COP (@	COP
Schedule	Equipment Type		Over	over	EER	Load	HSPF	47°F)	(@ 17°F)
		New *	0	65,000	-	13 SEER	7.7	-	-
	Single Package Without a	Replcmnt *	0	65,000	-	9.7 SEER	6.6	-	-
Α	Heating Section or With		65,000	135,000	10.1	n/a	-	3.2	2.2
	Electric Resistance Heat	All	135,000	240,000	9.3	n/a	-	3.1	2.0
			240,000	-	9.0	9.2 IPLV	-	3.1	2.0
		New *	0	65,000	-	13 SEER	7.7	-	-
_	Split System Without a	Replcmnt *	0	65,000	-	10 SEER	6.8	-	-
В	Heating Section or With		65,000	135,000	10.1	n/a	-	3.2	2.2
	Electric Resistance Heat	All	135,000	240,000	9.3	n/a	-	3.1	2.0
			240,000	-	9.0	9.2 IPLV	-	3.1	2.0
		New *	0	65,000	-	13 SEER	7.7	-	-
	Single Package With a	Replcmnt *	0	65,000		9.7 SEER	6.6	-	-
С	Heating Section Other Than		65,000			n/a	-	3.2	2.2
	Electric Resistance	All	135,000	240,000	9.1	n/a	-	3.1	2.0
			240,000	-	8.8	9.0 IPLV	-	3.1	2.0
		New *	0	65,000	-	13 SEER	7.7	-	-
	Split System With a Heating	Replcmnt *	0	65,000	-	10 SEER	6.8	-	-
D	Section Other Than Electric		65,000	135,000	9.9	n/a	-	3.2	2.2
	Resistance	All	135,000	240,000	9.1	n/a	-	3.1	2.0
			240,000	-	8.8	9.0 IPLV	-	3.1	2.0

Cooling Capacity | Minimum Cooling |



^{*} Equipment is new installation or replaces existing equipment

	oject Name: AT PUN	IP - WATER CO	OLED			Page:]
Equipment	(a)	(b)	(c)	(d)	(e)	(f)	(g)	
Discussion of equipment atings and equipment lefinitions on page 4-19.			Cooling Capacity	Entering Water Temp.	Proposed	Proposed	Compliance Schedule	
eminoris on page 4-19.	Equip. ID	Model Designation	(Btu/hr)	EWT (°F)	EER	COP	(A, B, or C)	
								-
								-
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equired	Indicate sour	ce of information					7	
ocument-		ARI Unitary Directory, Section	AC, page:					
tion		ARI Applied Products director	•	•				
		Product data (Attach data furr	nished by the eq	uipment su	pplier, I.e.,	"cut sheets")		
Code			Cooling Capac	sity (htu/hr)		m Cooling	Minimum H	
Required	Compliance	_ ,		But not		ating	Rating	
fficiencies	Schedule	Equipment Type	Over 0	over 17,000	11.2	@EWT 86°F	4.2	E\ 68
is schedule of equip- ent efficiencies was	А	Water Source	17,000	65,000	12.0	86°F	4.2	68
ormatted from the de, Table 13-M.		0	65,000	135,000	12.0	86°F	4.2	68
ao, Table To-IVI.	В	Ground Water Source	0	135,000	16.2	59°F	3.6	50

С

Ground Source

0

135,000

13.4

3.1

32ºF

77ºF

Vorksheet 4e PACKAGED T	Project Name: ERMINAL A.	C AIR	COOLED		Page:	
Equipment		(a)	(b)	(c)	(d)	(e)
Enter the cooling capacity in column (c). If capacity				Cooling	Proposed	Code Minimum
s less than 7,000 Btu/hr, use 7,000. If above 15,000, use 15,000.	Type of Equipment	Equip. ID	Model Designation	Capacity (Btu/hr)	EER (95°F db)	EER (95°F db)
Discussion of equipment atings and equipment definitions on page 4-19.						
	Units Installed in New Construction					
	Replacement of					
	Existing Units (installed prior to 10/01/03)					
OF OR						
859						
Required		Indicate source	e of information			
Documentation			rectory, Section AC, page:	5		
			oducts directory, Section ULE, Attach data furnished by the eq		er, I.e., "cut s	neets")
Code Required Efficiencies		Enter the results i	de minimum EERs from the formular n column (e). New Construction: EER @ 95F Test Co Replacement Units: EER @ 95F Test C	onditions = 12.5–(0.2	13x Cap/1000)	in column (c).

Worksheet 4f		ect Name:	PUMP - AIR C	OOLED)		Page:	
Equipment		(a)	(b)	(c)	(c	d) osed		e) 1inimum
Enter the cooling capacity in column (c). If capacity is less than 7,000 Btu/hr, use 7,000. If above 15,000, use 15,000.	Type of Equipment	Equip. ID	Model Designation	Cooling Capacity (Btu/hr)	Cooling Rating EER (95°F db)	Heating	Cooling Rating EER (95°F db)	Heating
Calculate the code minimum EER's from formulas below using cooling capacity in the column (c). Enter results in column (e).	Type of Equipment	Едиір. 16	Woder Besignation	(Diami)	(00 1 00)		ab)	
Discussion of equipment ratings and equipment definitions on page 4-19.	Units Installed in New Construction							
	Replacement of Existing Units (installed prior to 10/01/03)							
Required Document- ation	Indicate source of inf ARI Unitary Directory ARI Applied Products Product data (Attach	v, Section A		blier, I.e., "cut	sheets")			
Code Required Efficiencies	Enter the Nev Nev Rep	results in colu v Construction v Construction blacement Unit	Rs and COP's from the formula mn (e). EER: EER @ 95F Test Conditi COP: COP = 3.2 - (0.026 x Ca s EER: EER @ 95F Test Cond COP: COP = 2.9 - (0.026 x Cap/10	ions = 12.3–(0.2 p/1000) itions = 10.8–(0.	13x Cap/100	0)	umn (c).	F 000

/orksheet 4g VATER CHIL	Project Name:	WATER & AIR CO	OLED		Page:	
Equipment	(a)	(b)	(c)	(d)	(e)	(f)
Discussion of equipment atings and equipment definitions on page 4-19.	Faulta ID	Madal Designation	Cooling Capacity	Proposed Steady State	Proposed Part Load	Compliance Schedule
	Equip. ID	Model Designation	(Btu/hr)	COP	IPLV	(A - I)
a d locali	cate source of information			•		
toquirou	ARI Unitary Directory, S]
tion _	ARI Applied Products di	rectory, Section ULE, Page:				-
	Product data (Attach dat	ta furnished by the equipment suppli	ier, I.e., "cut	sheets")		J
Code					Minimu	m Rating
	Compliance Schedule	Equipment Type Air Cooled, With Condenser, Electrically	Cooling Cap		COP	IPLV
	Α		All Cap	acilles	2.80	2.80
Required Efficiencies	A	Operated Air Cooled, Without Condenser,	0			
Efficiencies his schedule of equipment efficiencies was	В	Air Cooled, Without Condenser, Electrically Operated	All Cap	acities	3.10	3.10
Efficiencies his schedule of equip-		Air Cooled, Without Condenser,	All Cap All Cap < 150	acities	3.10 4.20 4.45	3.10 4.65 4.50



Compliance Schedule	Equipment Type	Cooling Capacity (Tons)	COP	IFLV
А	Air Cooled, With Condenser, Electrically Operated	All Capacities	2.80	2.80
В	Air Cooled, Without Condenser, Electrically Operated	All Capacities	3.10	3.10
С	Water Cooled, Electrically Operated, Positive Displacement (Reciprocating)	All Capacities	4.20	4.65
	Water Cooled, Electrically Operated,	< 150 tons	4.45	4.50
D	Positive Displacement (Rotary, Screw	≥150, <300 tons	4.90	4.95
	and Scroll)	≥300 tons	5.50	5.60
	Mater Cooled Floatricelly Operated	< 150 tons	5.00	5.00
E	Water Cooled, Electrically Operated, Centrifugal	≥150, <300 tons	5.50	5.50
	Centinugai	≥300 tons	6.10	6.10
F	Air Cooled Absorption, Single Effect	All Capacities	0.60	
G	Water Cooled Absorption, Single Effect	All Capacities	0.70	
Н	Absorption Double Effect, Indirect Fired	All Capacities	1.00	1.05
I	Absorption Double Effect, Direct Fired	All Capacities	1.00	1.00

		Project Name:						Page:			
IEAT REJI	ECT.	EQUIPMT C	OOLING	TOWERS	S & AIR	COOLEI	CONE		RS		
Equipment-	Co	ooling Tower - Equip. ID		Design Enteri	ng Water Tem	perature (EWT)					
Cooling		Compliance Schedule		Design Leavi	ng Water Tem	perature (LWT)		Fan Type			
Towers				Design	Wet Bulb Ter	nperature (WB)					
iscussion of equip-	Lo	ocation of Equipment Sc	hedule for EWT,	LWT and WB							
nent ratings and quipment defin-		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)		
ions on page 4-19.			Tower Pump	Tower Fan HP	GPM/HP ((b)/(c)) at	Tower Pump GPM at CTI	Tower Fan HP at CTI	GPM/HP ((e)/(f)) at			
			GPM at Design	at Design	Design	Rated	Rated	CTI Rated			
	N	Model Designation	Conditions	Conditions	Conditions	Conditions	Conditions	Conditions	Complies		
	¹ Column	(g) is less than value stat	ed in table below								
	Cı	ooling Tower - Equip. ID		Design Enteri	ng Water Tem	perature (EWT)					
		Compliance Schedule		Design Leavi	ng Water Tem	perature (LWT)		Fan Type			
		·		_	_	. , ,		7.			
	1,	ocation of Equipment Sc	hedule for FWT	آ	Design Wet Bulb Temperature (WB)				_1		
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)		
			Tower Burns	Tower Fan HP	GPM/HP	Tower Pump GPM at CTI	Tower Fan HP at CTI	GPM/HP			
			Tower Pump GPM at Design	at Design	((b)/(c)) at Design	Rated	Rated	((e)/(f)) at CTI Rated			
	N.	Model Designation	Conditions	Conditions	Conditions	Conditions	Conditions	Conditions	Complies		
	<u> </u>										
	¹ Column (g) is less than value stated in table below										
quipment-	Air-Cool	led Condenser-Equip. ID			Condenser Te	mperature (CT)					
ir Cooled		Compliance Schedule									
ondensers	Location	of CT & ATEC Schedule									
scussion of equip-	Location	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)		
ent ratings and			Heat Rejected	Condenser	Btu/h-HP	Heat Rejected	Condenser	Btu/h-HP			
quipment definitions n page 4-19.			(Btu/h) at Design	Fan HP at Design	((b)/(c)) at Design	(Btu/h) at ARI Rated	Fan HP at ARI Rated	((e)/(f)) at ARI Rated			
. p g	Model Designation		Conditions	Conditions	Conditions	Conditions	Conditions	Conditions	Complies		
	¹ Column	(g) is greater than value s	stated in table be	low							
	Air-Cool	led Condenser-Equip. ID			Condenser Te	mperature (CT)					
	All Gool	Compliance Schedule				ndenser (ATEC)					
	Location										
	Location	of CT & ATEC Schedule (a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)		
		, ,	Heat Rejected	Condenser	Btu/h-HP	Heat Rejected	Condenser	Btu/h-HP	,		
OF OF			(Btu/h) at Design	Fan HP at Design	((b)/(c)) at Design	(Btu/h) at ARI Rated	Fan HP at ARI Rated	((e)/(f)) at ARI Rated			
\$ 8	N.	Model Designation	Conditions	Conditions	Conditions	Conditions	Conditions	Conditions	Complies		
1857	¹ Column (g) is greater than value stated in table below										
Required		,,,				_					
ocument-	Indicate s	source of information	•			ondensers only)					
tion		u	Product data (A	Attach data furni	shed by the eq	uipment supplier	: I.e., "cut she	ets")			
\ada	Compliance Schedule Equipment Type Propeller or Axial Fan Cooling		Total Custom Host				5 (5 .	, 2, 3		
Code Required			Total System Heat Rejection Capacity at	on Capacity at d Conditions Subcategory or Rating Conditions 95°F Entering Water				ormance Require			
Efficiencies			Rated Conditions				gpm/hp		Btu/h-hp		
	A Propeller or Axial Fan Cooling Towers		All	85°F Leaving Water 75°F wb Outdoor Air			>38.2				
	Centrifugal Fan Cooling			95 ⁰ F Entering Water							
	-	Centrifugal Fan Cooling	Δ.11	85 ^O F Leaving Water 75 ^O F wb Outdoor Air			. 22.2				
This schedule of quipment	В	Centrifugal Fan Cooling Towers	All	8 7	'5 ⁰ F wb Outdoor /	Air	>20.0				
	В		All	125 ⁰ F Con		Air 22 Test Fluid	>20.0		>176,000		

For purposes of this table, cooling tower performance is defined as maximum flow rating of tower divided by the fan nameplate rated motor horsepower For purposes of this table, air-cooled condenser performance is defined as heat rejected from refrigerant divided by the fan nameplate rated motor horsepower

	Project Name: AS-FIRE	D & OIL-FIRED				Page
Equipment	(a)	(b)	(c)	(d)	(e)	(f)
Discussion of equip- ment ratings and equipment definitions on page 4-19.	Equip. ID	Model Designation	Heating Capacity (Btu/hr)	Proposed Minimum AFUE (%)	Minimum E _c or	Compliance Schedule (A-D)
Required	Indicate source of	of information				
ocument-		sumer Directory, page(s):				
tion	☐ Product dat	a (Attach data furnished by the	equipment sup	plier, I.e., "c	ut sheets").	
Code			Heati	ng Capacity	(Btu/hr)]
Required	Compliance Schedule	Equipment Type	Over	But not over	Minimum Efficiency	
Efficiencies			0	300,000	80% AFUE]
nis schedule of	А	Gas Fired Hot Water	300,000 2,500,000	2,500,000	75% E _t 80% Ec	-
quipment effic- ncies was			0	300,000	75% AFUE	-
eformatted from	В	Gas Fired Steam	300,000	2,500,000		1

code, Table 13-Q.



Compliance			But not	Minimum
Schedule	Equipment Type	Over	over	Efficiency
		0	300,000	80% AFUE
Α	Gas Fired Hot Water	300,000	2,500,000	75% E _t
		2,500,000	-	80% Ec
		0	300,000	75% AFUE
В	Gas Fired Steam	300,000	2,500,000	75% E _t
		2,500,000	-	80% E _c
		0	300,000	80% AFUE
С	Oil Fired Hot Water, Steam	300,000	2,500,000	78% E _t
		2,500,000	-	83% Ec
	All	300,000	2,500,000	78% E _t
D	Oil Fired Residual Hot Water	2,500,000	-	83% E _c
	Steam	2,500,000	-	83% E _c

/orksheet 4j	I INIT L	Project Name: EATERS - GAS &		DED			Page
Equipment	(a)	(b)	(c)	NED	(d) Proposed		(e)
viscussion of equip- nent ratings and quipment definitions n page 4-19.	Equip. ID	Model Designation	Heating Capacity (Btu/hr)	Minimum E _C (%)	Minimum E _T (%)	Minimum AFUE (%)	Compliance Schedule (A-E)
equired		ce of information					
ocument- tion		Consumer Directory, page(s): data (Attach data furnished by	the equipme	ent supplier,	I.e., "cut sh	neets").	
ode				Capacity	(Btu/hr)		
Required Officiencies	Compliance Schedule	Equipment Type	Over	But not over	Minimum	Efficiency	
is schedule of equip- ent efficiencies was		Gas Fired Warm-Air Furnaces & Combustion	0	225,000	78% AFUE	E or 80% E	
formatted from code, able 13-P.	В	Furnace/AC Oil-Fired Warm-Air Furnaces	225,000	225,000	80% 78% AFUE	or 80% E	
OF OA	ט	& Combustion Furnace/AC	225,000	-	81%	6 E _t	



			Capacity (Btu/hr)				
	Compliance Schedule	Equipment Type	Over	But not over	Minimum Efficiency		
p-	А	Gas Fired Warm-Air Furnaces & Combustion	0	225,000	78% AFUE or 80% E		
Э,	A	Furnace/AC	225,000	-	80% E _c		
	7	Oil-Fired Warm-Air Furnaces	0	225,000	78% AFUE or 80% E		
	В	& Combustion Furnace/AC	225,000	1	81% E _t		
	С	Gas Fired Duct Furnaces	ALL		80% E _c		
	D	Gas Fired Unit Heaters	ALL		80% E _c		
	Е	Oil-Fired Unit Heaters	ALL		80% E _c		

than there are lines in this form. If needed use Add New Worksheet button at bottom **Complete this form for all terminal units with reheat to verify compliance with Section 1318.2.1 exception 1. **Terminal Unit (Variable Air Volume (VAV) Box) CFM Design Conditions **Required Information** Terminal Unit ID or Description/Location** Served CFM Airflow-CFM CFM Max Persq. ft Verification 30% of 0.4 CFM Occupancy of 1. **Terminal Unit ID or Description/Location** Served CFM Airflow-CFM CFM Max Persq. ft Verification 30% of 0.4 CFM Occupancy of 1. **Terminal Unit ID or Description/Location** Terminal Unit ID or Description/Location** Served CFM Airflow-CFM CFM Max Persq. ft Verification 30% of 0.4 CFM Occupancy of 1. **Terminal Unit ID or Description/Location** Terminal Unit ID or Description/Location** Served CFM Airflow-CFM CFM Max Persq. ft Verification 30% of 0.4 CFM Occupancy of 1. **Terminal Unit ID or Description/Location** Served CFM Airflow-CFM CFM Max Persq. ft Verification 30% of 0.4 CFM Occupancy of 1. **Terminal Unit ID or Description/Location** Served CFM Airflow-CFM CFM Max Persq. ft Verification 30% of 0.4 CFM Occupancy of 1. **Terminal Unit ID or Description/Location** Served CFM Airflow-CFM CFM Max Persq. ft Verification 30% of 0.4 CFM Occupancy of 1. **Terminal Unit ID or Description/Location** Served CFM Airflow-CFM CFM Max Persq. ft Verification 30% of 0.4 CFM Occupancy of 1. **Terminal Unit ID or Description/Location** Served CFM Airflow-CFM CFM Max Persq. ft Verification 30% of 0.4 CFM Occupancy of 1. **Terminal Unit ID or Description/Location** Served CFM Airflow-CFM CFM Max Persq. ft Verification 30% of 0.4 CFM Occupancy of 1. **Terminal Unit ID or Description/Location** Served CFM Airflow-CFM Max Persq. ft Verification 30% of 0.4 CFM Occupancy of 1. **Terminal Unit ID or Description/Location** Served CFM Airflow-CFM Max Persq. ft Verification 30% of 0.4 CFM Occupancy of 1. **Terminal Unit ID or Description/Location 4. **Terminal Unit ID or Description/Location	
Complete this form for all terminal units with reheat to verify compliance with Section 1318.2.1 exception 1. Terminal Unit (Variable Air Volume (VAV) Box) CFM Design Conditions Required Information Max. Cooling Terminal Unit ID or Sq. ft Area Airflow- Max. Heating Ventilation- 30% of 0.4 CFM Occupancy < or = to 0.4 CFM Occupancy < o	us Heat
Complete this form for all terminal units with reheat to verify compliance with Section 1318.2.1 exception 1. Terminal Unit (Variable Air Volume (VAV) Box) CFM Design Conditions Required Information Max. Cooling Terminal Unit ID or Sq. ft Area Airflow- Max. Heating Ventilation- Ventilati	re lines in this
Terminal Unit (Variable Air Volume (VAV) Box) CFM Design Conditions Required Information Comply Max. Cooling Terminal Unit ID or Sq. ft Area Airflow- Max. Heating Ventilation- Ventilation- Value CFM Ventilation- Ventilatio	ois form for all
Max. Cooling Terminal Unit ID or Sq. ft Area Airflow- Max. Heating Max. Cooling Ventilation- 30% of 0.4 CFM Occupancy < or = to	iis ioiiii ioi aii
Terminal Unit ID or Sq. ft Area Airflow- Max. Heating Occupancy of Sq. ft Area Airflow- Cooling Airflow- Max. Heating Occupancy of Occu	

horsepower of all supply, return, and exhaust fans (including series fan-powered terminal units) that operate during design conditions. Fan System ID Areas Served:	Complete one v	Project Name: PORT ENERGY vorksheet for each fan syst	em > 7.5 ho				motor brake
System serves hospital or laboratory and include flow control device for maintaining precise pressure of the maintaining precise pressure of the maintaining precise pressure of the maintaining precise pressure control device for maintaining maint	horsepower of a	all supply, return, and exha					
System serves hospital or laboratory and include flow control device for maintaining precise pressure device for maintaining precise pressure control device for maintaining precise pressure of the maintaining precise pressure of the maintaining precise pressure control device for maintaining precise for maintaining precise pressure control device for maintaining precise for maintaining precise pressure control device for maintaining precise for maintaining precise pressure control device for maintaining precise for maintaining precise pressure control device for maintaining precise pressure control device for maintaining precise pressure control device for maintaining for maint	Fan System ID						
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Fan Type (Supply, Return, Exhaust, Series VAV) CFM		1					1
The Plans/Specs show brake hp, nameplate hp, and CFM in the following locations: Total System Supply Fan Constant Volume, VAV, System Max Brake HP Allowed Or Hospital/Lab Brake HP Allowed Additional Pressure Drop Credit (all systems), Complete the section below if system contains filtration with a pressure drop at design low in excess of "w.c. (whospitals and Laboratories, Complete the section below if system contains filtration with a pressure brop Credit for (Hospitals and Laboratories, Complete the section below if system contains filtration with a pressure prop or direct evaporative humidifier/cooler. Additional Pressure Drop Credit for (Hospitals and Laboratories, Complete the section below if system serves a hospital or laboratory and contains rully ducted return/exhaust, return/exhaust air flow control devices, or individual filte system efficiencie Additional Pressure Drop Credits Filtration Pressure Drop Credits Pressure Drop, Inches, W.C. Grittation Pressure Drop Credits Grittation Pressure Drop Credits Pressure Drop, Inches, W.C. Grittation Pressure Drop Credits Pressure Drop Cred		Return, Exhaust, Series				•	Nameplate Motor HP
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Supply Fan CFM	Total System		Total	Total System			1
Additional Pressure Drop Credit (all systems). Complete the section below if system contains filtration with a pressure proper to design flow in excess of 1" w.c. (when filters are clean), heat recovery, or direct evaporative humidifier/cooler. Additional Pressure Drop Credit for Hospitals and Laboratories. Complete the section below if system serves a hospital or laboratory and contains rully ducted return/exhaust, return/exhaust air flow control devices, or individual filte system efficiencie Additional Pressure Drop Credits Pressure Drop, Inches, W.C. Filtration Pressure Drop >1" w.c. Heat Recovery Direct Evaporative Humidifier/Cooler Hospital and Laboratory Systems Only Return/Exhaust Flow Control Device (0.5" credit) Return/Exhaust Flow Control Device (0.5" credit) Individual Filter Efficiency > or = 85% (0.5" credit) Manufacturer's product data sheet(s) is attached and design values are shown in plans/specs in the following location Constant Volume or VAV (Use VAV Total Additional Adjusted HP (from Adjusted Brate HP (from Adjusted HP (from HP (from Adjusted HP (from HP		Constant Volume, VAV,			Brake HP	Nameplate	
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 3. Attach manual calculations, spreadsheets, computer model input and outputs, and other technical documentation that verifies required ventilation will be provided to each space. 4. I certify that to the best of my knowledge, the natural ventilation calculations provided are correct. This line to be signed and stamped by Architect or Engineer Registered in the State of Oregon. 	Workshee	et 4m			Project Name:					Page:	
(a) (b) Estimated Max Occupant Load from OMSC Table (Persons/1000sqtt. 403.3) Area (sqft) (persons/1000sqtt. 403.3) 1 Use this column when ventilation requirement is based on CFMsq ft per OMSC Table 4.3.3. 2 Complete this column when ventilation requirement is based on CFMsq ft per OMSC Table 4.3.3. 2 Complete this column when ventilation requirement is based on CFMsq ft per OMSC Table 4.3.3. 2 Describe calculation method used to determine ventilation delivered. Attach additional sheets as necessary 3. Attach manual calculations, spreadsheets, computer model input and outputs, and other technical documentation that verifies required ventilation will be provided to each space. 4. I certify that to the best of my knowledge, the natural ventilation calculations provided are correct. This line to be signed and stamped by Architect or Engineer Registered in the State of Oregon.	NATU	RAL V	ENTILATIO	N							
Space CROM# Cocupant Load Crowder Cr	1. Fill in w	orksheet f	or all spaces that v	vill be pro	vided with natural	ventilation.					
1 Use this column when ventilation requirement is based on CFM/sq ft per OMSC Table 4.3.3. 2 Complete this column if net free opening is less than 5% of floor area for smoking areas, otherwise enter N/A. Attach calculations. Number of Additional Worksheets 4m: 2. Describe calculation method used to determine ventilation delivered. Attach additional sheets as necessary 3. Attach manual calculations, spreadsheets, computer model input and outputs, and other technical documentation that verifies required ventilation will be provided to each space. 4. I certify that to the best of my knowledge, the natural ventilation calculations provided are correct. This line to be signed and stamped by Architect or Engineer Registered in the State of Oregon.	Space (Room # or name from	Room	Estimated Max Occupant Load from OMSC Table 403.3	Check if Smoking	Actual Max Load used to determine ventilation requirements	Required CFM/person (from Table	CFM/Sqft (from Table	Required Ventilation	Net Free Area of Outside Air	Opening Area / Floor	Calculated Natural Ventilation to Space
1 Use this column when ventilation requirement is based on CFM/sq ft per OMSC Table 4.3.3. 2 Complete this column if net free opening is less than 5% of floor area or 20% of floor area for smoking areas, otherwise enter N/A. Attach calculations. Number of Additional Worksheets 4m: 2. Describe calculation method used to determine ventilation delivered. Attach additional sheets as necessary 3. Attach manual calculations, spreadsheets, computer model input and outputs, and other technical documentation that verifies required ventilation will be provided to each space. 4. I certify that to the best of my knowledge, the natural ventilation calculations provided are correct. This line to be signed and stamped by Architect or Engineer Registered in the State of Oregon.											
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1 Use this column when ventilation requirement is based on CFM/sq ft per OMSC Table 4.3.3. 2 Complete this column if net free opening is less than 5% of floor area or 20% of floor area for smoking areas, otherwise enter N/A. Attach calculations. Number of Additional Worksheets 4m: 2. Describe calculation method used to determine ventilation delivered. Attach additional sheets as necessary 3. Attach manual calculations, spreadsheets, computer model input and outputs, and other technical documentation that verifies required ventilation will be provided to each space. 4. I certify that to the best of my knowledge, the natural ventilation calculations provided are correct. This line to be signed and stamped by Architect or Engineer Registered in the State of Oregon.											
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Worksheet 4m-2 Project Name: Page: NATURAL VENTILATION										
1. Fill in worksheet for all spaces that will be provided with natural ventilation.										
(a) Space (Room # or name from plans)	(b) Room Area (sqft)	(C) Estimated Max Occupant Load from OMSC Table 403.3 (persons/1000sqft.		(e) Actual Max Load used to determine ventilation requirements (sqft/person)	(f) Required CFM/person (from Table 403.3)	(g) Required CFM/Sqft (from Table 403.3) ¹	(h) Required Ventilation CFM	(I) Net Free Area of Outside Air Openings	(j) Opening Area / Floor Area	(k) Calculated Natural Ventilation to Space (design conditions) ²
]							
	1 Use this column when ventilation requirement is based on CFM/sq ft per OMSC Table 4.3.3. 2. Complete this column if net free opening is less than 5% of floor area or 20% of floor area for smoking areas, otherwise enter N/A. Attach calculations.									
4-23										