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Sent: Thursday, October 25, 2018 10:50 PM
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Subject: 2018 WSEC - Public Comments

See below for public comments on the 2018 WSEC draft:

Recommend Adding References to Appendix E in red below as with only the statement in C401.6 it is unclear how Appendix E is applied.

C401.1 Scope. The provisions in this chapter are applicable to commercial buildings and their building sites.

C401.2 Application. Commercial buildings shall comply with one of the following:

1. The requirements of Sections C402, C403, C404, C405, C406, C408, C409 and C410.
2. The requirements of Section C407.
3. When adopted by the local jurisdiction, the requirements of Appendix F, Outcome-Based Energy Budget, Sections C408, C409 and any specific section in Table C407.2 as determined by the local jurisdiction. The Proposed total UA of the proposed building shall be no more than 20 percent higher than the Allowed total UA as defined in Section C402.1.5.
4. When adopted by the local jurisdiction, the requirements of Appendix E, Renewable Energy, shall be required in addition to the requirements of Items 1, 2, and 3 above.

C401.2.1 Application to existing buildings. Work on existing buildings shall comply with Chapter 5 in addition to the applicable provisions of Chapter 4. When adopted by the local jurisdiction, the requirements of Appendix E, Renewable Energy, shall be required for additions larger than 5000 SF.

C502.3 Renewable Energy. When adopted by the local jurisdiction, the requirements of Appendix E, Renewable Energy, shall be required for additions larger than 5000 SF.

Recommend Adding ASHRAE 90.1-2016 Mechanical Efficiency Table as 90.1 is the federal energy code that in the minimum efficiency standard for mechanical equipment. Without these tables and definitions the 2018 WSEC will not be in compliance with federal standards. See text below in red that is added to the 2018 WSEC:

Add the following to Chapter 2 Definitions:

DX-dedicated outdoor air system units (DX-DOAS units): a type of air-cooled, water-cooled, or water source factory assembled product that dehumidifies 100% outdoor air to a low dew point and includes reheat that is capable of controlling the supply dry-bulb temperature of the dehumidified air to the designed supply air temperature. This conditioned outdoor air is then delivered directly or indirectly to the conditioned spaces. It may precondition outdoor air by containing an enthalpy wheel, sensible wheel, desiccant wheel, plate heat exchanger, heat pipes, or other heat or mass transfer apparatus.

integrated seasonal coefficient of performance (ISCOP): a seasonal efficiency number that is a combined value based on the formula listed in AHRI Standard 920 of the two COP values for the heating season of a DX-DOAS unit water or air source heat pump, expressed in W/W.

integrated seasonal moisture removal efficiency (ISMRE): a seasonal efficiency number that is a combined value based on the formula listed in AHRI Standard 920 of the four dehumidification moisture removal efficiency (MRE) ratings required for DX-DOAS units, expressed in lb of moisture/kWh.

Amend 2018 WSEC section below to refer to tables below:

C403.3.2 HVAC equipment performance requirements. Equipment shall meet the minimum efficiency requirements of Tables C403.3.2(1) through C403.3.2(911) when tested and rated in accordance with the applicable test procedure. Plate-type liquid-to-liquid heat exchangers shall meet the minimum requirements of Table C403.3.2(10). The efficiency shall be verified through certification and listed under an *approved* certification program or, if no certification program exists, the equipment efficiency ratings shall be supported by data furnished by the manufacturer. Where multiple rating conditions or performance requirements are provided, the equipment shall satisfy all stated requirements. Where components, such as indoor or outdoor coils, from different manufacturers are used, calculations and supporting data shall be furnished by the designer that demonstrates that the combined efficiency of the specified components meets the requirements herein.

Renumber and add tables below:

Table 6.8.1-15 Electrically Operated DX-DOAS Units, Single-Package and Remote Condenser, without Energy Recovery—Minimum Efficiency Requirements

<i>Equipment Type</i>	<i>Subcategory or Rating Condition</i>	<i>Minimum Efficiency</i>	<i>Test Procedure</i>
Air cooled (dehumidification mode)		4.0 <i>ISMRE</i>	AHRI 920
Air source heat pumps (dehumidification mode)		4.0 <i>ISMRE</i>	AHRI 920
Water cooled (dehumidification mode)	Cooling tower condenser water	4.9 <i>ISMRE</i>	AHRI 920
	Chilled Water	6.0 <i>ISMRE</i>	
Air source heat pump (heating mode)		2.7 <i>ISCOP</i>	AHRI 920
Water source heat pump (dehumidification mode)	Ground source, closed loop	4.8 <i>ISMRE</i>	AHRI 920
	Ground-water source	5.0 <i>ISMRE</i>	
	Water source	4.0 <i>ISMRE</i>	
Water source heat pump (heating mode)	Ground source, closed loop	2.0 <i>ISCOP</i>	AHRI 920
	Ground-water source	3.2 <i>ISCOP</i>	
	Water source	3.5 <i>ISCOP</i>	

Table 6.8.1-16 Electrically Operated DX-DOAS Units, Single Package and Remote Condenser, with Energy Recovery—Minimum Efficiency Requirements

<i>Equipment Type</i>	<i>Subcategory or Rating Condition</i>	<i>Minimum Efficiency</i>	<i>Test Procedure</i>
Air cooled (dehumidification mode)		5.2 <i>ISMRE</i>	AHRI 920
Air source heat pumps (dehumidification mode)		5.2 <i>ISMRE</i>	AHRI 920
Water cooled (dehumidification mode)	Cooling tower condenser water	5.3 <i>ISMRE</i>	AHRI 920
	Chilled Water	6.6 <i>ISMRE</i>	
Air source heat pump (heating mode)		3.3 <i>ISCOP</i>	AHRI 920
Water source heat pump (dehumidification mode)	Ground source, closed loop	5.2 <i>ISMRE</i>	AHRI 920
	Ground-water source	5.8 <i>ISMRE</i>	
	Water source	4.8 <i>ISMRE</i>	
Water source heat pump (heating mode)	Ground source, closed loop	3.8 <i>ISCOP</i>	AHRI 920
	Ground-water source	4.0 <i>ISCOP</i>	
	Water source	4.8 <i>ISCOP</i>	

Add the following to Chapter 6 Standards:

[AHRI Standard 920-2015 \(I-P\) Performance Rating of DX-Dedicated Outdoor Air System Units](#)

Thanks,

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