

ADVISORY COMMITTEE COMMENT FORM FOR PROPOSED CODE CHANGES

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1323, CE- 36

Proposed Code Change - Language

2012 IECC Chapter 4 COMMERCIAL ENERGY EFFICIENCY

Table 403.2.3(11) Electrically Operated Variable Refrigerant Flow Air-to-Air and Applied Heat Pumps– Minimum Efficiency Requirements

Add the following Table, which is a reproduction of ASHRAE Table 6.8.1J:

TABLE 6.8.1J Electrically Operated Variable Refrigerant Flow Air-to-Air and Applied Heat Pumps—
TABLE C403.2.3(11) Minimum Efficiency Requirements

Equipment Type	Size Category	Heating Section Type	Subcategory or Rating Condition	Minimum Efficiency	Test Procedure
VRF Air cooled, (cooling mode)	<65,000 Btu/h	All	VRF Multisplit System	13.0 SEER	AHRI 1230
	≥65,000 Btu/h and <135,000 Btu/h	Electric Resistance (or none)	VRF Multisplit System	11.0 EER 12.3 IEER 12.9 IEER (as of 7/1/2012)	
	≥65,000 Btu/h and <135,000 Btu/h	Electric Resistance (or none)	VRF Multisplit System with Heat Recovery	10.8 EER 12.1 IEER 12.7 IEER (as of 7/1/2012)	
	≥135,000 Btu/h and <240,000 Btu/h	Electric Resistance (or none)	VRF Multisplit System	10.6 EER 11.8 IEER 12.3 IEER (as of 7/1/2012)	
	≥135,000 Btu/h and <240,000 Btu/h	Electric Resistance (or none)	VRF Multisplit System with Heat Recovery	10.4 EER 11.6 IEER 12.1 IEER (as of 7/1/2012)	
	≥240,000 Btu/h	Electric Resistance (or none)	VRF Multisplit System	9.5 EER 10.6 IEER 11.0 IEER (as of 7/1/2012)	
	≥240,000 Btu/h	Electric Resistance (or none)	VRF Multisplit System with Heat Recovery	9.3 EER 10.4 IEER 10.8 IEER (as of 7/1/2012)	
VRF Water source (cooling mode)	<65,000 Btu/h	All	VRF Multisplit systems 86°F entering water	12.0 EER	AHRI 1230
	<65,000 Btu/h	All	VRF Multisplit systems with Heat Recovery 86°F entering water	11.8 EER	
	≥65,000 Btu/h and <135,000 Btu/h	All	VRF Multisplit System 86°F entering water	12.0 EER	
	≥65,000 Btu/h and <135,000 Btu/h	All	VRF Multisplit System with Heat Recovery 86°F entering water	11.8 EER	
	≥135,000 Btu/h	All	VRF Multisplit System 86°F entering water	10.0 EER	
	≥135,000 Btu/h	All	VRF Multisplit System with Heat Recovery 86°F entering water	9.8 EER	
VRF Groundwater source (cooling mode)	<135,000 Btu/h	All	VRF Multisplit System 59°F entering water	16.2 EER	AHRI 1230
	<135,000 Btu/h	All	VRF Multisplit System with Heat Recovery 59°F entering water	16.0 EER	
	≥135,000 Btu/h	All	VRF Multisplit System 59°F entering water	13.8 EER	
	≥135,000 Btu/h	All	VRF Multisplit System with Heat Recovery 59°F entering water	13.6 EER	

**TABLE 6.8.1J Electrically Operated Variable Refrigerant Flow Air-to-Air and Applied Heat Pumps—
TABLE C403.2.3(11) Minimum Efficiency Requirements (continued)**

Equipment Type	Size Category	Heating Section Type	Subcategory or Rating Condition	Minimum Efficiency	Test Procedure
VRF Ground source (cooling mode)	<135,000 Btu/h	All	VRF Multisplit System 77°F entering water	13.4 EER	AHRI 1230
	<135,000 Btu/h	All	VRF Multisplit System with Heat Recovery 77°F entering water	13.2 EER	
	≥135,000 Btu/h	All	VRF Multisplit System 77°F entering water	11.0 EER	
	≥135,000 Btu/h	All	VRF Multisplit System with Heat Recovery 77°F entering water	10.8 EER	
VRF Air cooled (heating mode)	<65,000 Btu/h (cooling capacity)	—	VRF Multisplit System	7.7 HSPF	AHRI 1230
	≥65,000 Btu/h and <135,000 Btu/h	—	VRF Multisplit system 47°F db/43°F wb outdoor air	3.3 COP	
			17°F db/15°F wb outdoor air	2.25 COP	
	≥135,000 Btu/h (cooling capacity)	—	VRF Multisplit System 47°F db/43°F wb outdoor air	3.2 COP	
			17°F db/15°F wb outdoor air	2.05 COP	
VRF Water source (heating mode)	<135,000 Btu/h (cooling capacity)	—	VRF Multisplit System 68°F entering water	4.2 COP	AHRI 1230
	≥135,000 Btu/h (cooling capacity)	—	VRF Multisplit System 68°F entering water	3.9 COP	
VRF Groundwater source (heating mode)	<135,000 Btu/h (cooling capacity)	—	VRF Multisplit System 50°F entering water	3.6 COP	AHRI 1230
	≥135,000 Btu/h (cooling capacity)	—	VRF Multisplit System 50°F entering water	3.3 COP	
VRF Ground source (heating mode)	<135,000 Btu/h (cooling capacity)	—	VRF Multisplit System 32°F entering water	3.1 COP	AHRI 1230
	≥135,000 Btu/h (cooling capacity)	—	VRF Multisplit System 32°F entering water	2.8 COP	

Proposed Code Change – Need and Reason

Reason: Variable refrigerant flow (VRF) systems are becoming more common, and there needs to be minimum efficiency requirements of those systems.

Proposed Code Change – Cost/Benefit Analysis

The benefit of the proposed code change is that established minimum efficiency of Variable Refrigerant Flow systems, which are becoming more popular and common in mechanical systems.

Other Factors to Consider Related to Proposed Code Change

1. Is this proposed code change meant to:

Xchange language contained in a published code book? If so, list section(s). 2012 IECC Table identified above

change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

delete language contained in a published code book? If so, list section(s).

delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

neither; this language will be new language, not found in the code book or in Minnesota Rule.

2. Is this proposed code change required by a Minnesota Statute or new legislation? If so, please provide the citation to the Statute or legislation. No
3. Will this proposed code change impact other sections of a published code book or of an amendment in Minnesota Rule? If so, please list the affected sections or rule parts. No
4. Will this proposed code change impact other parts of the Minnesota State Building Code? If so, please list the affected parts of the Minnesota State Building Code. No
5. Who are the parties affected or segments of industry affected by this proposed code change? Designers, users, and equipment suppliers of VRF systems.
6. Can you think of other means or methods to achieve the purpose of the proposed code change? If so, please explain what they are and why your proposed change is the preferred method or means to achieve the desired result. No
7. Are you aware of any federal requirement or regulation related to this proposed code change? If so, please list the regulation or requirement. No