COMPARISON TO 2009 -2012 IRC Mechanical Gas and Energy REQUIREMENTS

Section 3 Exhaust, Whole house ventilation, HVAC

Section 5 Forced Air, refrigerant, duct sealing, duct insulation, replacement thermostat

Section 6 Belly, Walls and Roof/ceiling Thermal Envelope

And GENERAL COMMENTS

Section	Title	Requirements	ICC Notes
General Comments **1. The work specifications for manufactured housing should be the same as the specifications for other residential dwellings addressing the same systems or assemblies. There is no difference between site-built and manufactured homes, for the purpose of retrofits, since they are already in place and assembled and installed, or built, as the case may be.**		2. Where there are references to ASHRAE 62.2 and there are provisions of the International Residential Code (IRC) covering the same assemblies and systems, the IRC provisions should be referenced. The IRC is used as the residential building code, or the basis for the residential code, in all 50 states, and is much more widely recognized and used by contractors, installers and code officials than the ASHRAE 62.2 document currently referenced throughout the draft SWS.	3. It is critically important to address safety issues, as well as energy issues, when performing retrofit work on existing homes, whether manufactured or site-built. The absence of references to a number of fire safety requirements, throughout the specifications, is a serious concern that needs to be addressed. If the goal of the specifications is a quality work product, a safe home is of primary importance. The draft guidelines omit some important IRC fire safety requirements, that should be included in the final specifications, as we have noted in individual section comments. This is a key reason to reference IRC sections where appropriate, as they incorporate safety requirements into efficiency provisions.
3.1.1	Assessment	Assessment will be done using ASHRAE 62.2 standard: • Blower door test • Fan flow measurements • Calculations	2012 IRC Sections R303.4 requires whole house ventilation; IRC Section N1102.4.1.2 gives the testing protocol for Blower door test; IRC Section M1507 gives the required air flow rates for ventilation. This is similar to ASHRAE 62.2 does. ASHRAE 62.2 is the Indoor Air Quality Standard for low rise residential construction. In determining the ventilation needs of the whole house, suggest that they talk about these issues in the IRC related to how tight the construction is, and what the size of the dwelling is.
3.1.2	Selection	Fan type will be capable of continuous	2012 IRC Sections R303.4 requires whole

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		operation and selected in accordance with ASHRAE 62.2 for: • Sizing • Climate considerations • Control strategy • Sone rating • Durability	house ventilation; IRC Section M1507 gives the required air flow rates for ventilation. This does the same thing that ASHRAE 62.2 does. Recommend both should be referenced.
3.1.4	Climate considerations	ASHRAE 62.2 will be referenced for climate considerations • Note: Whole house mechanical net exhaust flow for hot-humid climate will not exceed 7.5 cubic feet per minute/100 square feet	2012 IRC Section M1507 gives the required air flow rates for ventilation. The requirements are similar to those in ASHRAE 62.2
3.7.1	Forced air system requirements	Forced air system leakage will be less than 10% of the air handler flow when measured at 25 Pascals (Pa)	2012 IRC Section N1103.2.2 post construction tests limits total leakage to 4 cfm per 100 square feet measured at 25 Pascals (Pa)
5.1.1	Work Assessment	Assessment will be performed to identify problems with air, refrigerant, electrical, load, safety, indoor environmental quality (IEQ) and/or other needed repairs If new installation or replacement is necessary, see ACCA Manual J	2012 IRC Section M1401.3 requires sizing according to ACCA Manual S based on loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies.
5.8.1	Gas system: Cavity	Cavity size will be chosen based on the design input and fuel type and in accordance with the heating system manufacturer equipment input rating	The 2012 IRC Section R315.3 requires Carbon Monoxide detectors when repairs are made to a dwelling which has fuel fired appliances.

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5.10.6	Thermostat selection Heat pump	A thermostat with supplementary heat lockout that can interface with an outdoor temperature sensor will be selected	There is no reference to thermostat selection for forced air furnaces. 2012 IRC Section N1103.1.1 requires a programmable thermostat.
5.15.9	Duct board to flex	Metal take-off collar with a hip and an internal metal backer will be used Take-offs will be in accordance with the ICC Standard Mechanical Code and all local code requirements	Reference should be to the International Residential Code©
6.2.4	Materials	Selected material will be of minimal water absorbency Selected material will be noncorrosive	The workforce guidelines should also specify the following: IRC Section R302.10 requires insulation to meet a flame spread rating of 25 or less and a smoke development rating of 450 or less when tested in accordance with ASTM E84. IRC Section R316 requires foam plastic insulation to meet Section R316 for thermal barriers, etc.
6.3.3	Insulate floors	A rigid air barrier will be installed in contact with the bottom of the joists	The 2012 IECC Section C402.4.1.2.1 gives a performance criteria for material used as an air barrier (0.004 cfm/ft² under a pressure of 75 Pa when tested in accordance with ASTM E2178) and lists 15 materials that are deemed to comply. The guidelines would do well to incorporate a list of air barrier material.
6.3.4	Materials	Insulation materials will be of minimal water absorbency Fasteners will be corrosion resistant	The workforce guidelines should also specify the following: IRC Section R302.10 requires insulation to meet a flame spread rating of 25 or less and a smoke development rating of 450 or less when tested in accordance

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			with ASTM E84. IRC Section R316 requires foam plastic insulation to meet Section R316 for thermal barriers, etc.
6.4.5	Materials	Insulation will be installed in accordance with manufacturer specifications	The workforce guidelines should also specify the following: IRC Section R302.10 requires insulation to meet a flame spread rating of 25 or less and a smoke development rating of 450 or less when tested in accordance with ASTM E84. IRC Section R316 requires foam plastic insulation to meet Section R316 for thermal barriers, etc.
6.6.4	Fiberglass blown Insulation installation	Insulation will be installed to a density of 1.5 to- 1.6 pounds per cubic foot Using fill tube, 100% of each cavity will be filled to a consistent density Special precaution will be taken not to overfill the bottom of the cavity Fill tube will be inserted from the bottom of the wall cavity within 6” of the top of the cavity between the interior paneling and any existing insulation	The workforce guidelines should also specify the following: IRC Section R302.10 requires insulation to meet a flame spread rating of 25 or less and a smoke development rating of 450 or less when tested in accordance with ASTM E84.
6.7.4	Fiberglass blown Insulation installation	Insulation will be installed to a density of 1.5 to 1.6 pounds per cubic foot…	The workforce guidelines should also specify the following: IRC Section R302.10 requires insulation to meet a flame spread rating of 25 or less and a smoke development rating of 450 or less when tested in accordance with ASTM E84.
6.8.3	Insulation installation (Foam	Two-part foam selection will be based on regional considerations 100% of	The workforce guidelines should also specify the following: IRC Section R302.10 requires

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	Plastic)	each cavity will be filled to a consistent density without bulging of panels or siding	insulation to meet a flame spread rating of 25 or less and a smoke development rating of 450 or less when tested in accordance with ASTM E84. IRC Section R316 requires foam plastic insulation to meet Section R316 for thermal barriers, etc.
6.10.1	Attic, Ceiling and Roof verification	Non-IC rated light fixtures will be replaced with airtight IC-rated fixtures	2012 IRC Section N1102.4.4 requires new IC-rated recessed luminaires to be labeled as having an air leakage rate not more than 2.00 cfm when tested at 75 Pa in accordance with ASTM E283.
6.11.1	Attic, Ceiling and Roof verification	Non-IC rated light fixtures will be replaced with airtight IC-rated fixtures	Same as above.