
INTERNATIONAL RESIDENTIAL CODE – MECHANICAL

RM4-07/08

M1401.3, Chapter 43 (New)

Proposed Change as Submitted:

Proponent: Wesley R. Davis, Air Conditioning Contractors of America and American Society of Heating, Refrigerating and Air Conditioning Engineers

1. Revise as follows:

M1401.3 Sizing. Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on building loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies.

2. Add standard to Chapter 43 as follows:

ANSI/ACCA

Manual S3-2004 Residential Equipment Selection

Reason: ACCA Manual J8 does not address equipment selection (sizing), it documents the procedures for calculating heating and cooling loads. ACCA Manual S documents the procedures for selecting residential HVAC equipment using manufacturer's performance data to meet the heating and cooling loads calculated with ACCA Manual J.

Equipment is often selected based on the capacity rating from Air Conditioning Refrigeration Institutes (ARI) or the input capacity from the Gas Appliance Manufacturers Association (GAMA). Manual S explains the procedure of using the original manufacturer's expanded performance data to determine:

- A cooling unit's capacity in different climates (e.g., Phoenix, Boston, Miami, Seattle) or
- A heating unit's actual output capacity.

The country has many different climates and operating conditions. If oversized cooling equipment were selected, conditions in the home could develop that would affect the occupants health, e.g., oversized equipment in a humid climate would inadequately remove moisture vapor and promote the growth of unhealthy organisms.

If undersized heating equipment were selected because of insufficient understanding of altitude corrections or input capacity instead of output capacity (e.g., in Denver, an 80,000 Btu/h Furnace, with a 78% AFUE, delivers about 58,200 Btu/h, 29% less than nameplate) the selected equipment could fail to meet the requirements of IRC R303.8.

ANSI/ACCA Manual S 3-2004 is the ANSI standard for residential equipment sizing and selection. The International Code Council's requirements for sizing and selecting residential equipment should be consistent with the official ANSI standard.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: Review of proposed new standard ANSI/ACCA Manual S3-2004 indicated that, in the opinion of ICC Staff, the standard did not comply with ICC standards criteria, Section 3.6.3.1.

Committee Action:

Disapproved

Committee Reason: ACCA Manual S was deemed not to comply with ICC criteria for referenced standards due to permissive language. This manual can still be used and referenced when submitting equipment sizing calculations without the manual being referenced in the code because ACCA Manual J references Manual S.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Phil Forner, Allendale Heating Company, Inc., representing himself, requests Approval as Submitted.

Commenter's Reason: RM4-07/08 should be approved as submitted for the reasons stated by the proponent and because Manual S does contain mandatory language with regards to equipment sizing. Currently the IRC arguably allows for over sizing of equipment which could be harmful to the occupant(s) and or the structure in cooling applications.

Final Action: AS AM AMPC____ D

RM6-07/08 M1411.5

Proposed Change as Submitted:

Proponent: Michael J. Resetar, Armacell LLC; Roger Schmidt, Nomaco K Flex

Delete without substitution:

~~**M1411.5 Insulation of refrigerant piping.** Piping and fittings for refrigerant vapor (suction) lines shall be insulated with insulation having a thermal resistivity of at least R-4 and having external surface permeance not exceeding 0.05 perm [2.87ng/(s-m²-Pa)] when tested in accordance with ASTM E 96.~~

Reason: This section should be removed from the code or the title of the section should be changed. As insulation manufacturers, we are not aware of any refrigerant piping in residential building. Leaving this paragraph in the code is confusing at best. Chilled water, and cold water insulation is covered in other sections of the code.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: Section M1411.5 addresses the vapor (suction) lines that connect the evaporators to the condensing units in split-system HVAC installations.

Committee Action:

Disapproved

Committee Reason: The proponent's reason for wanting to delete this section was that there are no refrigerant pipes in residential construction. However, this section is still needed because it is referring to insulation of the vapor lines of a split-system HVAC system. If this section is deleted, the user will have to rely on Section R1103.3 which only requires R-2 insulation for mechanical system piping instead of the R-4 required by this section. This could cause condensation damage in the house.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Michael J. Resetar, Armacell LLC and Roger Schmidt, K Flex USA, representing same, requests Approval as Modified by this Public Comment.

Modify proposal as follows:

M1411.5 Insulation of air conditioning (refrigerant) piping. Piping and fittings for refrigerant vapor (suction) lines shall be insulated with insulation having a thermal resistivity of at least R-4 and having external surface permeance not exceeding 0.05 perm [2.87ng/(s-m²-Pa)] when tested in accordance with ASTM E 96.

Commenter's Reason: We are in agreement with the committee that the section should not be removed from the code, but would request a title change to better clarify this paragraph.

We would like to see the words "**air conditioning**" added to the title.

Final Action: AS AM AMPC____ D

RM11-07/08 M1503.1

Proposed Change as Submitted:

Proponent: Guy Tomberlin, Fairfax County, VA, representing the Virginia Plumbing & Mechanical Inspectors Association/Virginia Building and Code Officials Association

Revise as follows:

M1503.1 General. A range hood shall be installed above each range located in one- and two-family dwellings. Range hoods shall discharge to the outdoors through a single-wall duct. The duct serving the hood shall have a smooth interior surface, shall be air tight and shall be equipped with a backdraft damper. Ducts serving range hoods shall not terminate in an attic or crawl space or areas inside the building.

Exception: Where installed in accordance with the manufacturer's installation instructions, and where mechanical or natural ventilation is otherwise provided, listed and labeled ductless range hoods shall not be required to discharge to the outdoors.

Reason: This section as written provides all the criteria for the installation of range hoods in a residential application but fails to ever actually require the hood itself to be installed. The suggested new wording is consistent with most range manufacturer's recommendations.

Cost Impact: The code change proposal will not increase the cost of construction.

Committee Action: **Disapproved**

Committee Reason: This code change is too restrictive because it would preclude the use of other options available on the market, such as cooking appliances with down-draft exhaust systems.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Robert Adkins, Prince William County, VA, representing VBCOA/VPMA, requests Approval as Modified by this Public Comment.

Modify proposal as follows:

M1503.1 General. A range hood shall be installed above each range located in one- and two-family dwellings. Range hoods shall discharge to the outdoors through a single-wall duct. The duct serving the hood shall have a smooth interior surface, shall be air tight and shall be equipped with a backdraft damper. Ducts serving range hoods shall not terminate in an attic or crawl space or areas inside the building.

Exceptions:

1. Where installed in accordance with the manufacturer's installation instructions, and where mechanical or natural ventilation is otherwise provided, listed and labeled ductless range hoods shall not be required to discharge to the outdoors.
2. A range hoods shall not be required above a range where it is provided with listed alternatives that exhaust the cooking vapors to the outdoors, such as downdraft methods.

Commenter's Reason: This section as written provides all the criteria for the installation of range hoods in a residential application but fails to ever actually require the hood itself to be installed. The committee was concerned that the code change was too restrictive and precluded equipment such as appliances equipped with down draft ventilation systems. This change corrects that.

Final Action: AS AM AMPC____ D

