RM1–06/07
M1305.1.1

Proponent: Chuck King, Town of Oro Valley, AZ

Revise as follows:

M1305.1.1 ~~Central~~ Furnaces and air handlers. ~~Central~~ Furnaces and air handlers within compartments or alcoves shall have a minimum working space clearance of 3 inches (76 mm) along the sides, back, and top, with a total width of the enclosing space being at least 12 inches (305 mm) wider than the furnace or air handler. Furnaces having a firebox open to the atmosphere shall have at least a 6 inch (152 mm) working space along the front combustion chamber side. Combustion air openings at the rear and side of the compartment shall comply with the requirements of chapter 17.

Exception: This section shall not apply to replacement appliances installed in existing compartments and alcoves where the working space clearances are in accordance with the equipment or appliance manufacturer's installation instructions.

Reason: There is no reason that this requirement for "working space" should only apply to central furnaces. The need for working space for sealing bonnets, securing duct work to supply plenums, assuring that leaking of warm and cool air is minimized, etc. is equally important and necessary for all types of furnaces and air handlers alike.

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

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM2–06/07
M1307.5.1 (New)

Proponent: Chuck King, Town of Oro Valley, AZ

Add new text as follows:

M1307.5.1 Heating, air conditioning, and refrigeration equipment outlet. A receptacle outlet shall be installed in an accessible location for the servicing of heating, air conditioning, and refrigeration equipment in accordance with Section E3801.11.

Reason: The electrical requirements for servicing equipment are currently shown in IRC E3801.11, but may not be easily located. This new language will provide the necessary link to this information. This will prevent the necessity of running extension cords over long distances to plugs that may not be GFCI protected.

Cost Impact: The code change proposal will have very little impact if any impact on the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM3–06/07
M1307.6 (New)

Proponent: Charles E. Gerber, County of Henrico, VA, representing the Virginia Plumbing and Mechanical Inspectors Association/Virginia Building and Code Officials Association

Add new text as follows:

M1307.6 Plumbing connections. Potable water and drainage system connections to equipment and appliances regulated by this code shall be in accordance with Chapters 29 and 30.

Reason: Add needed guidance on the connection and installation of material covered in the plumbing sections.

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

Public Hearing: Committee AS AM D
Assembly: ASF AMF DF

RM4–06/07
M1410.1

Proponent: Bob Eugene, representing Underwriters Laboratories Inc.

Revise as follows:

M1410.1 General. Vented room heaters shall be tested in accordance with ASTM E 1509, UL 896 for oil-fired or UL 1482 for solid fuel fired and installed in accordance with their listing, the manufacturer's installation instructions and the requirements of this code.

Reason: To clarify what standard applies to what type of room heater.
UL 896 requirements apply to oil-burning flue-connected room heaters and ranges as defined herein. UL 1482 requirements cover room heaters which are freestanding fire chamber assemblies of the circulating or direct radiation type.

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

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM5–06/07
M1411.3

Proponent: Lawrence Brown, CBO, representing the National Association of Home Builders (NAHB)

Revise as follows:

M1411.3 Condensate disposal. Condensate from all cooling coils or evaporators shall be conveyed from the drain pan outlet to an approved place of disposal. Condensate shall not discharge into a street, alley or walkway ~~other areas where it would cause a nuisance~~.

Reason: The text is shown to be deleted because, without a direct provision in the IRC citing what constitutes a "nuisance", this provision is arbitrary and may ultimately be enforceable. Walkway is added as it relates to the same type of situations as a street or alley.

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

Public Hearing: Committee AS AM D
Assembly: ASF AMF DF

RM6–06/07
M1502.1

Proponent: Cecil F. Hardee, Jr., Fairfax County, VA, representing the Virginia Plumbing and Mechanical Inspectors Association/Virginia Building and Code Officials Association

Revise as follows:

M1502.1 General. Clothes dryers shall be exhausted in accordance with the manufacturer's instructions. Dryer exhaust systems shall be independent of all other systems, and shall convey the moisture to the outdoors.

Exception: This section shall not apply to listed and labeled condensing (ductless) clothes dryers.

Reason: This is a consistency change. This is the same information as the IMC. It is important to have the code address the manufacturer's installation instructions. Often times this point is overlooked and the manufacturer usually has specific requirements that are vital to safe and long lasting appliance operation.

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

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM7–06/07
M1502.2

Proponent: Lawrence Brown, CBO representing the National Association of Home Builders (NAHB)

Revise as follows:

M1502.2 Duct termination. Exhaust ducts shall terminate on the outside of the building. Exhaust duct terminations shall be made in accordance with the dryer manufacturer's installation instructions. Exhaust ducts shall terminate at a location as required by the manufacturer's instructions. If the manufacture's instructions do not specify a termination location, the exhaust duct shall terminate not less than 3 feet (914 mm) in any direction from openings into buildings. Exhaust duct terminations shall be equipped with a backdraft damper. Screens shall not be installed at the duct termination.

Reason: The text is inserted to have the installer first comply with the manufacturer's instructions. There may be a conflict if the design of the dryer exhaust termination (as shown in the manufacturer's instructions) allows a termination to be less than 3 feet, or requires a termination more than 3 feet. This also provides a more performance based provision related to the design and testing of a manufacturer's product.

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

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM8–06/07
M1502.5

Proponent: Cecil F. Hardee, Jr., County of Fairfax, VA, representing the Virginia Plumbing and Mechanical Inspectors Association/Virginia Building and Code Officials Association

Revise as follows:

M1502.5 Duct construction. Exhaust ducts shall be constructed of minimum 0.016-inch-thick (0.4 mm) rigid metal ducts, having smooth interior surfaces with joints running in the direction of air flow. Exhaust ducts shall not be connected with sheet-metal screws or fastening means which extend into the duct. Rivets shall be permitted to secure the connections provided that they do not extend into the duct and create an obstruction. Tape shall not be used as the only means to secure the connections.

Reason: This change keeps the requirement for connection of round ducts consistent. In other duct connections screws or other means are required to make a connection. Some approved method needs to be provided in the code for dryer exhaust. Current practice is the installation of tape alone which is insufficient. Rivets can be used to secure the connection, while there may be a slight protrusion in the duct it is not enough to permit lint build up. Tape alone will deteriorate over time and will allow the duct to separate.

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

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM9–06/07
M1502.5

Proponent: Guy McMann, CBO, Jefferson County, CO, representing the Colorado Association of Plumbing and Mechanical Officials (CAPMO)

Revise as follows:

M1502.5 Duct construction. Exhaust ducts shall be constructed of minimum 30 gage [Nominal 0.0157 inch] ~~0.016-inch-~~thick ~~(0.4 mm)~~ (0.399 mm) ridged metal ducts, having smooth interior surfaces with joints running in the direction of flow. Exhaust ducts shall not be connected with sheet metal screws or fastening means which extend into the duct.

Reason: This is a global change. In an effort to make the code a little more user friendly, it would be helpful if the sheet metal gage was always stated. For instance, 30 gage has a minimum tolerance of.0127 to a maximum tolerance of .0187 with a nominal thickness of .0157 according to the 1995 edition of *SMACMA.,* which is the standard this code recognizes. 99 percent of installers do not identify with a decimal and most designers and purchasers of material identify with gage as opposed to a decimal. In the above-mentioned section,.0157 is the mid-point between the legal tolerance. The code specifies a MINIMUM of .016 when .0127 is legal according to the standard. It would be legal to use metal with a thickness less than .016 as long as long as it was within the range of tolerance specified in the standard.

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

Analysis: If this code change is approved, staff will identify and change all instances where the duct thickness is prescribed in inches.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM10–06/07
M1502.5

Proponent: Guy McMann, CBO, Jefferson County, CO, representing the Colorado Association of Plumbing and Mechanical Officials (CAPMO)
Revise as follows:

M1502.5 Duct construction. Exhaust ducts shall be constructed of minimum 0.016-inch thick (0.4 mm) ridged metal ducts, having smooth interior surfaces with joints running in the direction of flow. ~~Exhaust~~ Ducts shall not be connected ~~with sheet metal screws or fastening means which extend into the duct~~ or installed with sheet metal screws or other fasteners that will obstruct the flow.

Reason: The IRC and the IMC should be consistent in its' approach as to how to fasten together dryer ducts. Merely taping a joint together is not an approved joining method according to the 1995 edition of the SMACNA Duct Construction Manual, Figure 3-2. The standard requires a minimum of three fasteners for ducts 14 inches and smaller. To require fasteners not to penetrate the duct would leave tape as the only means of joining. Tape is a sealant, not a recognized means of joining in the standard. The IMC does not prohibit penetrating the duct, as long as it doesn't "obstruct" the flow. The presence of a ¼ inch pop-rivet will not clog or obstruct the flow of a 4-inch duct, however, clogging is proportional to maintenance Is it possible to collect a fragment of lint? Quite possible, but not enough to "obstruct" the flow. On the other hand, three 1" long screws in each joint would obstruct the flow as a result of excessive lint build-up. Would 1" fasteners in an 14-inch industrial spiral dryer duct block the flow? Very doubtful. The possibility of blockage is proportional to the size of the duct as it relates to the size of the fasteners used. The language in this section should read the same as the IMC regardless of the size of the duct in question. Not changing this text is in direct conflict with the standard.

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

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM11–06/07
M1502.6

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

Revise as follows:

M1502.6 Duct length. The maximum length of a clothes dryer exhaust duct shall not exceed 25 feet (7620 mm) from the dryer location to the wall or roof termination. The maximum length of the duct shall be reduced 2.5 feet (762 mm) for each 45-degree (0.8 rad) bend and 5 feet (1524 mm) for each 90-degree (1.6 rad) bend. The maximum length of the exhaust duct does not include the transition duct.

Exceptions:

1. Where the make and model of the clothes dryer to be installed is known and the manufacturer's installation instructions for the dryer are provided to the building official, the maximum length of the exhaust duct, including any transition duct, shall be permitted to be in accordance with the dryer manufacturer's installation instructions.
2. Where large-radius 45-degree (0.8 rad) and 90-degree (1.6 rad) bends are installed, ~~determination of~~ the equivalent length of clothes dryer exhaust duct for each bend shall be as provided in the fitting manufacturer's installation instructions. ~~by~~ The engineering calculation used by the manufacturer of such fittings shall be in accordance with the ASHRAE Fundamentals Handbook. ~~shall be permitted~~.

Reason: Typical residential construction moves very quickly. The code consistently requires the manufacturer's installation instructions be followed. This critical calculation must be done by the manufacture of such fittings. It is not practical or economical to require an installer to obtain such information anywhere else other than from the manufacturer. The current provision is overly restrictive; this proposal is constant with common industry protocol. It simply requires the burden of verification to remain with the manufacturer as it should. We have seen some of these type fittings installed and the required information is located in the installation instructions provided by the manufacturer.

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

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM12–06/07
M1502.7 (New)

Proponent: Tony Longino, County of Greenville, SC, representing himself

Add new text as follows:

1502.7 Rough-in required. Where a compartment or space for a clothes dryer is provided, an exhaust duct system shall be installed.

Reason: Rough-in inspection for clothes dryer exhaust should not be limited to gas fired dryers. An electric clothes dryer is as likely to be a source of fire as a gas dryer. Currently this code section is in chapter 24 and will apply only to fuel gas appliances. Repeating the section in chapter 15 will allow an inspector to require a code approved dryer exhaust installation for any system installed in a new home. Chapter 15 describes installation for a clothes dryer exhaust, and never states when an exhaust must be installed. This lack of instruction has left many code officials with a "no dryer, no exhaust" method of enforcement.

In America there is an average of over 15,000 dryer fires per year *
Over the past 18 years I have done thousands of new home inspections. I have not inspected any houses, even in the poorest neighborhood, HUD homes, or Habitat for Humanity houses that have not made provisions for a clothes dryer.

*** Statistic per US consumer product safety division and NFPA research division**

Cost Impact: The code change proposal will not increase the cost of construction. Dryer must have exhaust.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM13–06/07
M1503.1, M1503.3

Proponent: Steven T. Taylor, Taylor Engineering LLC, representing:

David Grimsrud, chair of ASHRAE Standards Project Committee 62.2 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings (SSPC 62.2) and past chair of ASHRAE Standards Project Committee 62.1 Ventilation for Acceptable Indoor Air Quality (SSPC 62.1)

Max Sherman, past chair of SSPC 62.2
Steven Emmerich, chair of ASHRAE TC 5.12 Ventilation Requirements & Infiltration
Steven Taylor, past chair of SSPC 62.1 and member of IAPMO Mechanical Technical Committee

Revise as follows:

M1503.1 General. 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~~ exhaust is ~~otherwise~~ provided in accordance with Section M1502.3, listed and labeled ductless range hoods shall not be prohibited~~required to discharge to the outdoors~~.

M1503.3 Required kitchen exhaust ~~rates~~. ~~Where domestic kitchen cooking appliances are equipped with ducted range hoods or down-draft exhaust systems, the fans shall be sized in accordance with Section M1507.3.~~ In each dwelling unit, not less than one range or cooktop shall be provided with a ducted range hood that discharges to the outdoors. Such a hood shall comply with Section M1507.

Exception: Range hoods are not required where down-draft or other mechanical exhaust systems provide not less than 5 air changes per hour based on the total kitchen volume.

Reason: The purpose of this proposal is to strengthen the requirement for kitchen ventilation by increasing the stringency for allowable systems. The existing provisions allow the use of windows and low-flow downdraft exhaust systems for the intended purpose of exhausting contaminants produced by kitchen appliances. These systems are not able to remove kitchen contaminants from new housing. This change will improve the code by assuring that kitchen contaminants are exhausted outdoors and not simply redistributed in the home.

Cooking and other kitchen activities produce large quantities of moisture, organic compounds and a wide spectrum of particles. Modern houses with low infiltration and window use rates do not have sufficient ventilation to be able to cope with kitchen contaminants being dispersed throughout the home These contaminants cannot be filtered out and must be removed to avoid health problems and damage to the home. Windows do not always exhaust air; air just as often comes in as goes out. So for roughly half the time windows do not exhaust kitchen contaminants but push them into the rest of the house. Similarly, down-draft appliances of 50 cfm cannot capture significant amounts of contaminants. The values in Table M1507.3 are effective when used with vented range hoods, which have good capture efficiency. For down-draft or room-based exhaust systems the capture efficiency is poor and five room air changes of exhaust are necessary to keep contaminants from dispersing into other rooms.

Bibliography: ASHRAE Standard 62.2-2004 *Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings*

Cost Impact: The code change proposal will increase the cost of construction in those cases where a vented range hood costs more to install than a ductless range hood or if down-draft ventilation capacity needs to be increased to meet the 5 ACH requirement.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM14–06/07
M1502.4 (New)

Proponent: Lawrence Suggars, South Salt Lake, representing the Utah Chapter of ICC

Add new text as follows:

M1502.4 Makeup air. Where exhaust fans are installed, makeup air shall be provided, at the discretion of the code official, where the exhausted air exceeds 200 cubic feet per minute.

Reason: Makeup air has always been addressed in the IMC. Today exhaust fans used for residential application can become large enough to cause problems with residential environmental air. One notable problem is a negative pressure inside the home. The negative pressures can cause gravity vents to items like a furnace or water heaters to reverse. This normally exhausted air may be brought back into the home with the potential to pollute conditioned air with CO (very unhealthy). Recently it was brought to my attention where an accident happened in our state where the occupants suffered CO poisoning because of this very problem.
We are calling for makeup when equipment exceeds 200 cfm barrowing from the dryer vent section G2439.4 A design professional may be required to evaluate the negative pressure effects of the exhaust fans on other appliances in the house.

Cost Impact: The code change proposal will increase the cost of construction.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM15–06/07
R202 (New), R303.3, R303.3.1 (New), M1507, M1507.1, M1507.2, M1507.3, Table M1507.3

Proponent: Steve Taylor, Taylor Engineering, LLC, representing:
David Grimsrud, chair of ASHRAE Standards Project Committee 62.2 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings (SSPC 62.2) and past chair of ASHRAE Standards Project Committee 62.1 Ventilation for Acceptable Indoor Air Quality (SSPC 62.1)

Max Sherman, past chair of SSPC 62.2
Steven Emmerich, chair of ASHRAE TC 5.12 Ventilation Requirements & Infiltration
Steven Taylor, past chair of SSPC 62.1 and member of IAPMO Mechanical Technical Committee

1. Add new definitions as follows:

SECTION R202
GENERAL DEFINITIONS

BATHROOM. A room containing a bathtub, shower, spa, hot tub, or other bathing fixture.

TOILET ROOM. A room, other than a bathroom, containing a water closet or urinal.

2. Revise as follows:

R303.3 Bathrooms and Toilet Rooms. Bathrooms~~, water closet compartments~~ and ~~other similar~~ toilet rooms shall be provided with aggregate glazing area in windows of not less than 3 square feet (0.279 m2), one-half of which must be openable.

Exception: The glazed areas shall not be required where artificial light and a mechanical ventilation system in accordance with Section M1507 are provided. ~~The minimum ventilation rates shall be 50 cfm (23.6 L/s) for intermittent ventilation or 20 cfm (9.4 L/s) for continuous ventilation. Ventilation air from the space shall be exhausted directly to the outside.~~

3. Add new text as follows:

R303.3.1 Bathrooms shall be mechanically exhausted in accordance with Section 1507.

4. Revise as follows:

SECTION M1507
MECHANICAL EXHAUST ~~VENTILATION~~

M1507.1General. Where ~~kitchens, toilet rooms, and bath~~rooms are required to be mechanically exhausted~~ventilated~~, the ~~ventilation~~ equipment shall be installed in accordance with this section.

M1507.2 Recirculation of air. Exhaust air ~~from kitchens, bathrooms, and toilet rooms~~ shall not be recirculated within a residence or to another dwelling unit.

M1507.3 ~~Ventilation~~ Exhaust rate. ~~Ventilation~~ Exhaust systems shall be designed to have the capacity to exhaust the minimum air flow rate determined in accordance with Table M1507.3.

TABLE M1507.3
MINIMUM REQUIRED EXHAUST RATES FOR ONE- AND TWO-FAMILY DWELLINGS

AREA TO BE ~~VENTILATED~~ EXHAUSTED	~~VENTILATION~~ EXHAUST RATES
Kitchens	100 cfm intermittent or25 cfm continuous
Bathrooms, Toilet Rooms	Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous

For SI: 1 cubic foot per minute = 0.0004719 m3/s.

Reason: The purpose of this proposal is to strengthen the requirement for bathroom exhaust ventilation by disallowing the use of windows as the primary exhaust means. The existing provisions allow the use of windows for the intended purpose of exhausting of moisture created by the bath, shower or other activities. Windows are not able to directly remove moisture from new housing. This change will improve the code by assuring that bathroom moisture is exhausted outdoors and not simply redistributed in the home.

Bathing and other bathroom activities produce large quantities of moisture, as well as a wide spectrum of other contaminants. Modern houses with low infiltration and low-window use rates, do not have sufficient ventilation to be able to cope with moisture being dispersed throughout the home This is especially true in humid climates and severe climates. Moisture must be removed to avoid health problems and damage to the home such as those that might be caused by molds. Windows do not always exhaust air; air just as often comes in as goes out. So for roughly half the time windows do not exhaust moisture but push it into the rest of the house.

Bibliography: ASHRAE Standard 62.2-2004 *Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings*

Cost Impact: The code change proposal will increase the cost of construction in those cases where bathroom exhaust fans are not currently installed.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM16–06/07
M1507.4 (New)

Proponent: Steven T. Taylor, Taylor Engineering LLC, representing:

David Grimsrud, chair of ASHRAE Standards Project Committee 62.2 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings (SSPC 62.2) and past chair of ASHRAE Standards Project Committee 62.1 Ventilation for Acceptable Indoor Air Quality (SSPC 62.1)

Max Sherman, past chair of SSPC 62.2
Steven Emmerich, chair of ASHRAE TC 5.12 Ventilation Requirements & Infiltration
Steven Taylor, past chair of SSPC 62.1 and member of IAPMO Mechanical Technical Committee

Add new text as follows:

M1507.4 Vented fuel-fired appliances. Where both exhaust fans and vented fuel-fired appliances, other than direct-vent appliances, are located within the exterior envelope of a living space, the total maximum exhaust flow capacity of the two largest exhaust fans, excluding whole-house summer cooling fans, shall not exceed 15 cfm per 100 ft² (75 Lps/100 m²) of occupiable space. Where the total maximum exhaust flow exceeds this limit, the exhaust flow capacity shall be reduced or outdoor makeup air shall be provided to compensate for the excess.

Reason: The purpose of this proposal is to reduce the risk of backdrafting vented combustion appliances where excessive ventilation exhaust capacity exists within the pressure boundary of the residence.

Use of exhaust ventilation decreases the pressure within the house relative to the outside. This increases the risk of improper venting of vented combustion equipment located within the pressure boundary.

Field measurements show that excessive exhaust ventilation in a house reduces the ability of vented combustion equipment to vent properly. Improper venting dumps water vapor, carbon dioxide, carbon monoxide, nitrogen dioxide and other combustion products inside the house. To solve this one can either restrict the amount of exhaust ventilation or limit the use of atmospherically vented combustion equipment. This requirement chose the former to control the amount of depressurization caused by exhaust ventilation.

Bibliography: ASHRAE Standard 62.2-2004 *Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings*

Cost Impact: The code change will increase the cost of construction in those cases where excessive exhaust equipment must be installed.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM17–06/07
M1507.4 (New)

Proponent: Kevin W. Ezell, Town of Dryden, Southern Tier Building Officials Association, representing Lynn Day

Add new text as follows:

M1507.4 Whole House Fans. Whole house fans located in attics or crawl spaces shall be installed in accordance with the appliance manufacturer's instructions and the terms of the listing. Whole house fans shall be connected to a fire or smoke detector so that upon detection of fire or smoke, the electric power supply shall be terminated to the fan motor.

Reason: This is to bring regulation to an area that is missing in the International Residential Code. With the advent of more energy efficient dwelling, the need for mechanical movement of air to promote air quality and moisture inside the structure has become more common. This code section does not require whole house fans but only looks to regulate them should they be installed. The requirement to have the electric supply terminated in the event of a fire is to stop the "chimney effect" that a whole house fan would have should the fan continue to operate during the fire.

Cost Impact: The code change proposal will increase the cost only to the point that you have to have a "shut-off switch" in case there is a fire. This is not saying that you have to have a whole house fan but only giving guidelines for them if they are installed.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM18–06/07
M1508 (New), M1508.1 (New), M1508.2 (New), M1508.3 (New), Ch. 43 (New)

Proponent: Bob Eugene, representing Underwriters Laboratories, Inc.

Add new text as follows:

SECTION M1508
CENTRAL VACUUM CLEANING SYSTEMS

M1508.1 General. This section provides for the material, appliance and installation requirements for a central vacuum cleaning system from the inlet valves to the power unit. The system shall be independent of all other duct systems and shall convey debris to the central vacuum power unit.

M1508.2 Material. The central vacuum cleaning power unit shall be listed and labeled in accordance with UL 1017. The central vacuum cleaning tubing and fittings shall be listed and labeled in accordance with ASTM F2158.
M1508.3 Installation. Central vacuum power units shall be installed in accordance with the manufacturer's instructions and the requirements of Section M1307. Central vacuum cleaning tubing and fittings shall be installed in accordance with the manufacturer's instructions. Tubing passing through a fire-resistance-rated wall or floor/ceiling assembly shall be firestopped in accordance with the requirements of Section R317.3.

CHAPTER 43
REFERENCED STANDARDS

ASTM
F2158-01 Standard Specification for Residential Central-Vacuum Tube and Fittings

UL
1017-01 Vacuum Cleaners, Blower Cleaners, and Household Floor Finishing Machines, with revisions through August 2002

Reason: The purpose is to revisit the subject of residential central vacuum systems as previously considered in M61-03/04 and RM 8-04/05.
The proposed text adds clarity to the previous proposals. Central vacuum systems are not currently adequately regulated by the code.
The committee was concerned with the wordiness of the previous submission by Canplas Industries Ltd, so we have reduced the content to address the information really needed.
The previous final vote from the committee was a divided vote with comments that questioned the need to inspect the Central Vacuum system at all. Comments from the floor, however, suggested that there was a need to do so. Unfortunately, the final action in Detroit failed to receive the required 2/3-majority vote, necessitating a new submission in this code cycle. Some jurisdictions have had to write local code amendments to cover central vacuum installations. Some jurisdictions require licensing of installers and some require permits. There is currently no standard specified in the IRC to go by.
The National Electrical Code recognizes the need to include the Central Vacuum in the code. Section 422-15 permits listed central vacuum

outlet devices to be connected to branch circuits. Previous proposals published analysis indicated that in staff's opinion, UL 1017 and ASTM F2158 comply with Section 3.6 of the ICC Code Development Procedures regarding referenced standards.

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

Analysis: Results of review of the proposed standard will be posted on the ICC website by August 20, 2006.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM19–06/07
M1601.2.1

Proponent: David M. Wenzlaff, County of Henrico, VA, representing Virginia Plumbing and Mechanical Inspectors Association/Virginia Building Code Officials Association

Revise as follows:

M1601.~~2.1~~ 3Duct insulation materials. Duct insulation materials shall conform to the following requirements:

1. Duct coverings and linings, including adhesives where used, shall have a flame spread index not higher than 25, and a smoke-developed index not over 50 when tested in accordance with ASTME 84, using the specimen preparation and mounting procedures of ASTM E 2231.
2. Duct coverings and linings shall not flame, glow, smolder or smoke when tested in accordance with ASTM C 411 at the temperature to which they are exposed in service. The test temperature shall not fall below 250°F (121°C).
3. External duct insulation and factory-insulated flexible ducts shall be legibly printed or identified at intervals not longer than 36 inches (914 mm) with the name of the manufacturer; the thermal resistance *R*-value at the specified installed thickness; and the flame spread and smoke-developed indexes of the composite materials. All duct insulation product *R*-values shall be based on insulation only, excluding air films, vapor retarders or other duct components, and shall be based on tested C-values at 75°F (24°C) mean temperature at the installed thickness, in accordance with recognized industry procedures. The installed thickness of duct insulation used to determine its *R*-value shall be determined as follows:
   3.1. For duct board, duct liner and factory-made rigid ducts not normally subjected to compression, the nominal insulation thickness shall be used.
   3.2. For ductwrap, the installed thickness shall be assumed to be 75 percent (25-percent compression) of nominal thickness.
   3.3. For factory-made flexible air ducts, The installed thickness shall be determined by dividing the difference between the actual outside diameter and nominal inside diameter by two.

Reason: There is no actual change here other than format. Current 1601.2 is Factory-made ducts. The text of current 1601.2.1 is not relevant to factory-made ducts; it is an entirely different subject matter, insulation. We are simply attempting to renumber the section so it is reflected as an individual code section not a subsection of factory-made ducts.

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

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM20-06/07
M1601.3.1

Proponents: Cecil F. Hardee, Jr., County of Fairfax, VA, representing the Virginia Plumbing and Mechanical Inspectors Association/Virginia Building and Code Officials Association; Tony Longino, County of Greenville, SC

Revise as follows:

M1601.3.1 Joints and seams. Joints of duct systems shall be made substantially airtight by means of tapes, mastics, gasketing or other approved closure systems. Closure systems used with rigid fibrous glass ducts shall comply with UL 181A and shall be marked "181A-P" for pressure-sensitive tape, "181 A-M" for mastic or "181 A-H" for heat-sensitive tape. Closure systems used with flexible air ducts and flexible air connectors shall comply with UL 181B and shall be marked "181B-FX" for pressure-sensitive tape or "181B-M" formastic. Duct connections to flanges of air distribution system equipment or sheet metal fittings shall be mechanically fastened. Mechanical fasteners for use with flexible nonmetallic air ducts shall comply with UL 181B and shall be marked 181B-C. Crimp joints for round metal ducts shall have a contact lap of at least 11/2 inches (38 mm) and shall be mechanically fastened by means of at least three sheet-metal screws or rivets equally spaced around the joint.

Exception: Where a duct connection is made that is partially inaccessible, three screws or rivets shall be equally spaced on the exposed portion of the joint so as to prevent a hinge effect.

Reason: The purpose of this change is to add new requirements for the means of securing round duct when the entire duct is not accessible. When placing ductwork in the joist space or against framing members it can be impossible to install three screws or rivets in an "equally spaced" manner around the joint where the connection is made as one fastener would have to be located in the inaccessible portion of the round duct. This change would require the installer to secure the joint in a manner that would prevent a hinging effect.

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

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM21–06/07
M1601.3.2 (New)

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C., representing General Plastics

Add new text as follows:

M1601.3.2 Plastic duct joints. Joints between plastic ducts and plastic fittings shall be made in accordance with the manufacturer's installation instructions.

(Renumber subsequent sections)

Reason: This section will add the necessary information regarding the joining of plastic ducts. A recent formal interpretation clarified that plastic ducts are acceptable for use in aboveground duct installations. However, it is unclear how the sections of plastic duct and duct fittings are to be joined. Some manufacturers allow a solvent cemented joint while others permit a caulk to be used. This section will require the installer to follow the particular manufacturer's installation instructions.

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

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM22–06/07
M1601.3.7 (New), M1601.3.7.1 (New), Chapter 43 (New)

Proponent: Steven T. Taylor, Taylor Engineering LLC, representing:

David Grimsrud, chair of ASHRAE Standards Project Committee 62.2 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings (SSPC 62.2) and past chair of ASHRAE Standards Project Committee 62.1 Ventilation for Acceptable Indoor Air Quality (SSPC 62.1)

Max Sherman, past chair of SSPC 62.2
Steven Emmerich, chair of ASHRAE TC 5.12 Ventilation Requirements & Infiltration
Steven Taylor, past chair of SSPC 62.1 and member of IAPMO Mechanical Technical Committee

Add new text as follows:

M1601.3.7 Ducts located in garages. Ducts in garages shall comply with the requirements of Section R309.1.1.

M1601.3.7.1 Prohibited installation. Where they serve living space within a dwelling, air handlers, forced air furnaces, and return air ducts shall not be located in garages.

Exception: Where the total air leakage of the entire system is not more than 6 % of the total fan air flow when measured at 0.1 in. w.c. (25 Pa) static pressure using California Title 24 test method, ASTM E1554, or an equivalent test method.

CHAPTER 43
REFERENCED STANDARDS

ASTM

E 1554-03 Standard Test Methods for Determining External Air Leakage of Air Distribution Systems by Fan Pressurization

Reason: The purpose of this proposal is to strengthen the requirements to prevent the migration of contaminants from attached garages to occupiable spaces.

Garages attached to residences may contain numerous sources of air contaminants. These contaminants can be transported into the residence through either leaks in the separating walls or through leaky air handlers and ducts. This change will improve the code by reducing the potential for contaminant transport from garages into residences.

Many pollutant sources are commonly stored or used in residential attached garages such as gasoline-fired engines (automobiles, lawnmowers, etc.), paints, and solvents. Pressure differences across air leakage paths between the garage and adjoining living space can result in the transport of these contaminants to the living space. Factors influencing this transport include temperature differences, wind, the placement of the air handler or ducts in the garage, duct leakage, and equipment operation, such as exhaust fans and vented combustion appliances. A recent literature review (Emmerich et al. 2003) found substantial evidence that transport of contaminants from garages has the potential to negatively impact residential indoor air quality in either an acute or chronic manner.

Traditional practice assumed that garages were leaky structures and that infiltration would keep garages adequately ventilated. However, conventional construction practice for garages today result in significantly tighter structures with little infiltration and elevated contaminant concentrations in the garage. In fact, recent field measurements (Emmerich et al. 2003) have found that the envelopes of modern attached garages can be as tight as the envelopes of houses. Additionally, houses with HVAC system air handlers and ducts in the garage provide another potential pathway for pollutants to travel from garages to living spaces. Many studies have found that typical HVAC systems and their ductwork can be very leaky. Limiting the leakage of such systems located in garages will reduce the potential for contaminants to be transported into houses via this pathway. A simple test is needed to verify that air handlers and ductwork in garages is not excessively leaky.

Bibliography:

ASHRAE Standard 62.2-2004 *Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings*

Emmerich, SJ et al.. 2003. *NISTIR 7072 Air and Pollutant Transport from Attached Garages to Residential Living Spaces – Literature Review and Field Measurements.* National Institute of Standards and Technology.

Cost Impact: The code change proposal will increase the cost of construction in those cases where ducts or air handlers are located in garages thus requiring an air leakage test.

Analysis: Results of review of the proposed standard will be posted on the ICC website by August 20, 2006.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM23–06/07
M1601.4

Proponent: Ronald Majette, representing the United States Department of Energy

Revise as follows:

M1601.4 Under-floor plenums. An under-floor space used as a supply plenum shall confirm to the requirements of this section. Fuel gas lines and plumbing waste cleanouts shall not be located within the space. An unvented (conditioned) crawlspace that receives supply air for purposes of conditioning the crawlspace, whether or not there is a provision for return of air from the crawlspace to the air handler either directly or via air grilles connected to the other conditioned spaces, shall not be considered a plenum for purposes of this section.

Reason: The purpose of this code change is to clarify that conditioned crawlspaces are not to be considered plenums.

The code currently creates the potential for confusion when conditioned crawlspaces receive supply air. The code as written has been interpreted in some jurisdictions to classify such crawlspaces as plenums, which prohibits the placement of fuel gas lines and plumbing waste cleanouts therein. This change proposal will ensure that, for these purposes, conditioned crawlspaces are uniformly treated in the same manner as conditioned basements rather than as plenums.

The construction of conditioned crawlspaces is increasingly used as an energy-efficiency strategy because it allows supply ducts to be inside the building thermal envelope. The U.S. Department of Energy's Building America program, for example, has demonstrated the use of conditioned crawlspaces for locating ducts and mechanical equipment and for improving health, durability, and comfort.

References:

- http://www.buildingscience.com/resources/foundations/conditioned_crawl.pdf
- http://www.ibacos.com/pubs/CrawlspaceInsert.pdf

Systems Engineering Approach to Development of Advanced Residential Buildings, Report No. 7.D.1. Code Related Barriers, prepared by Building Science Corporation for National Renewable Energy Laboratory, Golden, CO. June 2205.

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

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM24–06/07
M1601.5 (New)

Proponent: Mark Riley, City of Troy Building Department, MI, representing himself

Add new text as follows:

M1601.5 Independent garage HVAC systems. Furnaces and air handling systems that supply air to living spaces shall not supply air to or return air from a garage.

Reason: Section R 309.1.1 is not clear if it applies to all openings to a garage. This section addresses protecting openings for wall and ceiling duct penetrations.
Then the question comes up in two areas, first can underground ducts used? Second if a fire damper is installed in the duct penetration, would the opening be allowed?

This new section added would make very clear that the furnace or air handling unit duct system for the living space cannot be used for heating or cooling a garage.

Contaminants coming from the garage, such as carbon monoxide, or flammable vapors, could easily enter a duct system into a house if the same duct system serves both the living space and the garage. If the owner wants to heat or cool a garage there are other options of appliances he could use to accomplish this without using the house's central air conditioning system.

Cost Impact: There could be a slight cost impact compared if a separate unit was used in lieu of using the house system.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM25–06/07
M1601.5 (New)

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

Add new text as follows:

M1601.5 Independent garage HVAC systems. Where provided with heating and cooling, garages shall have independent and dedicated HVAC systems. It shall be prohibited to utilize HVAC equipment to heat or cool a garage in conjunction with any other spaces.

Reason: This proposal is simply stating the intent of Section R309. The provisions that are currently shown in the IRC tell the user everything they need to know in relation to garages but fails to actually say what is meant. This proposal clarifies the intent.

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

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM26–06/07
Chapter 17

Proponent: Lawrence Suggars, South Salt Lake, representing Utah Chapter of ICC

Delete without substitution:

Delete Chapter 17 in its entirety and refer to Section G2407 Combustion Ventilation, and Dilution Air.

Reason: Combustion air as the title indicates in chapter 17 is combustion, ventilation, and dilution air. Section G2407 is a more complete section with respect to fully describing what combustion air is and all the ways it can be obtained. One example is G2407.6.2 One -permanent –opening method is not recognized in chapter 17 of the IRC. The proper place for combustion air is in the "Fuel Gas" section**.**

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

Analysis: Chapter 24 covers only gas-fired appliances.

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM27–06/07
2005.2

Proponent: Chuck King, Town of Oro Valley, AZ, representing himself

Revise as follows:

M2005.2 Prohibited locations. Fuel-fired water heaters shall not be installed in a ~~room used as a storage~~ clothes closet. Water heaters installed in a bedroom or bathroom shall be installed in a sealed enclosure so that the combustion air will not be taken from the living space. Direct-vent water heaters are not required to be installed within an enclosure.

Reason: Installing water heaters in closets has been the preferred location for an untold number of years. Using the verbiage of "storage closets" as a prohibition is very open ended and subject to various interpretations. The primary purpose of any closet is to provide storage of some kind. In fact, the very definition of "closet" in the IRC states that it is "a small room or chamber used for **storage**". If this interpretation is utilized, gas-fired water heaters would be prohibited any closet. This prohibition is overly restrictive and unjustified.

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

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM28–06/07
Table M2101.9

Proponent: Jim Paschal, Bodycote Testing Group, representing Aquatherm

Revise table as follows:

TABLE M2101.9
HANGER SPACING INTERVALS

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (feet)	MAXIMUM VERTICAL SPACING (feet)
PP > 1 ¼ inch	4	~~5~~ 10

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

(Portions of table not shown do not change)

Reason: The original submittal for the inclusion of PP materials had a typo in the vertical spacing interval which was not corrected before the committee approval and could not be change afterwards. The purpose of this submittal is to correct the vertical spacing requirement in the existing table.

PP piping systems were added to the IPC and IRC in 2006. In the IPC, the vertical spacing is 10 ft, as is proposed here. This was a simple typographical error in the original submittal which was not detected until it was too late in the process to make a change.

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

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM29–06/07
M2202.3

Proponent: Robert Adkins, Prince William County, VA, representing the Virginia Plumbing and Mechanical Inspectors Association/Virginia Building and Code Officials Association

Revise as follows:

M2202.3 Flexible connectors. Flexible metallic hoses ~~used where rigid connections are impractical or to reduce the effect of jarring and vibration~~ shall be listed and labeled in accordance with UL 536 and shall be installed in ~~compliance~~ accordance with ~~its~~ their listing and labeling and the manufacturer's installation instructions. Connectors made from combustible materials shall not be used inside of buildings or above ground outside of buildings.

Reason: This is a clean up of existing language. This does not change any technical requirements. The existing language was flawed by using subjective terms such as "impractical" and this proposal fixes the inconsistencies.

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

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

RM30-06/07
Chapter 43

Proponent: Standards writing organizations as listed below.

Revise standards as follows:

ASHRAE

American Society of Heating, Refrigerating and
Air-Conditioning Engineers, Inc.
1791 Tullie Circle, NE
Atlanta, GA 30329

Standard reference number	Title
ASHRAE-2005 ~~2004~~	ASHRAE Fundamentals Handbook – 2005 ~~2004~~

ASTM

ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

Standard reference number	Title
A 106-A 106M-04b~~04~~	Specification for Seamless Carbon Steel Pipe for High-Temperature Service
A 615/A 615M-05a ~~04a~~	Specification for Deformed and Plain Billet-steel Bars for Concrete Reinforcement
B 280-03 ~~02~~	Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service
C 411-05 ~~97~~	Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation
D 1248-05 ~~02~~	Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable
D 1693-05 ~~01~~	Test Method for Environmental Stress-Cracking of Ethylene Plastics
D 1784-05 ~~04~~	Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
D 2464-99e01	Specification for Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
D 2683-04 ~~98~~	Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing
D 2846/D 2846M-99e01	Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems
D 3311-02e01	Specification for Drain, Waste and Vent (DWV) Plastic Fittings Patterns
D 3462-05 ~~04~~	Specification for Asphalt Shingles Made From Glass Felt and Surfaced with Mineral Granules
E 2231-02e01 ~~04~~	Standard Practice for Specimen Preparation and Mounting of Pipe and Duct Insulation Materials to Assess to Surface Burning Characteristics
F 877-05 ~~02ae01~~	Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems
F 1281-05 ~~03~~	Specification for Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene (PEX-AL-PEX) Pressure Pipe
F 1807-05 ~~04~~	Specifications for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) tubing
F 1960-05 ~~04~~	Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Cross-linked Polyethylene (PEX) Tubing

UL

Underwriters Laboratories, Inc.
333 Pfingsten Road
Northbrook, IL 60062

Standard reference number	Title
~~80-96~~ 2004	Steel Tanks for Oil-burner Fuel
181-2005 ~~96~~	Factory-made Air Ducts and Air Connectors~~-with Revisions through November 2005~~
181A-2005 ~~98~~	Closure Systems for Use with Rigid Air Ducts and Air Connectors~~-with Revisions through December 1998~~
181B-2005 ~~95~~	Closure Systems for Use with Flexible Air Ducts and Air Connectors~~-with Revisions through August 2003~~
726- 1998 ~~95~~	Oil-Fired Boiler Assemblies-Revisions through February 2006 ~~January 2001~~
732-95	Oil-Fired Storage Tank Water Heater – Revisions through February 2005 ~~January 1999~~
923-02	Microwave Cooking Appliances-with Revisions through ~~January 2003~~ February 2006
1995-2005 ~~98~~	Heating and Cooling Equipment~~-with Revisions through August 1999~~

Reason: The *ICC Code Development Process for the International Codes* (Procedures) Section 4.5* requires the updating of referenced standards to be accomplished administratively, and be processed as a Code Proposal. In May 2005, a letter was sent to each developer of standards that are referenced in the I-Codes, asking them to provide ICC with a list of their standards in order to update to the current edition. Above is the list received of the referenced standards under the maintenance responsibility of the IRC Committee.

***4.5 Updating Standards:** The updating of standards referenced by the Codes shall be accomplished administratively by the appropriate code development committee in accordance with these full procedures except that multiple standards to be updated may be included in a single proposal.

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF