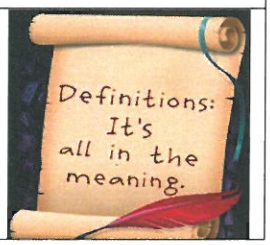
Mechanical

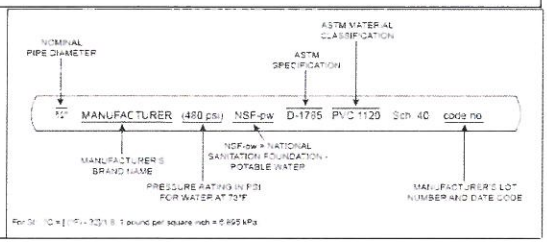
2012 IMC, 2012 IRC & 2012 VRC

- ❑ IMC Chapter 2 Definitions
- ❑ 301.3/M1301.2 Identification
- ❑ 301.4/M1301.4 Plastic Pipe, Fittings And Components
- ❑ 301.5/M1301.5 Third-Party Testing And Certification
- ❑ 301.9/M1303.1 Label Information
- ❑ 301.16/M1301.1.1 Flood Hazard
- ❑ 304.3/M1307.3 Elevation of Ignition Source
- ❑ 306.5 Equipment and Appliances on Roofs or Elevated Structures
- ❑ IRC M1401.2 Access
- ❑ 308.5 Labeled Assemblies
- ❑ 401.4 Intake Opening Location
- ❑ 403.3 Outdoor Airflow Rate
- ❑ 404.1 Enclosed Parking Garages
- ❑ USBC M1401.3 Equipment and Appliance Sizing
- ❑ USBC M1501.2Transfer Air
- ❑ USBC M1503.4 Makeup Air Required
- ❑ USBC M1503.4.1 Location
- ❑ 501.2 Independent System Required
- ❑ 501.3.2 Exhaust Opening Protection
- ❑ 504.8 Common Exhaust Systems for Clothes Dryers Located in Multistory Structures
- ❑ USBC 505.1 Domestic Systems
- ❑ USBC 505.3 Other than Group R
- ❑ 506.3.7.1 Grease Reservoirs
- ❑ 506.3.8 Grease Duct Cleanouts and Other Openings
- ❑ 506.3.9 Grease Duct Horizontal Cleanouts
- ❑ 506.3.10 Underground Grease Duct Installation
- ❑ 507.2 Where Required
- ❑ 507.2.1 Type I Hoods
- ❑ 507.2.1.2 Exhaust Flow Rate Label
- ❑ 507.2.2 Type II Hoods
- ❑ USBC 507.2.3 Domestic Cooking Appliances Used for Commercial Purposes
- ❑ 507.10 Hoods Penetrating a Ceiling
- ❑ 507.11 Grease Filters
- ❑ 510.7 Suppression Required
- ❑ 514 Energy Recovery Ventilation Systems

- ❑ 514.4 Recirculated Air
- ❑ 601.4 Contamination Prevention
- ❑ 602.2.1 Materials Within Plenums
- ❑ 603.7 Rigid Duct Penetrations
- ❑ 603.9/M1601.4.1 Joints, Seams, and Connections
- ❑ 603.17 Air Dispersion Systems
- ❑ 804.3 Mechanical Draft Systems
- ❑ 805.3 Factory-Built Chimney Offsets
- ❑ 901.4 Fireplace Accessories
- ❑ 903.2 Hearth Extensions
- ❑ USBC 908.5 Water Supply
- ❑ 927 (New) Radiant Heating Systems
- ❑ 928 Evaporative Cooling Equipment
- ❑ 928.1 General
- ❑ 1105.6.3 Ventilation Rate

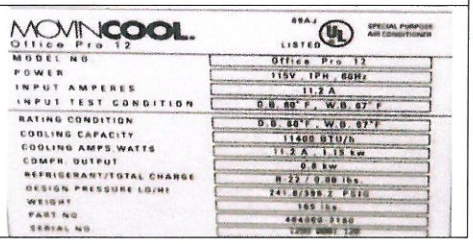
MECHANICAL
2012 IMC & 2012 VCC

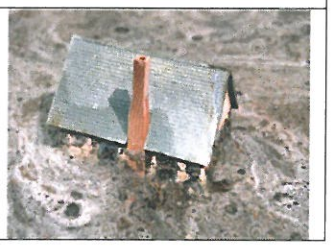
❑	**IMC Chapter 2 Definitions** • Environmental Air • Press Joint • Third-Party Certification Agency • Third-Party Certified • Third-Party Tested 

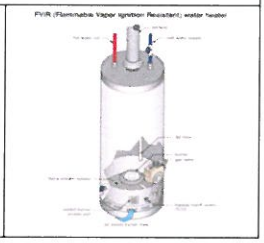
❑	**<u>301.3/M1301.2</u> Identification** Added in 2012 • All pipe, tubing and fittings shall bear the identification of the manufacturer. 

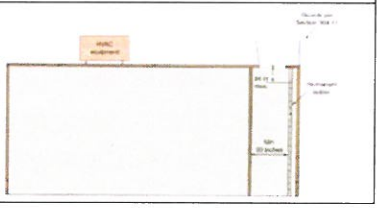
❑	**<u>301.4/M1301.4</u> Plastic Pipe, Fittings And Components** Added in 2012 • Plastic pipe, fittings and components shall be third-party certified as conforming to NSF 14. NSF 14

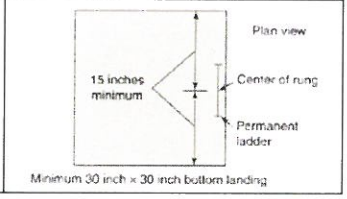
❑	**<u>301.5/M1301.5</u> Third-Party Testing And Certification** Added in 2012 • Piping, tubing and fittings shall comply with the applicable referenced standards, specifications and performance criteria of this code and shall be identified in accordance with Section 301.3.

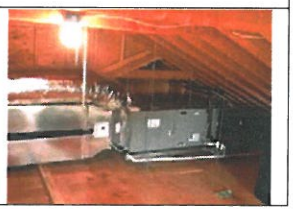
❑	**<u>301.9/M1303.1</u> Label Information** • Added #4: Electric comfort heating appliances: 

❑	**<u>301.16/M1301.1.1</u> Flood Hazard** • For structures located in flood hazard areas, mechanical systems, equipment and appliances shall be located at or above the elevation required by Section 1612 of the International Building Code.	

❑	**<u>304.3/M1307.3</u> Elevation of Ignition Source** • Exception added: Elevation of the ignition source is not required for appliances that are listed as flammable vapor ignition resistant.	

❑	**<u>306.5</u> Equipment and Appliances on Roofs or Elevated Structures** • 2. Amended: Top rung max 24" below upper edge of the roof hatch, roof or parapet, as applicable • 7. Added: Climbing clearance - Min 30" clearance perpendicular to, and 15" horizontally from, rung midline	

❑	**<u>306.5</u> Equipment and Appliances on Roofs or Elevated Structures** • 8. Added: 30"x30" clear landing area required • 10. Added: Access to ladders shall be provided at all times	

❑	**IRC <u>M1401.2</u> Access** • Heating and cooling *equipment and appliances* shall be located with respect to building construction and other *equipment and appliances to permit maintenance,* servicing and replacement.	

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308.5 Labeled Assemblies

- Added language: "that is listed and labeled in accordance with UL 1618"

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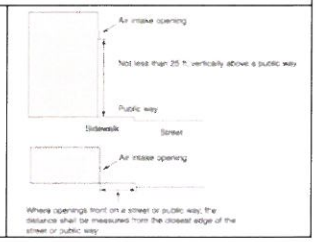
401.4 Intake Opening Location

Added:

- Outdoor air intake openings may be located less than 10 feet horizontally from streets, alleys, parking lots and loading docks if located at least 25 feet vertically above such locations.



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403.3 Outdoor Airflow Rate

- Note e revised: Rates per water closet/urinal
  - higher rate provided for intermittent exhaust system
  - lower rate permitted only for continuous exhaust system
- Note f revised: Lower rate is permitted only for continuous exhaust system

❑

403.3 Outdoor Airflow Rate

Note h :

- Each nail station must have a source capture system capable of exhausting at least 50 cfm per station

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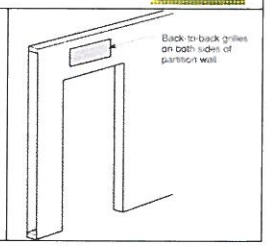
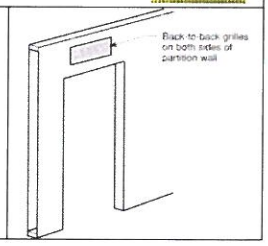
404.1 Enclosed Parking Garages

- 2) The system shall be arranged to operate automatically by means of carbon monoxide detectors applied in conjunction with nitrogen detectors...

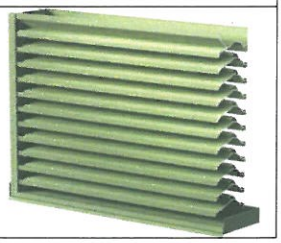
❑	**<u>USBC M1401.3</u> Equipment and Appliance Sizing** • Equipment/appliances shall be sized according to ACCA Manual S or by other approved methodologies Exception: • Equipment/appliance sizing is not limited to above capacities under certain conditions

❑	**<u>USBC M1501.2</u> Transfer Air** • Air transferred from occupiable spaces other than kitchens, baths and toilet rooms may serve as makeup air for exhaust systems 

❑	**<u>USBC M1503.4</u> Makeup Air Required** Exception Added: • Intentional openings for makeup air are not required for kitchen exhaust systems capable of exhausting not greater than 600 cubic feet per minute (0.28 m^3/s) provided that one of the following conditions is met: (See Code Book for details)

❑	**<u>USBC M1503.4.1</u> Location** • Kitchen exhaust makeup air shall be provided in the same room as the exhaust system or in a room or duct system communicating through one or more permanent openings with the room in which such exhaust system is located 

❑	**<u>501.2</u> Independent System Required** • Requirements addressing individual exhaust systems have been relocated from other sections of the IMC and placed here.

❑	**501.3.2 Exhaust Opening Protection** Added requirement • Louvers that protect exhaust openings in structures located in hurricane-prone regions shall comply with AMCA Standard 550 

❑	**504.8 Common Exhaust Systems for Clothes Dryers Located in Multistory Structures** • Added #12: Common multistory duct system shall serve only clothes dryers and shall be independent of other exhaust systems

❑	**USBC 505.1 Domestic Systems** Amended : • Where domestic range hoods and domestic appliances equipped with downdraft exhaust are provided, such hoods and appliances shall discharge to the outdoors through sheet metal ducts constructed of galvanized steel, stainless steel, aluminum or copper. Such ducts shall have smooth inner walls, shall be air tight, shall be equipped with a back draft damper, and shall be independent of all other exhaust systems.

❑	**USBC 505.1 Domestic Systems** • Exception #1 is changed to read: "In Group R buildings, where installed in accordance with the manufacturer's installation instructions and where mechanical or natural ventilation is otherwise provided in accordance with Chapter 4, listed and labeled ductless range hoods shall not be required to discharge to the outdoors."

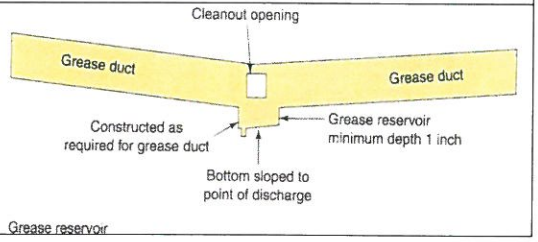
❑ **USBC 505.3 Other than Group R**

Section added:

- Electric domestic cooking appliances utilized for domestic purposes shall be provided with range hoods
  - Fuel-fired range hood per 507.2

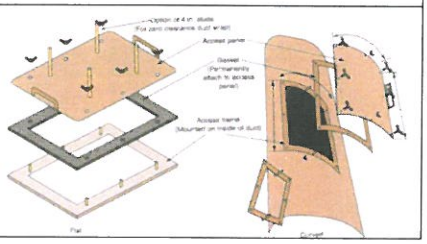
❑ **506.3.7.1 Grease Reservoirs**

- New section provides criteria for construction of a grease reservoir in a grease duct system where the reservoir is not a manufactured product.



❑ **506.3.8 Grease Duct Cleanouts and Other Openings**

- Section reformatted
- Added requirements:
  - Cleanout doors to be liquid tight
  - Gasket and sealing materials on cleanout doors to be rated minimum 1,500 F°

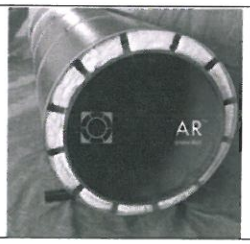


❑ **506.3.9 Grease Duct Horizontal Cleanouts**

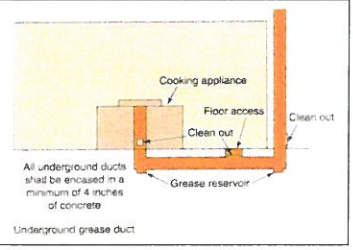
- Section rearranged for ease of use and clarification
- Several technical provisions added or modified

❑ **506.3.10 Underground Grease Duct Installation**

- Section has been moved and rearranged with additional requirements



❑	**506.3.10 Underground Grease Duct Installation**
	• Updated requirements include: • Permissible construction materials • Testing • Encasement in concrete • Slope toward reservoirs • Cleanout requirements

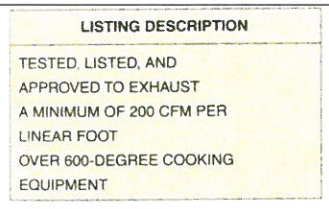


Underground grease duct

❑	**507.2 Where Required**
	• **Exception added**: Approved cooking appliances equipped with integral down-draft exhaust systems do not require hood above

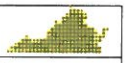
❑	**507.2.1 Type I Hoods**
	• Type I hood not required for electric cooking appliances if cooking process does not produce grease beyond prescribed threshold

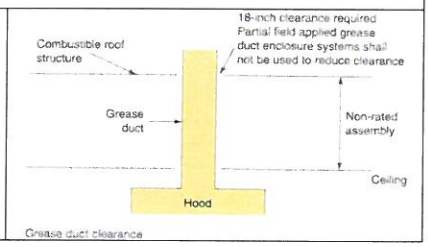
❑	**507.2.1.2 Exhaust Flow Rate Label**
	• Manufacturers of listed Type I commercial cooking hoods are now required to provide information on a label attached to the hood specifying the listed minimum exhaust air flow for the hood based upon the cooking appliance duty classification.



Type I hood label

❑	**507.2.2 Type II Hoods**
	• Type II hood required above appliances that produce heat or moisture, but not grease or smoke. • Exact exhaust rate is specified for areas where a cooking appliance is used but a Type II hood is not required

❑	**USBC 507.2.3 Domestic Cooking Appliances Used for Commercial Purposes**  • Domestic cooking appliances utilized for domestic purposes shall comply with Section 505.

❑	**507.10 Hoods Penetrating a Ceiling** • Field-applied grease duct enclosure systems are now specifically prohibited from being used as enclosures over the top of Type I hoods	

❑	**507.11 Grease Filters** • Listed and labeled in accordance with UL 1046	

❑	**510.7 Suppression Required** • **Added exception #2:** Automatic fire suppression systems are no longer required in exhaust ducts in semiconductor fabrication facilities.

❑	**514 Energy Recovery Ventilation Systems** • **Section Modified:** • Ducted heat recovery ventilators shall be listed and labeled in accordance with UL 1812. • Non-ducted heat recovery ventilators shall be listed and labeled in accordance with UL 1815.

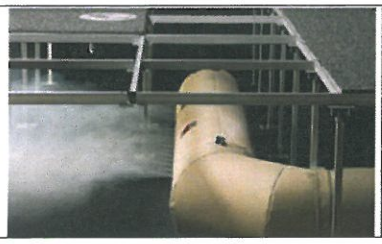
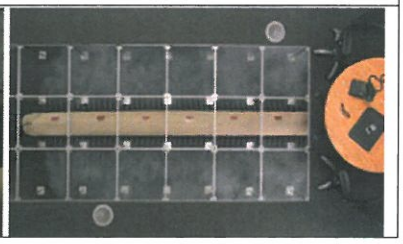
❑	**514.4 Recirculated Air** • Air conveyed within energy recovery systems shall not be considered as recirculated air where the energy recovery ventilation system is constructed to limit cross-leakage between air streams to less than 10 percent of the total airflow design capacity.

❑	**601.4 Contamination Prevention** • **2nd exception added:** • Chimneys and vents are now permitted to pass through a plenum under certain conditions • Conditions provide means to prevent seepage between flue gas and return air • 2.2. The venting system shall be installed such that fittings and joints between sections are not installed in the above ceiling space. • 2.3. The venting system shall be installed in a conduit or enclosure with sealed joints separating the interior of the conduit or enclosure from the ceiling.

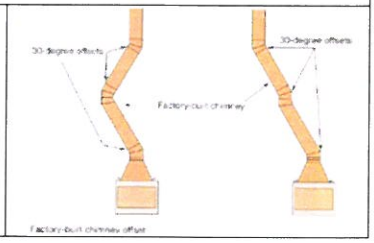
❑	**602.2.1 Materials Within Plenums** • **Clarification**: • Any material or assembly that encloses a combustible material in a plenum must be noncombustible, gypsum board, or listed and labeled as part of a tested assembly or system.

❑	**603.7 Rigid Duct Penetrations** • In relationship to the required garage/dwelling separation, only those ducts that penetrate a wall or ceiling between the dwelling and the adjacent garage need comply with Section 603.7. • (Ducts are not required to be 26 gauge when serving only the garage)

❑	**603.9/M1601.4.1 Joints, Seams, and Connections** • Unlisted duct tape is no longer permitted as a sealant on any duct.	

❑	**603.17 Air Dispersion Systems** • Air dispersion systems as defined in Section 202 and recognized in UL 2518 are now permitted to be installed.	 

❑	**804.3 Mechanical Draft Systems** • Section modified to add "listed and labeled in accordance with UL378"

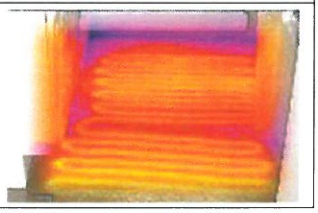
❑	**805.3 Factory-Built Chimney Offsets** • The maximum offset in a factory built chimney is now specified and the number of offsets has been limited	

❑	**901.4 Fireplace Accessories** • Fireplace accessories must now comply with UL 907	

❑	**903.2 Hearth Extensions** • This section has been modified for factory built fireplaces to include "shall comply with UL1618". _____	

❑	**USBC 908.5 Water Supply** • Cooling towers, evaporative coolers, and fluid coolers shall be provided with an approved water supply and sized for peak demand

❑	**927 (New) Radiant Heating Systems** • **927.1 General** • **927.2 Clearances** • **927.3 Installation on wood or steel framing** • **927.4 Installation in concrete or masonry** • **927.5 Finish surfaces**



❑	**928 Evaporative Cooling Equipment** • Requirements for the installation of evaporative coolers have been introduced into the IMC.

❑	**928.1 General.** Evaporative cooling equipment shall: • 1. Be installed in accordance with the manufacturer's instructions. • 2. Be installed on level platforms in accordance with Section 304.10. • 3. Have openings in exterior walls or roofs flashed in accordance with the *International Building Code.* • 4. Be provided with an approved water supply and sized for peak demand. The quality of the water shall be provided in accordance the equipment manufacturer's recommendations. The piping system and protection of the potable water supply shall be installed as required by the IPC. *(USBC amendment)* • 5. Have air intake opening locations in accordance with Section 401.4.

❑	**1105.6.3 Ventilation Rate** • Min. ventilation rates in an ammonia machinery room must now be in accordance with IIAR2

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