

## **A Comparison between the 2003 Editions of the Uniform Mechanical Code and the International Mechanical Code**

The following pages contain an overview, assessment, and comparison of the technical differences between the 2003 Uniform Mechanical Code and the 2003 International Mechanical Code.

The most significant sections of the codes were evaluated and a comparison made between the UMC and the IMC. This was done in sequential order by chapter and section. The first column contains the UMC section, the second lists the comparable IMC provision, if any, and the third contains an evaluation or finding that details the difference where they exist. The intent of this comparison is to provide a nonbiased, objective study showing the difference between the two codes and is intended to benefit the user of the code.

If a greater depth of detail is required with references to technical differences in specific provisions we urge you to contact the International Association of Plumbing and Mechanical Officials (IAPMO).

<b>UMC 2003</b>	<b>IMC 2003</b>	<b>Comments/Findings</b>
101.0 Title	101.1 Title	The IMC refers to ICC Fuel Gas Code for fuel gas provisions. These are contained in the UMC in Chapter 13
104.0 Application to Existing Mechanical Provisions	102 Applicability	Similar language except IMC has a section that discusses reference standards.
105.0 Alternate Materials and Methods of Const.	105.2 Alt. Materials	The UMC is much more detailed and allows the AHJ to use discretion as to the use of alternate methods and materials after proving equivalency. The IMC does not give discretion but rather "requires" the AHJ to allow the use of such alternate material.
106.0 Modification	105.1 Modification	Almost identical provisions.
108.0 Powers and Duties of the Authority Having Jurisdiction	104 Duties and Powers of the Code Official	Though the two sections are similar the UMC is more detailed throughout this section and is specific as to the rights of the AHJ.
115 .0 Fees	106.5 Fees	UMC has Table 1-1 at the end of the chapter; IMC has a permit fees table in the appendix. UMC fee table is broken down in greater detail than the IMC appendix.
203.0 (A thru Z) Definitions	Section 202 Definitions	Definitions in the two documents vary. Even though several terms are the same, the definitions are not always identical. The UMC is generic in its building code reference and, therefore, can be used with any building code while the IMC only recognizes the IBC.
302.0 Approval	105 Approval	The UMC references compliance with nationally recognized standards for approval of installation, design, and other requirements. IMC makes no mention of compliance or conformity with national standards for appliance requirements most likely due to its sole reference to the IFGC for all fuel burning appliances.
303.0 Connecting Gas Equipment	301.3 Fuel Gas Appliances and Equipment	The UMC has detailed language in conjunction with NFPA 54 while the IMC makes reference to another document, the IFGC.
309.0 Electrical Connections	301.7 Electrical	The UMC is specific as to the requirements for mechanical equipment while the IMC refers to another document for its provisions, the International Electrical Code.

<b>UMC 2003</b>	<b>IMC 2003</b>	<b>Comments/Findings</b>
310.0 Condensate Wastes and Control	307 Condensate Disposal	Provisions are similar although the UMC has a table allowing the code user to size condensate piping based on equipment capacity and specific atmospheric conditions.
Chapter 3 Overview	Chapter 3 Overview	The UMC contains tables prescribing minimum distances to combustibles for Unlisted Appliances. The IMC defers to the listing of the equipment for information pertaining to installations.
Chapter 4 Overview	Chapter 4 Overview	The UMC has provisions for evaporative cooling systems. The IMC has no such provisions. The UMC references the building code and also references ANSI/ASHRAE 62 (Standard for Ventilation) for ventilation requirements. The IMC contains some ventilation requirements and tables but the origin of such requirements are not apparent or identified.
Chapter 5 Overview	Chapter 5 Overview	The UMC is quite detailed concerning exhaust systems and has inserted new language for Kitchen systems reproduced from NFPA 96. The IMC reproduced some of their language from the ICC Fire Code and Building Code and references are made to these documents throughout requiring the user to have these texts.
503.0 Motors, Fan and Filters	503 Motors and Fans	Specific requirements for using listed air filters are only in the UMC.
504.0 Environmental Air Ducts	508 Commercial Kitchen Makeup Air 504 Clothes Dryer Exhaust Ducts	Maximum length limitation for clothes dryer exhaust is 14 ft under the UMC and 25 ft under the IMC. IMC allows use of manufacturer installation instructions to reduce this length. UMC does but only when approved by the AHJ . Both reduce distance for use of elbows though not identical.
504.3.2.1 Domestic Dryer Vents	504.6 Domestic Clothes Dryer Ducts	UMC states that listed clothes dryer transition ducts not more than 6 ft in length may be used in connection with domestic dryer exhausts. The IMC states they shall be limited to single lengths not to exceed 8 ft.
505.0 Design of Product Conveying Ventilation Systems	502 Required Systems	The approach to this subject is different within the two documents. The UMC has the provisions in the chapter while the IMC reproduces whole sections of the ICC Fire Code.

<b>UMC 2003</b>	<b>IMC 2003</b>	<b>Comments/Findings</b>
506.5 Supports	603.10 Supports	UMC states that spacing for supports shall not exceed 12 ft for 8 in. ducts nor 20 ft. for larger ducts unless justified by the design. The IMC states that ducts shall be supported at intervals not exceeding 10 ft. or by approved duct support systems designed in accordance with ICC Building Code.
506.7 Duct Clearances	506.3.6 Grease Duct Clearances 507.9 Clearances for Type I Hoods	The UMC details duct clearances and also includes language and a table with illustrations reproduced from NFPA 96. The UMC addresses Type I systems while the IMC has no provisions for these systems. The IMC only discusses grease duct systems and exhaust equipment serving Type I hoods.
508.1 Construction	507.5 Type II Hood Materials	Type II Hoods (steel): 24 gauge in UMC and 22 gauge IMC.
508.4.1 Canopy Size and Location	507.12 Canopy Size and Location	Identical but the IMC includes an exception that the hood shall be permitted to be flush with the outer edge of the cooking surface while the UMC requires some overhang.
508.4.1.1 Capacity of Hoods	507.13 Capacity of Hoods	The UMC provides formulae to calculate the minimum quantity of air that shall exhaust through the hood and the size of such hood and duct. The IMC provides tables for calculating the minimum net airflow for Type I hoods.
508.4.2 Capacity for Noncanopy Hoods	507.14 Noncanopy Size and Location	UMC states Noncanopy -type hood to the duct system shall be not less than 300 cubic feet/min per lineal foot of cooking equipment and shall be sized and installed in accordance with the terms of their listing and manufacturer's installation instructions. The IMC only states the hoods shall be located a maximum of 3 ft above the cooking surface and the edge of the hood shall be set back a maximum of 1 ft from the edge of the cooking surface

UMC 2003	IMC 2003	Comments/Findings
508.5 Exhaust Hood Assemblies with Integrated Supply-Air Plenums 509.3 Solid-Fuel Grease Removal Devices 510.8.2 Rooftop Terminations 510.8.3 Wall Terminations 511.1.2 In-Line Exhaust Fans 513.0 Fire-Extinguishing Equipment 516.0 Recirculating Systems 517.0 Solid-Fuel Cooking Operations	No such provisions in this chapter.	These sections in the UMC are a direct extraction from NFPA documents and there are no comparable requirements in the IMC.
601.0 Scope	601.0 Scope	Similar scopes.
602.1 General	602.1 General	UMC section references tables and prohibits the use of rated corridors for conveying air to and from rooms. This subject is covered in Section 601.2 of the IMC but it is less restrictive.
602.3 Factory-Made Air-Ducts	603 Duct Construction and Installation	The UMC is very prescriptive giving specifics about joints, seams and installation. References are made to UMC 6-5 that are found in the code. The IMC refers the user to SMACNA standards.
605.0 Insulation	604 Insulation	The IMC refers the user to the ICC energy code. The UMC contains Table 6-6A and B (per ASHRAE) for minimum R-values.
Chapter 7 Combustion Air	Chapter 7 Combustion Air	The IMC lists requirements for fuel-burning appliances other than gas-fired appliances. Gas burning appliances shall be in accordance with the ICC Fuel Gas Code. The UMC has detailed requirements for combustion air calculations for all fuel burning appliances, including natural gas within the chapter.
Chapter 7 Combustion Air Opening Figures	No such provision in this chapter.	UMC contains detailed drawings to guide the user in calculating different methods of supplying combustion air for appliances.
Chapter 8 Tables and Figures	Chapter 8 Tables	The UMC contains complete GAMA venting tables for all fuel burning appliances and figures from NFPA 54 to compliment the chapter. The IMC has no sizing tables and refers the user to the Fuel Gas code for venting all gas burning appliances.

<b>UMC 2003</b>	<b>IMC 2003</b>	<b>Comments/Findings</b>
801.1 Venting of Gas Appliances	801.1 Scope	The UMC covers venting of low heat gas appliances within the chapter and references NFPA 211 for venting of other gas appliances. The IMC states that gas-fired appliances shall be vented in accordance with the ICC Fuel Gas Code.
802.5.1.3 Masonry Chimneys	801.3 Masonry Chimneys	The IMC refers the user to the IBC. The UMC requires that they be built and installed in accordance with NFPA 211 and discusses linings within the section.
802.5.4 Inspection of Chimneys	No such provision in this chapter.	
803.2 Additional Requirements to Multiple Appliance Vent 803.2.12 and 803.2.13	801.19 Multistory Prohibited	The UMC allows multistory venting systems and has figures to guide the user in their design while the IMC prohibits their use.
901.0 Scope	901.0 Scope	UMC scope is different from IMC. IMC refers to ICC Fuel Gas Code for gas-fired appliances. UMC section specifically refers to warm air heating systems, vented decorative appliances, floor furnaces, unit heaters and room heaters.
904.0 Central Heating Boilers and Furnaces	No such provision in this chapter.	
904.10 Equipment on Roofs	No such provision in this chapter.	
905.0 Clothes Dryers	913 Clothes Dryers	The UMC gives detailed provisions for Type 1 and 2 dryers that was extracted from NFPA 54. The IMC makes reference to the manufacturer's installation instructions, UL 1240 and UL 2158.
911.0 Duct Furnaces	911 Duct Furnaces	The UMC gives detailed provisions extracted from NFPA 54 and provides information for duct furnaces in commercial garages and aircraft hangers. The IMC makes reference to the manufacturer's installation instructions and UL 1995.
912.0 Floor Furnaces	910 Floor Furnaces	The UMC has a more detailed section regarding floor furnaces and also includes provisions for access, seepage pan, wind protection, upper an first floor installation that is not found in the IMC.

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912.5 Bracing	910.3 Bracing	The UMC states the space provided for the furnace shall be framed with doubled joists and with headers not lighter than the joists. The IMC states that the floor around the furnace shall be braced and headed with a support framework design in accordance with International Building Code.
913.0 Food Service Equipment, Floor Mounted 916.0 Household Cooking Appliances	917 Cooking Appliances	The UMC gives detailed provisions for household and commercial cooking appliances that were extracted from NFPA 54. The IMC makes reference to the manufacturer's installation instructions and, although considered a nonresidential code, gives some information on dwelling installation.
914.0 Food Service Equipment Counter Appliances	No such provision in this chapter.	
915.0 Hot Plates and Laundry Stoves	No such provision in this chapter.	
917.0 Illuminating Appliances	No such provision in this chapter.	
918.0 Incinerators, Commercial-Industrial	907 Incinerators and Crematories	The UMC references NFPA 82. The IMC makes reference to the manufacturer's installation instructions and UL 791.
919.0 Infrared Heaters	912 Infrared Radiant Heaters	The UMC has detailed sections that include provisions for combustion and ventilation air and installation in commercial garages and aircraft hangers. The IMC has only provisions for supports and clearances.
920.0 Open-Top Broiler Units	No such provision in this chapter.	
921.0 Outdoor Cooking Appliances	No such provision in this chapter.	
922.0 Pool Heaters	916 Pool and Spa Heaters	The UMC gives detailed provisions for pool heaters. The IMC makes reference to the manufacturer's installation instructions, UL 726 and UL 1261.
923.0 Refrigerators	No such provision in this chapter.	
924.0 Room Heaters	921 Vented Room Heaters	The IMC has a detailed section and includes provisions for unvented room heaters which are prohibited by the UMC. The UMC only discusses vented types and references manufacturer's instructions for installation.
927.0 Unit Heaters	920 Unit Heaters	The UMC provides more details about clearances for unit heaters than the IMC which only references the manufacturer's instructions. As a rule the IMC uses the terms of listing or manufacturers installation instructions for appliances.

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929.0 Appliances for Installation in Manufactured Housing	No such provision in this chapter.	
930.0 Small Ceramic Kilns.	923 Small Ceramic Kilns	Both the UMC and IMC have the same general and installation requirements but the UMC has more detailed sections regarding fuel-gas controls, electrical equipment, installation inside buildings, and exterior installations.
1006.0 Detailed Requirements (Steam & Hot Water Boilers)	1003 Pressure Vessels	UMC sections contain provisions for boilers and pressure vessels and provides details on stack dampers. The IMC states that pressure vessels shall be installed in accordance with manufacturer's instructions.
1008.0 Relief Valve Discharge	1006.6 Safety and Relief Valve Discharge	UMC section more detailed. IMC refers to ICC Plumbing Code for low-pressure systems.
1009.0 Shutoff Valves	No similar provision	
1010.0 Gas Pressure Regulators	No similar provision	
1011.0 Low Water Cutoff	1007 Boiler Low Water Cutoff	UMC section more detailed and allows for an exception when serving 6 or less dwelling units.
1012.0 Combustion Regulators-safety valves	No comparable section.	
1013.0 Automatic Boilers	No comparable section.	
1014.0 Clearance for Access	No comparable provision.	
1015.0 Boiler Rooms and Enclosures	No comparable provision.	
1017.0 Floors	No comparable provision.	
1018.0 Chimney and Vents	No comparable provision.	
1019.0 Drainage	No comparable provision.	
1020.0 Fuel Piping, Tanks and Valves	No comparable provision.	
1022.0 Operating Adjustments and Instruction	No comparable provision.	
1023.0 Inspections and Tests	1011 Tests	UMC requires a warning notice before testing is completed. UMC also allows a registered professional engineer to do the testing. IMC states that tests shall be conducted in accordance with the requirements of ASME Boiler and Pressure Vessel Code.
1024.0 Operating Permit	No comparable provision.	
1025.0 Maintenance Inspection	No comparable provision.	
1026.0 Operation and Maintenance of Boilers	No comparable provision.	

<b>UMC 2003</b>	<b>IMC 2003</b>	<b>Comments/Findings</b>
1101.0 Scope	1101.0 Scope	UMC has two parts. Part I pertains to refrigeration systems and Part II to Cooling Towers. The IMC chapter is formatted differently using standard references and not providing detailed sections as found in UMC.
1105.0 Requirements for Refrigerant and Refrigerant Use	No comparable provision.	
1106.2 Supports and Anchorage	No comparable provision.	
1106.3 Access	No comparable provision.	
1106.7 Ventilation of Rooms Containing Condensing Units	No comparable provision.	
1107.2 Dimensions	No comparable provision.	
1107.4 Refrigeration Vapor Alarms	1105.3 Refrigerant Detector	UMC has the provisions in the code; IMC refers user to ICC Fire Code.
1108.3 Distribution of Ventilation 1108.4 Intermittent Control of the Ventilation System 1108.5 Emergency Control of the Ventilation Systems 1108.6 Central Control of Ventilation Systems 1108.8 Fans 1108.9 Ventilation Intake	No comparable provisions in this chapter.	
1109. 0 Refrigeration Machinery Room Equipment and Controls	Section 1105 and 1106	Similar requirements
1111.0 Erection of Refrigerant Piping 1112.0 Refrigerant Control Valves	There are no provisions that directly compare in IMC.	
Chapter 11 Part II - Cooling Towers	No comparable provisions in this chapter.	
Table 11-2 Table 11-3	No similar tables	
1201.2.1 Materials and Construction	1202 Materials	The UMC gives detailed provisions regarding steam and water piping and fittings. The IMC refers to a set of tables that references different national standards for each type of pipe and fitting material.
1201.2.3 Connections	1203 Joints and Connections	The UMC provides a detail section of the requirements and the IMC references national standards.
1201.2.4 Changes in Direction	No comparable provisions in this chapter.	

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1201.2.6 Hangers and Supports	1206.10 Pipe Support	The UMC provides details about supports and hangers and includes information regarding vertical and horizontal piping. The IMC references section 305 of their code book.
1201.2.7 Installation	1206 Piping Installation	The UMC provides a detailed section of the requirements including information regarding wall thickness, circulation, underground piping, above-ground piping, and trenches and tunnels. The IMC references the ICC Building Code for their installation requirements.
Chapter 12 Part II - Hydronic Panel Heating Systems	No such provision in this chapter.	
Chapter 13 Fuel Gas Piping	Chapter 13 Fuel Oil Piping and Storage	The UMC provides a detailed section of the requirements and the IMC references the ICC Fuel Gas Code, a separate document.
Chapter 14 Process Piping	No equivalent chapter in the IMC	
Chapter 15 Solar Systems	Solar Systems	This chapter references Section 1206.0 Heat Sources of the 2003 UMC and the Uniform Solar Energy Code. The IMC has a short chapter containing solar provisions
Chapter 16 Stationary Fuel Cell Power Plants	924 Stationary Fuel Cell Power Plants	Similar language except IMC states that their provisions are for stationary fuel cell power plants having a power output not exceeding 1,000 kW.
Appendix A - UMC Std No. 2-2 for Galvanized Sheet Metal UMC Std No. 6-2 for Metal Ducts UMC Std No. 6-5 for Installation of Factory-Made Air Ducts	No comparable provision.	The IMC does not contain transcribed standards as is the case of the UMC appendices which gives the user extensive guidance. This is a difference in style where the IMC only contains standards by reference.
Appendix B - Procedures to be Followed to Place Gas Equipment in Operation	No comparable provision.	The UMC details duct clearances and also includes language and a table with illustrations reproduced from NFPA 96. The IMC only discusses grease duct systems and exhaust equipment serving Type I hoods.
Appendix C - Installation and Testing of Oil (Liquid) Fuel-fired Equipment	No comparable provision.	
Appendix D - Unit Conversion Tables	No comparable provision.	