

Discipline: Mechanical

Code Year: 2012

CODE	DESCRIPTION	COMMENTS
BPRM2A EXCOR	CORRIDOR AS A RETURN PATH	Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts. (IMC [B] 601.2)
BPRM2A EXIT	EXIT ENCLOSURES AND PASSAGEWAY	Duct or pipe penetrations through rated walls or ceilings of exit enclosures or exit passageways are not permitted except for reqd, exit doors, if the duct or pipe serves or communicates with other spaces in the structure. (IBC, 1022.4 and 1022.5)
BPRM2A GUARD	GUARDS ON ELEVATED SURFACES	Guards shall be provided where appliances, equipment, fans or other components that require service and roof hatch openings are located within 10 feet of a roof edge or open side of a walking surface and such edge is located more than 30 inches above the floor, roof or grade below. The guard shall extend not less than 30 inches beyond each end of such appliances, equipment, fans, components that require service and roof hatch openings and the top of the guard shall not be less than 42 inches above the elevated surface adjacent to the guard. The guard shall be constructed so as to prevent the passage of a 21 inch sphere and shall comply with the loading requirements for guards specified in the International Building Coce. (IBC, 1013.5 and IMC,304.11)
BPRM2A ULDES	UL DESIGN # FOR FLOOR/CEILING	Provide a U.L. listing design number for the fire rated floor/ceiling (roof/ceiling) assembly. (VUSBC 109.3)
BPRM2D DDMPR	FIRE DAMPER AT RATED ASSEMBLY	Provide fire dampers where air distribution system penetrates assemblies that are required to be rated. (IMC [B] 607.5)
BPRM2D RDMPR	RADIATION DMPRS AT FLOOR OP'G	Provide ceiling radiation dampers where the air distribution system penetrates the ceiling of a floor/ceiling or roof/ceiling assembly which is required to be fire resistant rated. The ceiling radiation dampers shall be listed, labeled, and comply with UL 555C. Ductwork located within a rated floor/ceiling and roof/ceiling assembly shall conform to the requirements of the listed assembly. (IMC [B] 607.6 and {B} 607.6.2) and 607.3
BPRM2D SDMPB	SMKE DMPRS AT SMOKE BARRIERS	Provide smoke dampers where the air distribution system penetrates smoke barriers. The smoke damper shall be listed, labeled, and comply with UL 555S. (IMC [B] 607.5)
BPRM2D SDMPR	SMKE DMPRS AT AIR TRANSFR OP'G	Provide smoke dampers at air transfer openings of partitions required to resist the passage of smoke. The smoke damper shall be listed, labeled, and comply with UL 555S. A smoke detector shall activate the smoke damper. (IMC, 607.2) and 607.3.3.2

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BPRM2D SUBDK	SUBDUCTS	<p>Provide fire dampers where air distribution system penetrates assemblies that are required to be rated. (IMC [B] 607.5)</p> <p>Provide a detail or section showing the new connection to the exhaust duct in the rated shaft. Is this a subduct per section 607.5.5 exception 1.1 or is there a fire damper at the shaft penetration?</p> <p>Clearly show on the plan drawings how you are maintaining the rated shaft requirements.</p> <p>Show the point of connect to existing or for a sub duct if the ducting is new and meets the requirements in the above referenced code. Include a note on the fan operation to provide the continuous airflow upward if the subduct option is used.</p>
BPRM2E CALCS	ENERGY EFF. CALCS PER ASHRAE	Provide three (3) copies of energy efficiency design calculations and information in compliance with ANSI/ASHRAE/IESNA 90.1-2007. The signed and sealed print out of the above standard computer program is acceptable.
BPRM2E HP	HEAT PUMP ELEC SUP CONTROL	Provide a brief sequence of controls to show compliance to IECC section R403.1.2 for electric supplemental heat for a heat pump.
BPRM2E LOAD	LOAD CALCULATIONS	Provide heating and cooling load calculations for all new HVAC equipment sizing that comply with 2012 IECC section 403.2.1 and 403.2.2
BPRM2E RNUMB	PROVIDE R NO. ON ARCH. PLANS	Provide the R-value of all building insulation components on the architectural plans. (ANSI/ASHRAE/IESNA 90.1-2010)
BPRM2E SLABR	R NO. FOR SLAB-ON-GRADE	The architectural or structural drawings shall note the minimum R-value and installed dimensions for the perimeter slab-on-grade floor insulation. (ANSI/ASHRAE/IESNA 90.1-2010)
BPRM2G		
BPRM2G MGSRD	MED GAS STORAGE DOORS LOUVERS	Doors to medical gas storage areas must be equipped with 2 louvers which provide a minimum of 72 square inches of open area each. One opening shall be within one foot of the floor and the other shall be within one foot of the ceiling. Door louvers must be dampered such that the 1 hour rating is maintained. (NFPA 99C 5.3.3.3.6.4 and VMC/IMC 607.5.2)
BPRM2H ENCLO	GREASE DUCT ENCLOSURE	A grease duct serving a Type I commercial

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BPRM2H FIRE	FIRE SUPPRESSION INTERCONNECTIO	<p>kitchen hood that penetrates a ceiling, wall, or floor shall be enclosed within a two (2) hour fire rated shaft enclosure from the point of penetration to the terminal point outside. Fire resistant rated shaft enclosures for grease ducts are required to comply with IMC 506.3.11.1 and IBC Section 707. Provide complete and clear details on the plans showing compliance to these requirements. Provide penetration details for walls, floor/ceiling assemblies, and roof/ceiling assemblies. Provide grease duct cleanouts where required. (IMC, 506.3.11)</p> <p>Provide details on the plans showing compliance to IFC 509.1 for the required interconnection of the fire suppression system of the hood to the cooking appliances gas or electric.</p>
BPRM2H HOODS	KITCHEN HOOD DETAILS	<p>Provide detailed drawings for kitchen exhaust hood showing compliance with all subsections of IMC Section 507. Hood details must coordinate ducting with plan drawings.</p> <p>Factory built hood information must include:</p> <ul style="list-style-type: none"> " Hood Type, model name and number, and equipment schedule " Exhaust and make up air CFM " Type and surface area of grease filters " Test information showing compliance to UL710 or UL710B " Hood dimensions and gauge
BPRM2H MKUPA	PROVIDE MAKE-UP AIR	<p>Provide tempered makeup air that is approximately equal to the amount being exhausted from the commercial kitchen hood exhaust system. (IMC 508.1)</p>
BPRM2H SENSR	HEAT SENSOR INTERCONNECTION	<p>Indicate on the plans the means to automatically activate the commercial kitchen grease exhaust fan whenever cooking operations occur. (IMC, 507.2.1.1)</p>
BPRM2H SLOPE	GREASE DUCT SLOPE	<p>Show on the plan drawings the required slope and the direction of slope for horizontal sections of the grease duct. Show the locations of required cleanouts. (IMC 506.3.7 and 506.3.8)</p>
BPRM2H TYPE2	PROVIDE TYPE II HOOD	<p>A Type II hood shall be installed at or above all commercial food cooking appliances or dishwashing appliances that produce heat, steam, or products of combustion, but do not produce grease or smoke. (IMC 507.2 and 507.2.2)</p>
BPRM2H TYPEI	PROVIDE TYPE I HOOD	<p>Provide a Type I commercial kitchen hood at or</p>

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BPRM2H UL-ER	EVAL/UL RPT TO UL710 FOR HOOD	<p>above all commercial food heat processing appliances that produce grease vapors or smoke. (IMC 507.2.1)</p> <p>Provide a UL or ICC Evaluation Report for the factory built grease hood demonstrating compliance with UL Standard 710 or 710B. (IMC 507.1) VUSBC 109.3</p>
BPRM2H VELOC	GREASE DUCT AIR VELOCITY	<p>Type 1 hood grease duct systems must provide a minimum air velocity of 500 feet per minute. (IMC 506.3.4)</p>
BPRM2P CLASA	SEAL OR MASTER/CLASS A	<p>The mechanical plans shall bear the original seal and signature of a licensed design professional in the Commonwealth of Virginia, except where exempted by state law, Code of Virginia under Title 54 Chapter 4 section 1-402. Use of the seal shall comply with Virginia Administrative Code, Title 18, Section 10-20-760.</p> <p>When certifying a set of drawings, each page must be sealed, signed and dated. However, if the coversheet containing a full table of contents is certified, the remaining pages may contain a copy of the seal, signature and date.</p> <p>Where exempted, the plans may be prepared by a master level or Class A mechanical contractor licensed in the Commonwealth of Virginia who will supervise the actual field installation. In this case, the plans shall bear the name of the individual (not company name) including their occupation and address.</p>
BPRM2P COMOD	CODE MODIFICATION REQUEST REQ.	<p>A detailed chart for when sealed drawings are required is available at www.fairfaxcounty.gov/dpwes/publications/seal.pdf</p> <p>Because the proposed installation, listed below, does not comply specifically with current code requirements, a code modification request must be submitted for review. Please include in the request, details demonstrating equivalence to the spirit and functional intent of current code requirements (VUSBC 106.3). Request may be submitted in letter form to Land Development Services, Commercial Mechanical Plan Review Department, 12055 Government Center Parkway, Suite 324, Fairfax, Virginia 22035-5504, or you may use the following link to complete the code modification request form: http://www.fairfaxcounty.gov/dpwes/publications/codemods_appeals.htm</p>
BPRM2P DWGSZ	MINIMUM DRAWING SIZE	<p>The minimum size drawing for a commercial</p>

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BPRM2P EMAIL	EMAIL RESPONSE TO PDF REVIEWS	<p>plan submission is 21"x 30". The minimum scale is 1/8"=1'. (VUSBC 109.3)</p> <p>Mr. ###,</p> <p>I do not mind looking at what you have submitted, however I cannot do so by taking time away from other plans that are in my queue. Answering simple, code related questions that take very little time is one thing; reviewing and responding to this type of inquiry is quite another matter. If you still want me to look over this information, I will place this request in queue, generate a resubmission request in our database (which in turn will generate a resubmission fee based on the current fee schedule), and review this in turn. There are currently ## plans ahead of this request, and the estimated time for review could be up to three weeks.</p> <p>I apologize for any inconvenience this may cause you. Please let me know how you wish for me to proceed.</p>
BPRM2P IDENT	IDENTIFY AND LABEL ALL ROOMS	<p>Permit number - #####</p> <p>Identify and label all rooms and room uses. Occupant loads and ventilation rates shall be based on IMC Table 403.3.</p>
BPRM2P LACKG	INFORMATION LACKING	<p>The plans submitted are incomplete, and therefore a full list of rejection items cannot be provided, nor can an approval be given until the plans submitted are complete. (VUSBC, 109.3)</p>
BPRM2P NOTWT	NOT A MECHANICAL WALK-THRU	<p>These plans do not fall under the criteria required for a mechanical walk through submission. A mechanical review will be conducted, in turn, through the standard submission procedures.</p>
BPRM2P PLANS	COMPLETE HVAC PLANS	<p>Provide three (3) complete sets of mechanical (HVAC) plans showing the following components of the air distribution system: (VUSBC 109.3)</p> <ul style="list-style-type: none"> - Airflow (CFM) at each diffuser and register. - Sizes of all diffusers, registers, and grilles. - Sizes of all sections of ductwork. - Total supply airflow capacity (CFM) of HVAC equipment. - Total amount of outside air (CFM) introduced into the HVAC equipment.

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BPRM2P RESUB	RESUBMITTING CORRECTIONS	<ul style="list-style-type: none"> - Total heating capacity of the equipment (include both the input and output ratings). - Total and sensible cooling capacity of the equipment. - All vent sizes and details of venting, including the termination points outside. - Show all control devices, sensors, and related accessories. <p>When resubmitting corrected plans for review, provide the following:</p> <ol style="list-style-type: none"> 1. Provide a letter that answers how and where each item has been addressed or resolved, 2. Return the "county set" with the originally reviewed and marked-up sheets. Insert the new replacement sheet in front of each of the voided sheets in the county set, 3. Mark the sheets with either "Void" or "Retain". "Void" sheets no longer applicable to the set, and "Retain" sheets that will be "saved for approved stamps", 4. Indicate changes by dated revision symbol, clouding or similar method, 5. Minor corrections may be made on the original sheets if initialed by the designer.
BPRM2R ACOVR	AC OVERSIZED	<p>Each additional review is charged by trade. Plan resubmission fees are described in Chapter 61 of the Code of the County of Fairfax, Virginia section 61-1-3 "Fees" in subsection 2. (B) or go to fairfaxcounty.gov/dpwes/construction/feeschedule.pdf.</p> <p>Air conditioning unit is oversized per Manual J. Provide the manufacturer's specifications for the next available smaller unit size. See Fairfax County's certification guidelines. IRC M1401.3</p>
BPRM2R ACUND	AC UNDERSIZED	<p>Air conditioning unit is undersized per Manual J. Provide the manufacturer's specifications for the next available larger unit size. See Fairfax County's certification guidelines. IRC M1401.3</p>
BPRM2R COPY	SUBMITTED COPIES ONLY	<p>All submitted certifications are copies of an original. Provide the original certification for county retention. (VUSBC 109.3)</p>
BPRM2R DUCTS	DUCT SIZES INSUFFICIENT	<p>Duct sizes and/or quantities are insufficient for the following rooms:</p>
BPRM2R HTOVR	HEATING OVERSIZED	<p>Heating system unit is oversized per Manual J. Provide the manufacturer's specifications for the next available smaller unit size. See Fairfax County's certification guidelines. IRC</p>

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BPRM2R HTUND	HEATING UNDERSIZED	M1401.3 Heating system unit is undersized per Manual J. Provide the manufacturer's specifications for the next available larger unit size. See Fairfax County's certification guidelines. IRC M1401.3
BPRM2R RETUR	RETURN AIR PROHIBITED LOCATION	Return air is not permitted to come from prohibited sources listed in 2012 IRC section M1602.2, Item 4 in the list of prohibited locations is: 4. A closet, bathroom, toilet room, kitchen, garage, mechanical room, furnace room or other dwelling unit. Please review the entire list for other prohibited locations.
BPRM2R SIG	SIGNATURE OF LICENSED PROFESSI	The heat loss/gain certification form must be signed by the architect/engineer, owner, or master tradesman responsible for the design of this system. Attempts at locating the name or license number provided on the certification form through the DPOR web site have been unsuccessful. Please clarify and correct this. See the Code of Virginia Title 54.1-402.
BPRM2V ASH62	NO 50% REDUCTION PER ASHRAE 62	A 50% reduction in the occupancy loads per ASHRAE 62 is not permitted. Please review Fairfax County's "Ventilation Air Policy" (may be attached). You may also view this document on our web site "letters to industry" at (http://www.fairfaxcounty.gov/dpwes/publications/lti/03-03.htm)
BPRM2V ASHRA	ASHRAE 62.1 REFERENCE WRONG	The outdoor air calculation provided is referencing ASHRAE 62.1 for all of its outdoor air elements. The only reference to ASHRAE 62.1 made by the International Mechanical Code (the correct code reference for outdoor air requirements) is section 403.3.2.3.2 which references Appendix A only. Please correct this on the plans.
BPRM2V BALAN	AIR BALANCE CALCULATION	Provide an air balance schedule for the following spaces: (IMC 403.1 and 501.4 VUSBC, Sect. 109.3)
BPRM2V CFMDG	CFM DIFFUSERS AND GRILLS	Clearly show on plans the design airflow (cfm) at each diffuser, register, and grille. (VUSBC, 109.3 and IMC, 403.1,403.3)
BPRM2V DRAIN	SECONDARY DRAIN SYSTEM	Provide a secondary drain system for equipment that produces condensate, where damage to building components will occur as a result of an overflow from the equipment drain

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BPRM2V FNOTG	EZ FOOTNOTE G	pan or stoppage in the condensate drain piping. (IMC, 307.2.3) You have chosen to use 1.0 for your zone air distribution effectiveness. Based on your design, this can only be used based on footnote g from Table 403.3.1.2. Provide the calculations and a sequence of operations used to determine and maintain compliance to this footnote.
BPRM2V MAKUP	MAKEUP AIR	Provide and indicate on the plans how makeup air is provided for the exhaust system. (IMC 501.4 and 504.5)
BPRM2V OAIR	MINIMUM OUTSIDE AIR	Provide outside air into the HVAC system at a rate not less than that determined in accordance with IMC Section 403.
BPRM2V OASMO	SMOKING LOUNGE OUTDOOR AIR	Provide in the permit drawings a table of calculated results and match the resulting CFM of outside air to the HVAC equipment schedule for each unit. Provide details on the plans showing compliance to the outdoor air requirements of IMC Table 403.3 for the smoking lounge (70 people per 1,000 SF and 60 CFM per person). Is the existing system capable of delivering the required amount of outdoor air? Is it possible to supply the smoking lounge with minimal supply air for the heating/cooling loads and transfer the remaining amount from the adjacent space (through an undercut door) as permitted by IMC 403.2.2 by increasing the rate of exhaust within the smoking lounge?
BPRM2V REAIR	PROVIDE MEANS OF RETURN AIR	Provide and indicate on the plans the means of return air from all spaces to the main HVAC equipment. (IMC 403.1) (VUSBC 109.5)
BPRM2V REMAN	REMAINING SPACES	When utilizing the Multiple Zone Recirculating System calculation (IMC 403.3.2.3), the entire space served by the ventilation system must be included in the calculation.
BPRM2V SA/OA	UNIT SA/OA	Provide the total supply air (CFM) and the outside air (CFM) introduced into the unit. Provide the CFM values for the spaces in the scope of work and the remaining spaces (that may be outside the scope of work) served by common ventilation system. (VUSBC 109.3) Clearly indicate on mechanical plans the total supply airflow rate (cfm) of the HVAC system and also the minimum amount of outside air introduced into the system. (VUSBC, 109.3 and IMC, 403.3)
BPRM2V SIZES	DUCT, DIFFUSER, GRILL SIZES	Clearly show on mechanical plans the sizes of

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BPRM2V SMKOP	SMOKE DETECTOR OPERATION	the HVAC system components, including all sections of ductwork, diffusers, registers and grilles. (VUSBC 109.3) Indicate on the plans the sequence of operations for the required smoke detector in the air distribution system. Sequence must comply with IMC 606.4
BPRM2V SMOKE	SMOKE DETECTOR	Air distribution systems with a capacity greater than 2,000 CFM or where multiple air handling systems share a common supply or return and have a combined design capacity greater than 2,000 CFM shall be equipped with a smoke detector. The smoke detector shall be located on the return air side of the system upstream of any outside air connections, exhaust air connections, decontamination equipment, or filters. (IMC 606.2)
BPRM2X DRYEX	MANUFACTURER'S DRYER EXHAUST	Provide the manufacturer's installation instructions for the clothes dryer exhaust system. Provide details on the plans that correspond with the manufacturer's details submitted including duct size, location and termination. IMC 504.6.4.2
BPRM2X EX/OA	OUTLET/INLET AIR LOCATIONS	Indicate on the plans all exhaust outlets and air intake locations. Notes may be utilized to reinforce requirements, but shall not conflict or replace floor plan information. New and existing equipment shall be coordinated to meet several code requirements including, but not limited to, IMC 401.4, 401.6, and 501.3.1
BPRM2X EXHST	EXHST FOR CAR REPAIR, GARAGES	Provide a minimum of 0.75 cfm per square foot of floor area of exhaust directly to outside for repair shops, service stations, and public garages. The inlet of exhaust shall be located in the area of heaviest concentration of contaminants (i.e., at or about the floor line). (IMC 403.3, 502.1.1)
BPRM2X JANCL	EXHAUST FOR JANITOR'S CLOSET	Provide and show on plans an exhaust system for any enclosed room or space (i.e. Janitor's closet) which houses a mop sink. (IMC, 401.6)
BPRM2X NAIL	NAIL SALON EXHAUST	Per footnote "h" of IMC Table 403.3 (2012 edition as amended by the Virginia USBC), required exhaust must include ventilation tables or other approved systems that will capture contaminants and odors at their source. Manicure and pedicure areas are both affected by this requirement. Recirculating systems that do not exhaust the contaminants and odors to the exterior will not be approved.
BPRM2X RECIR	RECIRCULATION OF AIR PROHIBIT	Where mechanical exhaust is required for

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		<p>fumes, odors or other contaminants, recirculation of any air from such spaces is prohibited. IMC 403.2.1 and Table 403.3, including footnotes b and g. Toilet rooms must meet this requirement when supply air from an air handling system is being provided directly to the room.</p> <p>Control operation of the toilet exhaust fan must be interlocked with the air handling system or other approved method to prevent the recirculation of toilet fumes.</p> <p>Some options for compliance include (but are not limited to) interlocking of exhaust and air handling systems, time control of fan to operate during all occupied periods, or provide supply air outside of the room (rather than inside of the room) and transfer makeup air into the room for exhausted air.</p>
BPRM2X SMOKE	SMOKE EXHAUST IN PLENUMS	<p>Indicate on the plans if the space above the dropped ceiling is being used as a plenum return. If this space is being used as a plenum return, the partitions surrounding the smoking lounge must extend full height to the underside of the roof deck to prevent the migration of smoke into the plenum space and causing the smoke to be recirculated into the non-smoking areas. IMC 403.2.1</p> <p>Additionally, if the space above the ceiling is being used as a plenum return, an inline exhaust fan shall not be permitted. This fan will cause the exhaust duct to be under a positive pressure. IMC 601.4</p>
BPRM2X TOILT	EXHST FOR TOILET RMS	<p>All toilet room exhaust shall discharge to the exterior of the building. No less than 50/70 cfm per water closet or urinal is required based on the expected use per footnote e. (IMC Table 403.3)</p>
BPRM2X VAPRS	EXHST FOR FUMES/VAPORS	<p>Provide an exhaust system in areas where local sources of air-borne contaminants are generated, such as particulates, heat, odors, fumes, spray, vapors, smoke, or gases in such quantities as to be irritating or injurious to health. The exhaust shall discharge directly outside. (IMC 401.6)</p>
BPRM2X VEHEX	EXHST FROM VEHICLES	<p>In motor vehicle repair areas, where stationary vehicles are operated, an exhaust system (source capture system) that connects directly to the motor vehicle exhaust system (tailpipe) shall be provided. (IMC, 502.14)</p>