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Governor Scott Walker Secretary Dave Ross

COMMERCIAL BUILDING CODE COUNCIL MEETING
Alliant Energy Center – Exhibition Hall
Room Mendota 8, 1919 Alliant Energy Center Way, Madison, WI 53718
Contact: Dan Smith (608) 261-4463
February 15, 2016

The following agenda describes the issues that the Council plans to consider at the meeting. At the time of the meeting, items may be removed from the agenda. Please consult the resulting meeting minutes for a description of the recommendations of the Council.

AGENDA

8:30 A.M.

CALL TO ORDER – ROLL CALL

- A. Adoption of Agenda (1)**
- B. Approval of Minutes of January 5, 2016 (2)**
- C. Department Update**
- D. Significant Changes to the International Mechanical Code (IMC) Chapters 3-15 and Appendices (3-16)**
 - 1) Code Revisions
 - 2) Wisconsin Considerations
- E. Significant Changes to the International Fuel Gas Code (IFGC) Chapters 1-8 and Appendices as Time Allows (17-21)**
 - 1) Code Revisions
 - 2) Wisconsin Considerations
- F. Significant Changes to the International Energy Conservation Code (IECC) Chapters 1-6 as Time Allows (22-48)**
 - 1) Code Revisions
 - 2) Wisconsin Considerations
- G. Public Comments**
- H. Future Business**

RECESS MEETING FOR LUNCH

- I. 1:00 P.M. – Q & A with UW Commercial Building Code Refresher Attendees**
- J. Adjournment**

**COMMERCIAL BUILDING CODE COUNCIL
MEETING MINUTES
January 5, 2016**

PRESENT: Kevin Bierce, Hunter Bohne, Steven Howard, Steven Klessig (*arrived at 9:11 a.m.*), Samuel Lawrence, Michael Mamayek, Irina Ragozin, Corey Rockweiler, Peter Scheuerman

EXCUSED: David Enigl

STAFF: Dan Smith, Rules Coordinator; Jason Hansen, Building Plan Reviewer; Robin Zentner, Bureau of Field Services Bureau Director; Randy Dahmen, Building Plan Reviewer; and Nifty Lynn Dio, Bureau Assistant

CALL TO ORDER

Michael Mamayek, Chair, called the meeting to order at 9:02 a.m. A quorum of eight (8) members was confirmed.

ADOPTION OF AGENDA

MOTION: Samuel Lawrence moved, seconded by Irina Ragozin, to adopt the agenda as published. Motion carried unanimously.

APPROVAL OF MINUTES

MOTION: Steven Howard moved, seconded by Kevin Bierce, to approve the minutes of December 1, 2015 as published. Motion carried unanimously.

(Peter Scheuerman excused himself at 1:00 p.m.)

(Steven Klessig excused himself at 1:59 p.m.)

(Steven Klessig rejoined the meeting via phone at 2:08 p.m.)

ADJOURNMENT

MOTION: Corey Rockweiler moved, seconded by Hunter Bohne, to adjourn the meeting. Motion carried unanimously.

The meeting adjourned at 3:02 p.m.

Summary of 2012 and 2015 IMC Changes^a Significant^b in Wisconsin^c and Comparison With Wisconsin’s Requirements^d

IMC Code Sections	Description		Comments	
	SPS 364 Section Topic	2012 IMC Changes		2015 IMC Changes
		DIS Recommendations		
CHAPTER 1 - SCOPE AND ADMINISTRATION				
	364	<p>2006 IMC was amended by Comm 64.0101, which limited use of IMC Ch. 1. “Except for IMC section 102.8, the requirements in IMC chapter 1 are not included as part of this chapter”. For whatever reason, that amendment was not carried over to the 2009 IMC/SPS Chapter 364.</p> <p>SPS 362.0100 Administration. The requirements in IBC chapter 1 are not included as part of this code.</p> <p>SPS 363.0101 Administration and enforcement. Except for IECC section 101.5.2, the requirements in IECC sections 101 and 103 to 109 are not included as part of this chapter.</p> <p>SPS 365.0101 Administration. Except for IFGC section 102.8, the requirements in IFGC chapter 1 are not included as part of this chapter.</p> <p>SPS 366.0101 Administration. Except for IEBC section 102.4, substitute the following wording for the requirements in IEBC chapter 1:</p>	9	
102.3	Maintenance	ASHRAE/ACCA/ANSI Standard 180 is now specified for the inspection for maintenance of an HVAC system.		
CHAPTER 2 - DEFINITIONS				
202	Environmental Air	The definition of <i>environmental air</i> has been expanded through the addition of parking garage exhaust.		
	364.0202		All definitions should be moved to 364.0202 as was done with SPS 362	
	364.0202	SPS Table 364.0403 references "living areas" under the "heading dwellings, single and multiple", but there is no definition of a "living area". Define under IMC 202, what a "living area" is. An interpretation is inappropriate. Add definition similar to "living area" Those areas within a dwelling unit involving living rooms, bedrooms, dens and/or family rooms.”	21	

IMC Code Sections	SPS 364	2012 IMC Changes	2015 IMC Changes	Comments
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CHAPTER 3 - GENERAL REGULATIONS				
304.11	Fall-Arresting Restraint Systems		The exception allows for fall-arresting restraint systems to be employed instead of guards on roofs.	
306.1	Access		More than just appliances are now required to have access for inspection, service, replacement and repair.	
	SPS 0306	Amendment associated with installation of guards, work platform and access states "...provisions do not apply when the installation consists of fans only." Revise so as to remove amendment. This amendment allows kitchen upblast fans to not install guards, work platforms and have access, when reality, all these items should be in place for the safety of those that perform routine maintenance on these type of systems. Confusion occurs in that access is required via IMC 306.5, but IMC 306.5.1, as amended, does not which seems foolish on a 6:12 roof located more than 16 ft above grade		108
306.5	Equipment and Appliances on Roofs or Elevated Structures	It has been clarified that permanent access is required to equipment and appliances on a roof or elevated structure higher than 16 feet above grade, and required clearances are now provided to assure access to ladders required for access to roofs or elevated structures.		
307.2.5	Condensate Drain Line Maintenance		The code requires that condensate drains be configured or equipped to allow maintenance of the drain without the drain pipe or tubing being cut.	
307.3	Condensate Pumps in Uninhabitable Spaces		Condensate pumps located in uninhabitable spaces and used with condensing fuel-fired appliances and cooling equipment must be connected to the appliance or equipment served by the pump to prevent water damage in the event of pump failure.	
308.5	Labeled Assemblies	Allowable clearance reductions must now be based on listed and labeled reduced-clearance protective assemblies in accordance with UL 1618.		
309	364.0309	IMC 309 references Minimum Indoor Temperature, while SPS 364.0309 references Minimum Inside Temperature. SPS 364.0309 should modify its wording from Inside to Indoor so as to		

IMC Code Sections	SPS 364	2012 IMC Changes	2015 IMC Changes	Comments
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		compliment the written code language. Modify WI amendment to compliment wording of the IMC.		12
309	364.0309	Spot heating is not recognized by code. Add amendment SPS 364.0309 Spot Heating. Spot heating may be used to heat individual fixed work stations in industrial buildings in lieu of heating the entire space as specified IMC 309, provided the inside design temperature at the fixed work station is at least 60° F. Work areas such as saw mills where doors open often, make maintaining a constant temperature difficult & expensive.		5
CHAPTER 4 - VENTILATION				
401.2, 407.1 Table 403.3.1.1	Ventilation Required		Occupancies including hospitals, nursing homes, detoxification facilities and ambulatory care facilities must be ventilated in accordance with a new standard, ASHRAE 170.	
401.3.3.2.1		This section will basically eliminate the use of natural ventilation in dwelling units due to the 5 air change criteria. Additionally, a 2 bedroom, 1,200 sf apt would require 58.5 o.a vs current 3 * 7.5 cfm= 22.5 o.a. Additional outside air requires larger HVAC equipment, and more outdoor air penetrations Request committee to review. The challenge is to balance outside air and associated indoor air quality vs energy conservation and building sealing. Committee requested to discuss if code as written to be recommended, or if use of natural ventilation to be maintained, with either existing 7.5 cfm oa/person or new code equation		95
401.4	Intake Opening Location	The minimum clearance between an air intake opening and any public way is now measured from the opening to the lot line, not to the centerline of the public way.		
401.4 Items 2 & 3	SPS 364.0401(4)(a & b)	364.0401(4)(b) does not include language, "...except as specified in Item 3 or Section 501.2.1" as is associated with IMC 401.4 Item 2 which it replaces, thus the application of IMC 401.4 Item 3 is negated since 364.0401(4)(a) states "air intakes ...shall comply with ALL of the following." If the amendment is maintained, 364.0401(4)(b) shall add the following wording so that the requirement reads, "Intake openings shall be located not less than 10 ft. horizontally from any hazardous or noxious containment source except as specified in Item 3 or Section 501.2.1."		62
	SPS Tables 364.0402 and 364.0403	The code does not address how aircraft hangars are to be ventilated. Division has typically allowed the use of natural ventilation for single aircraft hangars, with NO immediately adjacent occupancies (pilots lounge, office, sleeping area, etc.). Otherwise, the space would need to be exhausted similar to an "enclosed parking garage". See Division Question & Answer on this matter. Add occupancy to tables SPS 364.0402 & 364.0403, and address requirement of 4%		

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		openings & min. 0.5 cfm/sf exhaust respectively.		42
	SPS 364.0402	<p>The current code lists lecture hall < 100 under SPS Table 364.0402 as being allowed to use natural ventilation. The same table is silent when addressing classrooms. In review of the 2006 IMC as amended, COMM Table 64.0403 listed classrooms as not being allowed to use natural ventilation. It also listed places of worship, entertainment, and recreation which accommodate less than 100 persons as being allowed natural ventilation.</p> <p>It was never the intent to change the application of the code when the 2009 ICC codes were adopted. Jim Smith's intent was to better reflect that the natural ventilation requirements of the code should be found under the natural ventilation section, IMC 402, thus the reason SPS 364.0402 was created to complement that section of the IMC. Perhaps footnote lecture hall and state classrooms are not allowed to use natural ventilation.</p>		82
403.2.1 Table 403.3.1.1	Recirculation of Air		The revisions to Section 403.2.1 and notes b and g of Table 403.3.1.1 clarify that recirculation of air within a space is permitted.	
403	SPS Table 364.0403	The previous code under Comm 64.05 for seasonal occupancies "dining & recreational areas", "Club Houses", & "Drive-ins" were recognized 15 sf/person. There was no modification made for the new format of the IMC which involves the # of people per 1,000 sf. Change 15 to 70 in third column of Table 364.0403. Revise SPS 364.0403 for "dining & recreational areas" to 70.		20
403	SPS Table 364.0403	Table has "Elevator cars" listed as an "Occupancy Classification" along with a reference to a footnote "m". The table does not contain any explanation of what footnote "m" is to address. Under the previous 2006 code, Comm Table 364.0403 footnote "m" stated, "Refer to the IMC Chapter 5 for exhaust requirements". IMC Chapter 5 has no specific exhaust requirement for elevator cars. Replace language to reflect IMC Table 403.3 entry which requires Minimum Exhaust Airflow Rate of 1.0 cfm/sf from elevator car.		27
403	SPS Table 364.0403	As adopted and printed for use by the public and the Dept. for enforcement purposes, there is no footnote "c" listed for "automotive service and repair garages" (although this was in error based on review of past codes). Because of this, transfer of air from a automotive service/repair area cannot be prohibited per SPS 364.0403(4). (Note: This could be a dangerous situation depending on circumstances). Add footnote "c" to Table 364.0403 Occupancy "Automatic service and repair garages"		29
403	SPS Table 364.0403	Table lists "automotive service and repair garages" but is not clear if this is for gasoline/diesel fueled or CNG fueled vehicles. IMC 502.16 addresses CNG. Add language "Automotive service & repair garages with gasoline or diesel fueled vehicle engines."		30
403	SPS Table 364.0403	Occupancies: Correctional facilities, Sleeping rooms, Food and beverage service, Kitchens (cooking), Private dwellings, single and multiple, "kitchens", "Toilet rooms and bathrooms" Utility and public spaces "Toilet rooms" footnote d and remove the comment "Outdoor air shall		

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		be provided at the rate of 1.0 cfm/net sq. ft. floor area." The should not be part of the code since clearly the # of toilet fixtures for the toilet room dictates the amount of air transfer or make-up air required to be directed to the space.		63
403	SPS Table 364.0403	Due to changes in typical vehicle fuel, current language "Automotive service and repair garage" is inadequate. CNG per IMC 502.16 has different requirements. Add language to state, "Automotive service and repair garage for gasoline, diesel & LP Fueled Vehicles"		72
403	SPS Table 364.0403	The language under SPS Table 364.0403, Hotels, motels, resorts and dorms, references "bathrooms" but it is unclear as if this addresses only those bathrooms located in a guest rooms within the bldg or ALL toilet rooms in the bldg. Modify the language under SPS Table 364.0403, Hotels, motels, resorts and dorms, from "bathrooms" to "bathrooms for guest rooms" so as to identify that public toilet rooms must still meet the 75 cfm/fixture		81
403.3	Outdoor Air and Local Exhaust Airflow Rates		The new text introduces the basic requirements of ASHRAE 62.2 related to mechanical ventilation for Group R-2, R-3 and R-4 buildings three stories or less in height.	
Table 403.3	Minimum Ventilation Rates for Nail Salons	Nail stations in nail salons must now each be provided with a source capture system.		
Table 403.3.1.1	Manicure and Pedicure Station Exhaust Rate		The revised note h to Table 403.3.1.1 recognizes new Section 502.20 for the design of manicure and pedicure station exhaust systems and also specifies the applicability to both. Note h addresses the relationship between the source capture system exhaust-flow rate and the exhaust-flow rate specified within the table for nail salons.	
403.3.2.1 Table 403.3.1.1		The 2 referenced sections have requirements for private dwelling units & dwelling units. Which is to be used? Dept. to define which is to be applicable for code use		105
404		Review IMC 404 to reflect new wording vs existing options. New language does not allow the use of occupancy sensors as a means to operate exhaust/make-up air system		96
404.1	Enclosed Parking Garages	The mechanical ventilation systems required in enclosed parking garages are now permitted to be operated automatically by carbon monoxide detectors.		
404.1	Intermittent Operation of Mechanical		For enclosed parking garages, the ventilation system must operate continuously or must be	

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	Ventilation Systems for Enclosed Parking Garages		automatically controlled for intermittent operation utilizing both carbon monoxide and nitrogen dioxide detectors. The option to detect vehicle operation or occupant presence has been deleted.	
CHAPTER 5 - EXHAUST SYSTEMS				
501.2, 506.4	Independent Exhaust System Required	Those locations where an independent exhaust system is required are now established in a single code provision.		
501.2.2		This section does not address any minimum height for the location of an exhaust outlet from surfaces where snow and ice accumulate. SPS 364.0401(4)(c) has similar wording for outside air intakes. The broad language, "Openings shall be protected against local weather conditions" is undefinitive, and provides neither designers nor enforcement officials with baseline prescriptive safety requirements. Amend section to state, "The bottom of an exhaust outlet shall be located at least 12 inches vertically from the adjoining grade level and bottom of an areaway. Additional clearance may be required so as to address local weather conditions, and surrounding land contour."		89
501.3	Mechanical Exhaust System Discharge		The adjective "public" was added to "nuisance" to make this requirement more enforceable. The new exception correlates with Section 505.1, exception 1.	
502.2	SPS 364.0403	Under the Occupancy Classification "Beauty salons" footnote H, there is reference to exhaust requirements as associated with manicures & pedicures. Due changes in the 2015 IMC, these requirements are more thoroughly addressed Modify SPS Tbl 364.0403 "Beauty salons" footnote H to state, "Exhaust requirements for manicure & pedicure stations shall be addressed per IMC 502.20."		111
502.14		Exception 3 is not applicable due to the WI amendments contained in SPS Table 364.0403 for "Automotive service and repair garages." Eliminate Exception 3.		39
502.14		The code is not clear if the exhausts associated w/ the source capture system is included as part of the min. 0.5 cfm/sf exhausts required by SPS Table 364.0403, or in addition to. Add language clarifying that the source capture exhausts are in addition to the minimum exhausts required by SPS Table 364.0403.		40
502.14		The code is not clear as to the acceptable use of a hoses or tubes used to extend vehicle tailpipes. They are to be of suitable material to be in contact with hot tailpipes and vehicle emissions, and their layout, including the size and length, needs to be effective in conveying the contaminants to the exterior. See Division Question & Answer on this subject. Add language,		

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		complimenting current Question and Answer language issued by the Division, that recognizes that hoses or tubes, as qualified, may be used to extend vehicle tailpipes, so as to exhaust contaminants to the exterior of the building.		41
502.16		This section has been recently modified by the Dept. on 9/22/15 so as to recognize portions of the IFC Add to the proposed 2015 printed rules, the recently implemented minor repair garage rules as included in the IFC.		90
502.20	Manicure and Pedicure Station Exhaust System		New text specifically covers manicure and pedicure stations and states exhaust requirements in addition to those in Table 403.3.1.1. In previous editions of the code, pedicure stations were not specifically called out, as the text in Table 403.3.1.1 referred only to nail salons generically.	
504.5		Dryer exhaust duct power ventilators are now recognized in the code. It is not clear if the clothes dryer manufacturers must recognize their use via the installation instructions, or if they can eliminate their use via their installation instructions. It is assumed that installation is acceptable if there is no eliminating language. Add language or note to IMC 504.5 which states use of such appliances is acceptable unless there is language in the installation instructions of the clothes dryer manufacturer restricting such use.		107
504.5 504.8.4.3	Dryer Exhaust Duct Power Ventilators		New text recognizes the use of dryer exhaust duct power ventilators (DEDPVs) for installations that exceed the allowable exhaust duct length for clothes dryers.	
504.8.2	Dryer Exhaust Duct Installation		Instead of prohibiting all duct fasteners such as screws and rivets, the code now limits the penetration of fasteners where installed.	
505.1	Domestic Kitchen Exhaust Systems	Domestic kitchen exhaust ducts are now required to be independent of all other exhaust systems.		
505.1 505.4	Domestic Range Hoods		The scope of domestic kitchen hoods coverage has been expanded to beyond dwellings units. Domestic hoods are mandated in new Section 505.4.	
505.3	Domestic Kitchen		New text regulates the design and construction	

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	Exhaust Systems in Multistory Buildings		of exhaust shafts that serve domestic kitchen exhaust systems in multistory buildings.	
506.3.7.1	Grease Duct Reservoirs	Criteria are now provided for the construction of a grease reservoir in a grease duct system where the reservoir is not a manufactured product.	A grease duct reservoir must now be the full width of the duct in all cases, and the reservoir must be provided with a drain opening.	
506.3.8	Grease Duct Cleanouts and Openings	In addition to the reformatting of previous criteria for grease duct cleanouts, gasket and sealing materials on grease duct cleanout doors must now be rated at a minimum of 1500°F.	The cleanout spacing provisions have been added to be consistent with Section 506.3.9 for horizontal ducts.	
506.3.9	Grease Duct Horizontal Cleanouts	Criteria for cleanouts serving horizontal grease ducts have been rearranged for ease of use and clarification, and several technical provisions have been added or modified.		
506.3.10	Underground Grease Duct Installation	Grease ducts installed in underground locations are now regulated based upon a number of new provisions.		
506.3.11	Grease Duct Enclosures		The code specifically prohibits the installation of fire and smoke dampers in grease ducts.	
506.3.11.2	Field-Applied Grease Duct Enclosure	Field-applied grease duct enclosure systems are now specifically prohibited from being used to reduce clearance to combustibles.		
506.5.1.2	In-Line Fan Location in Exhaust Ducts Serving Commercial Kitchen Hoods		New text addresses the enclosure requirements for in-line exhaust fans located in kitchen hood exhaust ducts, in effect treating them the same as ducts.	
506.5.3	Hinged Up-Blast Fans for Type I Hoods		The code now requires that hinged exhaust fans be provided with a means to limit the travel of the fan assembly to prevent injury to personnel and damage to the building and fan.	
507.1	Type I Hood Installation		A requirement has been added for Type I hood installations to comply with all aspects of a Type I exhaust system, whether the Type I hood is required by the code or installed by choice.	

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507.1.1	Commercial Kitchen Exhaust Hood System Operation		The requirement for automatic activation of the exhaust system has been revised to provide the intended performance requirements and to clarify that an interlock arrangement is an alternative to automatic hood operation.	
507.1.1.1	Heat Sensors for Multiple Commercial Kitchen Hoods		New text prohibits the use of a single sensor mounted in the common ductwork for commercial kitchen hood systems having multiple hoods manifolded together.	
507.2	Type I or Type II Hood Required	A Type I or Type II commercial kitchen hood is not required for appliances with listed integral downdraft exhaust systems.		
507.2.1	Type I Hoods	Type I hoods no longer are required to be installed where complying electric cooking appliances are being used.		
507.2.1.1	Operation of Type I Hoods	A method is now required to keep the pilot burner on a gas cooking appliance from being extinguished when the kitchen exhaust fan interlock shuts off appliances.		
507.2.1.2	Exhaust Flow Rate Label for Type I Hoods	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.		
507.2.2	SPS 364.0507	The WI amendment does not apply a minimum exhaust rate to dishwasher hoods, whereas IMC 507.2.2 does require a minimum exhaust rate for all other Type II commercial kitchen hood uses Remove WI amendment since with it, there is no baseline reference for minimum exhausts required for dishwashers.		84
507.2.2	Type II Hoods	A Type II hood is now required to be installed above all appliances that produce products of combustion but do not produce grease or smoke. An exact exhaust rate is specified for areas where a cooking appliance is being used but a Type II hood is not required.		

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507.2.8	Type I Hood Grease Filters		The code now recognizes the use of disposable grease filters.	
508.1.2	Air Balance for Commercial Kitchen Ventilation Systems		This new section requires that an air balance schedule be submitted with the design plans for commercial kitchen ventilation systems.	
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.		
510.4 510.5	Hazardous Exhaust Systems		Text in previous editions of the code that alluded to the recirculation of hazardous exhaust has been deleted. The previous exception was too broad in application, so the entire section has been formatted to clarify the scope of the exception. Previous item 7 has been revised to prescribe the method for maintaining continuous negative pressure.	
510.7	Fire Suppression Required for Hazardous Exhaust Ducts	Automatic fire suppression systems are no longer required in the exhaust ducts in semiconductor fabrication facilities.		
510.7.1.1	Hazardous Exhaust Duct Penetrations of Shafts		A pointer to the <i>International Building Code</i> (IBC) provisions for hazardous exhaust duct penetrations of shafts has been added.	
514.2	Energy Recovery Ventilation Systems		Energy recovery ventilation (ERV) systems of the coil-type heat exchanger (run-around coils) are no longer limited in their application.	
CHAPTER 6 - DUCT SYSTEMS				
601.4	Contamination Prevention in Plenums	Chimneys and vents are now permitted to pass through a plenum where in compliance with one of three new allowances.		
601.5	Return Air Openings		The often misunderstood provisions in previous editions of the code for return air have been relocated from a section specific to forced-air / warm-air furnaces in Chapter 9 to a	

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			more generic section in Chapter 6. The provisions have been clarified and streamlined to capture the desired intent.	
602.1	Plenums Limited to One Fire Area		The revision clarifies that a plenum in a fire area cannot be connected to a plenum in an adjoining fire area by means of transfer ducts or openings, regardless of the presence of fire dampers.	
602.2	Plenum Construction		Depending on the construction type of the building, plenums are no longer allowed to be bounded by the building materials that create the space being used as a plenum.	
602.2		The Division has always allowed wood joist & stud construction for use as a wood plenum. The new 25/50 rule could be read to imply that such construction is no longer valid. Such use and design is common in residential & light commercial construction involving type III & V construction Add language "The use of wood framed stud and joist spaces as plenums shall be allowed for type III & V construction."		93
602.2.1	Materials within Plenums	It has been clarified that 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.		
602.2.1.5	Discrete Plumbing and Mechanical Products in Plenums		The code now addresses those products that in previous editions of the code did not fall under the category of piping, wiring, ductwork, tubing, insulation and other continuous large surface area materials installed in plenums. A definition has been added to describe what is meant by discrete products.	
Table 603.4	Duct Construction Minimum Sheet Metal Thickness for Single Dwelling Units		The table for duct gages for dwelling units has been replaced with thicknesses consistent with the SMACNA sheet metal construction standard.	
603.7	Rigid Duct Penetrations	In relationship to the required garage/dwelling separation, only those ducts that penetrate a		

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		wall or ceiling between the dwelling and the adjacent private garage need comply with Section 603.7.		
603.9	Duct Joints, Seams, and Connections	Unlisted duct tape is no longer permitted as a sealant on nonmetallic ducts.		
603.9	Duct Joints, Seams and Connections		Duct sealant tapes used on sheet-metal ducts must be listed to UL 181B as is required for sealing tapes and mastics for flexible ducts. Snap-lock and button-lock seams are no longer exempt from the sealing requirements.	
603.17, 202	Air Dispersion Systems	Air dispersion systems as defined in Section 202 and recognized in UL 2518 are now permitted to be installed.		
CHAPTER 7 - COMBUSTION AIR				
701.2	Dampened Openings		Where dampers are installed on combustion air openings, the code now requires an interlock with the appliance to prevent operation of the appliance when the damper is closed. Manual dampers are prohibited on combustion air openings.	
701.2 304.10 (IFGC)		Referenced sections require motorized dampers to be used on outside air intakes. Manual dampers are not allowed. Barometric dampers are considered by industry to be automatic. Include WI amendment to state that barometric dampers are not recognized for use in a combustion air intake duct.		109
CHAPTER 8 - CHIMNEYS AND VENTS				
802.9	Door Clearance to Vent Terminals		To prevent damage to the vent, door or surrounding materials, doors are not permitted to swing within 12 inches of an appliance vent terminal.	
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.		
CHAPTER 9 - SPECIFIC APPLIANCES, FIREPLACES AND SOLID FUEL-BURNING EQUIPMENT				
Chapter 9		DNR has rules limiting waste oil burners to 500,000 btu/hr per unit. Exceeding that size		

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		requires that special venting be addressed. Add wording or note within the mechanical code referencing the DNR restrictions. Statute SUBCH G of CH. NR 679 http://dnr.wi.gov/files/pdf/pubs/wa/wa233.pdf .		19
901.4	Fireplace Accessories	Fireplace accessories must now comply with UL 907, which has been added to Chapter 15.		
903.4	Gasketed Fireplace Doors		Gasketed (sealed) doors are prohibited on factory-built fireplaces except where the fireplaces are listed for use with such doors.	
928	Evaporative cooling equipment	Requirements for the installation of evaporative coolers have been introduced into the IMC in the new Section 928.		
CHAPTER 10 - BOILERS, WATER HEATERS AND PRESSURE VESSELS				
CHAPTER 11 - REFRIGERATION				
1101.10	Locking Access Port Caps	Locking caps are no longer required on refrigerant access ports if the refrigeration equipment is located in a secured location.		
1102.3	Refrigerant Access Port Protection		The requirement for making refrigerant access ports tamper resistant has been expanded to apply to existing systems when service to such systems involves adding or removing refrigerant.	
1105.6, 1105.6.3	Machinery Room Ventilation	The minimum ventilation rates in an ammonia machinery room must now be in accordance with IAR2.		
1106.4	Flammable Refrigerants	The ventilation requirements of Section 1106.3 for ammonia machinery rooms are now mandatory in order to be exempted from the Class 1, Division 2 hazardous location requirements of NFPA 70.		
CHAPTER 12 - HYDRONIC PIPING				
1208		Testing is not viable for certain hydronic piping systems. Add: "or as directed by the manufacturer and their installation instructions." Permit appropriate pressure testing of piping as identified by manufacturer without overpressurizing the piping.		6

IMC Code Sections	SPS 364	2012 IMC Changes	2015 IMC Changes	Comments
	Topic	DIS Recommendations		

CHAPTER 13 - FUEL OIL PIPING AND STORAGE				
CHAPTER 14 - SOLAR SYSTEMS				
CHAPTER 15 - REFERENCED STANDARDS				
	SPS 364.1500	“SPS 364 currently adopts: FGI Guidelines for Design and Construction of Health Care Facilities, 2010 The code should reference: FGI Guidelines for Design and Construction of Hospitals and Outpatient Facilities, 2014 and FGI Guidelines for Design and Construction of Residential Health, Care, and Support Facilities, 2014” - David Soens at DHS/DQA		
APPENDICES				
Appendix A				
Appendix B				

- a. Published sources:
 - 2009 *International Mechanical Code*[®] – International Code Council[®] (ICC)
 - 2012 *International Mechanical Code* – International Code Council
 - 2015 *International Mechanical Code* – International Code Council
 - Significant Changes to the International Plumbing Code, International Mechanical Code and International Fuel Gas Code, 2012 Edition* – International Code Council
 - Significant Changes to the International Plumbing Code, International Mechanical Code and International Fuel Gas Code, 2015 Edition* – International Code Council
- b. Various IMC code section number references in SPS 364 will be updated where code section numbering in the IMC has changed, but these modifications are not referenced here.
- c. Changes that are not addressed because they do not apply in Wisconsin include the changes for all of chapter 1 Administration.
- d. Chapter SPS 361 & 364 of the *Wisconsin Administrative Code* (Register, December 2011)

Prepared by Dan Smith
File Reference: SPS 364/Summary 2012 & 2015 IMC changes

Summary of 2012 and 2015 IFGC Changes^a Significant^b in Wisconsin^c and Comparison With Wisconsin’s Requirements^d

IFGC Code Sections	Description			Comments
	SPS 365 Section	2012 IFGC Changes	2015 IFGC Changes	
	Topic	DIS Recommendations		
CHAPTER 1 - SCOPE AND ADMINISTRATION				
CHAPTER 2 - DEFINITIONS				
202, 401.9, 401.10, 404.1	Identification, Testing and Certification	Each section of pipe and each fitting utilized in a gas system requires the identification of the manufacturer.		
CHAPTER 3 - GENERAL REGULATIONS				
304.1	Combustion Air for Appliances with Power Burners		This change clarifies that the prescriptive combustion air provisions of Section 304 do not apply to appliances having power burners.	
304.10 701.2 (IMC)		Referenced sections require motorized dampers to be used on outside air intakes. Manual dampers are not allowed. Barometric dampers are considered by industry to be automatic. Include WI amendment to state that barometric dampers are not recognized for use in a combustion air intake duct.		109
307.6	Condensate Pumps		Condensate pumps located in uninhabitable spaces and used with condensing fuel-fired appliances and cooling equipment must be connected to the appliance or equipment served by the pump to prevent water damage in the event of pump failure.	
308.1	Clearance to Combustible Materials	It has been clarified that gypsum board is to be considered a combustible material for the purpose of required clearances, including those provisions of Section 308 addressing reductions in required clearances.		

IFGC Code Sections	SPS 365	2012 IFGC Changes	2015 IFGC Changes	Comments
	Topic	DIS Recommendations		

310.1.1	Electrical Bonding of Corrugated Stainless Steel Tubing		Text has been added to address the allowable length of the bonding jumper wire and the methods of making the bonding connections.	
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CHAPTER 4 - GAS PIPING INSTALLATIONS

	SPS 365.0400	The Division would prefer to retain the most recent version of NFPA 54 so as to complement its use already adopted in SPS chapters 323 & 340 Modify code to address adoption of NFPA 54 to updated code.		94
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402.2	Maximum Gas Demand for Pipe Sizing		Table 402.2 and the reference to it have been deleted as a result of the code requiring the actual maximum input rating of the appliances to be known and used for sizing purposes.	
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403.6	Plastic Pipe, Tubing and Fittings		PVC and CPVC pipe are expressly prohibited materials for supplying fuel gas.	
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403.10.4	Drilled and Tapped Metallic Pipe Fittings		The code now expressly prohibits the practice of drilling and tapping pipe fittings in the field except where performed in accordance with five criteria that strictly limit such practice.	
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404.2	CSST Piping Systems	CSST piping systems shall be installed in accordance with their listing and the manufacturer's installation instructions.		
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404.5	Fittings in Concealed Locations		This section retains its basic intent, while being completely reorganized to clarify the correct application. Threaded elbows, tees and couplings are now specifically approved for concealed locations as the code always intended. The code now provides the applicable referenced standards for fittings that are listed for concealed locations.	
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404.7	Protection of Concealed Piping against Physical Damage		The section on protection of piping has been completely rewritten to address more than just bored holes and notches in structural members. It now addresses piping parallel to framing members and piping within framing members. The new text requires that the protection extend well beyond the edge of members that	
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IFGC Code Sections	SPS 365	2012 IFGC Changes	2015 IFGC Changes	Comments
	Topic	DIS Recommendations		

			are bored or notched.	
404.18	Prohibited Devices	Excess flow valves and similar devices are now permitted to be placed in gas piping systems that have been sized to accommodate the pressure drop.		
404.18	Pipe Cleaning		The code now specifically prohibits the practice of using fuel gas as a medium for flushing foreign matter and debris from fuel-supply piping.	
408.4	Sediment Traps	An illustration of a sediment trap is now included within the IFGC in order to clarify the intent of the provisions.		
410.2	Medium-Pressure Regulators		Line regulators installed in rigid piping must have a union installed to allow removal of the regulator.	
410.4	Excess Flow Valves	An excess flow valve must now be listed, sized, and installed in accordance with the manufacturer's instructions.		
410.5 202	Flashback Arrestor Check Valve	A combination flashback arrestor and backflow check valve is now required on any fuel gas system used with oxygen in any hot work operation.		
411.1	Connecting Portable Outdoor Appliances		Where portable gas appliances are used outdoors, such as gas grills and patio heaters, the options for connecting to the gas distribution system are practically limited to gas hoses designed for the purpose. Such hoses must comply with ANSI Z21.54.	
411.1.1	Connectors for Commercial Cooking Appliances		Specific installation requirements have been added for the safe installation of ANSI Z21.69 connectors for commercial cooking appliances. The options to connect the cooking appliance with semirigid tubing or rigid pipe have been removed.	

CHAPTER 5 - CHIMNEYS AND VENTS

IFGC Code Sections	SPS 365	2012 IFGC Changes	2015 IFGC Changes	Comments
	Topic	DIS Recommendations		
502.7.1	Door Clearance to Vent Terminals		Coverage has been added to address the condition where a door could impact or come too close to an appliance vent terminal.	
503.4.1	Plastic Piping for Appliance Vents		The approval of plastic pipe for venting appliances is no longer a responsibility of the code official; instead, that responsibility rests with the appliance manufacturer and the appliance listing agency.	
503.6.9.3	Sizing of Plastic Pipe Vents		The code previously spoke only of vents that are defined as listed and labeled factory-made products. The code is no longer silent on the sizing of vents that do not fall under the definition of "vent."	
503.8	Venting System Termination Location		Text has been added to address the location of sidewall vent terminals with respect to adjoining buildings. Previous editions of the code were silent on this subject, and the appliance manufacturer's instructions are typically silent as well.	
CHAPTER 6 - SPECIFIC APPLIANCES				
614.5	Dryer Exhaust Duct Power Ventilators		New text recognizes the use of dryer exhaust duct power ventilators (DEDPVs) for installations that exceed the allowable exhaust duct length for clothes dryers.	
618.4	Prohibited Sources	Return air may be taken from a garage provided with a dedicated forced-air system.		
621	SPS 365.0621	Delete the word "portable", and replace with "room heater", ventless fire places are not portable and should not be allowed....language shall complement existing SPS 364.0801.		
623.2	Prohibited Location of Commercial Cooking Appliances		The code has been clarified so that it would not inadvertently prohibit the installation of cooking appliances that are listed as both commercial and domestic appliances.	
CHAPTER 7 - GASEOUS HYDROGEN SYSTEMS				

IFGC Code Sections	SPS 365	2012 IFGC Changes	2015 IFGC Changes	Comments
	Topic	DIS Recommendations		

CHAPTER 8 - REFERENCED STANDARDS				
APPENDICES				
Appendix A				
Appendix B				
Appendix C				
Appendix D				

a. Published sources:

2009 *International Fuel Gas Code*[®] – International Code Council[®] (ICC)

2012 *International Fuel Gas Code* – International Code Council

2015 *International Fuel Gas Code* – International Code Council

Significant Changes to the International Plumbing Code, International Mechanical Code and International Fuel Gas Code, 2012 Edition – International Code Council

Significant Changes to the International Plumbing Code, International Mechanical Code and International Fuel Gas Code, 2015 Edition – International Code Council

b. Various ICC code section number references in SPS 365 will be updated where code section numbering has changed, but these modifications are not referenced here.

c. Changes that are not addressed because they do not apply in Wisconsin include the changes for all of chapter 1 Administration.

d. Chapter SPS 361 & 365 of the *Wisconsin Administrative Code* (Register, December 2011)

Prepared by Dan Smith

File Reference: *SPS 365/Summary 2012 & 2015 IFGC changes*

Summary of 2012 and 2015 IECC Changes^a Significant^b in Wisconsin^c and Comparison With Wisconsin’s Requirements^d

IECC / ASHRAE 90.1 Code Sections	Description		Comments
	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes <i>DIS Recommendations / Editorial Clarifications</i>	
P A R T 1 - IECC			
CHAPTER 1 - SCOPE AND ADMINISTRATION			
2012 IECC Table of Contents	SPS 363 numbering is based on the older page numbering of the IECC; <i>the new chapter designations with the C or R prefix will need to be incorporated into SPS 363 to maintain a connection to the appropriate provisions in the IECC</i>	The 2012 IECC was completely reorganized and renumbered for an easier and more user friendly format; the code has been broken into two separate parts for Commercial Energy Efficiency and Residential Commercial Efficiency	Residential chapters apply to multi-family dwellings
	Renumber: SPS 363.001	SPS 363.0010	
	Renumber: SPS 363.002	SPS 363.0020	
	Amend: SPS 363.002	Application. (1) MIXED OCCUPANCY. Where a building includes both residential and commercial occupancies, each occupancy shall be separately considered and meet the applicable provisions of IECC chapter 4 <u>Residential Provisions</u> for residential or IECC chapter 5 <u>Commercial Provisions</u> for commercial.	
C101.2 R101.2	SPS 363.0101 states “Except for IECC 101.5.2, the requirements in IECC sections 101 and 103 to 109 are not included as part of this chapter”; additional administrative requirements regarding commissioning occur elsewhere in the 2015 edition of the IECC; <i>the SPS 363.0101 statement</i>	Modifies the scope of the code to include the building site and associated systems and equipment; clarifies that the IECC is not limited to a structure shell and its contents	Should the expanded scope of IECC be included in SPS 363.001?

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
	<i>may need to address these changes</i>			
	Amend: SPS 363.0100 Note:	Note: The sections in this chapter are generally numbered to correspond to the numbering used in the IECC, <u>with a 0 to the right of the decimal point referring to the Commercial Provisions and a 5 to the right of the decimal point referring to the Residential Provisions of the IECC</u> , i.e., s. SPS 363.0101 refers to section IECC 404 <u>C101</u> and s. SPS 363.5101 refers to section <u>IECC R101</u> .		
	Amend: SPS 363.0101	Except for IECC 101.5.2, the The requirements in IECC sections 401 and 403 to 409 <u>C101, and C103 to C109</u> are not included as part of this chapter.		The low-energy building exemption has been moved to C402.1.1 and R402.1, Exception
	Create SPS 363.5101	The requirements in IECC sections R101, and R103 to R109 are not included as part of this chapter.		
C101.3 R101.3		Modifies the intent statement from “effective use of energy” to “effective use and conservation over the useful life of each building”	Removes the word “effective” from the intent statement	
CHAPTER 2 - DEFINITIONS				
Section 202 New		Definitions which are new to the 2012 IECC and their applicable sections are: C Building Commissioning C Building Entrance C,R Building Site C Coefficient of Performance (COP) – Cooling C Coefficient of Performance (COP) – Heating C,R Continuous Air Barrier C,R Demand Recirculation Water System C,R [B] Dwelling Unit C Dynamic Glazing C Enclosed Space C Equipment Room C Fenestration Product, Field Fabricated C,R Fenestration Product, Site Built C Furnace Electricity Ratio C General Lighting C Integrated Part Load Value (IPLV)		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		C Nonstandard Part Load Value (NPLV) C On-site Renewable Energy C,R [B] Sleeping Unit C,R Visible Transmittance (VT) R Whole House Mechanical Ventilation System		
Section 202 Modified		Definitions which are modified in the 2012 IECC and their applicable sections are: C,R Residential Building C,R Skylight		
	Amend: SPS 363.0202 (2)	SUBSTITUTIONS. Substitute the following definition for the corresponding definition listed in IECC section 202 C202 : “Approved” has the meaning given in s. SPS 362.0202 (2).		
	Create: SPS 363.5202	SUBSTITUTIONS. Substitute the following definition for the corresponding definition listed in IECC section R202: “Approved” has the meaning given in s. SPS 362.0202 (2).		
202	Application of "daylight zone"	Add former amendment from 2006 IECC Comm 63.0505(1)(b) Alternative. The daylit (daylight) area (zone) shall be as calculated using a method acceptable to the department”. This allows single fixtures whose placement is odd for control situations to be placed with lighting controls more appropriate to its location. Location of single fixtures that may visually not seem appropriate for daylight zone controls, can be more appropriately grouped for control purposes, without the need for petition for variance		Amend 363.0202 Daylight zone adjacent to vertical fenestration, "method acceptable to the department" 3
Section 202 C402.2.2.1		Clarifies that the provisions include multiple definitions of “Above-Grade Wall” for the commercial requirements, the alternate definition in C402.2.2.1 pertains only to walls covered by section C402.2.3		ASHRAE 90.1 uses a third definition for “above grade wall”
CHAPTER 3 - GENERAL REQUIREMENTS				
302	SPS 364.0403(5)(d)2.d.	IECC 302 references 75°F as the indoor design temperature, while SPS 364.0403(5)(d)2.d. references 78°F. Modify WI amendment to compliment wording of the IMC		SPS 364.0403 minimum 75° F cooling 13
	Amend: SPS 363.0302	Exterior design conditions. These are department rules in addition to the requirements in IECC section 302 C302 : The exterior design temperatures used for heating and cooling load calculations shall be as specified under Table 363.0302.		
	Create: SPS 363.5302	Exterior design conditions. These are department rules in addition to the requirements in IECC section R302: The exterior design temperatures used for heating and cooling load calculations shall be as specified under Table 363.0302.		
	Amend: SPS 363.0303	Materials, systems and equipment. These are department rules in addition to the requirements in IECC section 303 C303 .		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
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	<p>Create: SPS 363.5303 Copy (1) and (2) from 363.0303</p>	<p>Materials, systems and equipment. These are department rules in addition to the requirements in IECC section R303.</p>		
<p>Tables C303.1.3(3), R303.1.3(3)</p>		<p>Adds Visual Transmittance (VT) values to Table 102.1.3(3); VT is the ratio of visible light entering the space through the fenestration product assembly to the incident visible light, it includes the effects of glazing material and frame, and is expressed as a number between 0 and 1; a “0” is opaque, a “1” is totally transparent”</p>		<p>VT is one of the factors used when calculating the performance of “dynamic glazing” in a commercial building for compliance with C402.3.3</p>

PART 2 - IECC - COMMERCIAL ENERGY

CHAPTER C4 - COMMERCIAL ENERGY EFFICIENCY

<p>C401.1</p>		<p>Modifies the format to more clearly show the three options for compliance, [1] following ANSI/ASHRAE/IESNA 90.1, [2], a prescriptive path, and [3] a performance path; the prescriptive path follows requirements for building envelope in C402, mechanical systems in C403, service water heating in C404, and electrical and lighting in C405, with a requirement for meeting efficiency requirements for either HVAC in C406.2, lighting in C406.3, or on-site renewable energy in C406.4; the performance path follows the requirements of C407, along with C402.4, C403.2, C404, C405.2, C405.3, C405.4, C405.6, and C405.7, and must have an energy cost equal to or less than 85 percent of the standard reference building</p>		<p>Numbering of SPS 363 will have to change to adapt to the new format in the IECC</p> <p>For example: Use SPS 363.0405 to modify C405 Use SPS 363.5405 to modify R405</p>
	<p>Renumber and amend SPS 363.0501</p>	<p>SPS 363.0401 General application. This is a department rule in addition to the requirements in IECC section 501.2 <u>R401.2</u>: All of the following rules shall apply regardless of whether the IECC chapter 5 4 [CE] or ASHRAE 90.1 standard is used to determine compliance: (1) Section SPS 363.0503 <u>SPS 363.0403</u> (1) relating to design loads. (2) Sections SPS 363.0503 <u>SPS 363.0403</u> (3) and (4) relating to economizers. (3) Section SPS 363.0505 <u>SPS 363.0405</u> relating to lighting systems.</p>		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		(4) IECC section 505.2.2.1 C405.2.2.2 relating to dual switching.		
C401.2.1		Adds a new section with requirements for additions, alterations, and repairs of existing buildings to either follow ANSI/ASHRAE/IESNA 90.1 or the prescriptive requirements of the IECC without the added efficiency requirements of C406		
Section C402		<p>Focuses more on building envelope where the previous commercial section focused more on mechanical, lighting, and service water heating systems;</p> <p>new sections include:</p> <ul style="list-style-type: none"> ▪ roof solar reflectance and thermal emittance ▪ insulation of radiant heating systems ▪ increased vertical fenestration with daylighting controls ▪ increased skylighting with daylighting controls ▪ minimum skylight daylight fenestration area ▪ haze factor ▪ dynamic glazing ▪ air barrier construction ▪ air barrier compliance options ▪ materials ▪ assemblies ▪ building test, air barrier penetrations ▪ building test, air leakage of fenestration <p>revised sections include:</p> <ul style="list-style-type: none"> ▪ specific insulation requirements ▪ opaque thermal envelope requirements ▪ building envelope requirements, fenestration ▪ maximum fenestration area ▪ vestibules ▪ outdoor air intakes and exhausts ▪ recessed lighting 		
C402.1.1	SPS 363.002 exempts			

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
	glazed structures from the requirements of the energy code; similar language is now found in IECC C402.1.1, where greenhouses have been added to the list of building types exempt from the thermal envelope provisions of the IECC; <i>the SPS 363.002 statement should be reviewed</i>			
C402.2		Modifies thermal performance values and adds provisions for the installation of continuous insulation		(prescriptive)
C402.2.1.1		Adds a new section that addresses the amount of solar heat reflected and radiated from low sloped roofs in Climate Zones 1, 2, and 3		NA
C402.2.6		Modifies requirements for slabs on grade by adding a new minimum prescriptive protection requirement for insulation extending away from the building, and by adding a new exception for perimeter insulation with slab on grade floors greater than 24 inches below the finished exterior grade		
C402.2.8		Adds a requirement for insulation of all radiant heated floor slabs and radiant panels designed for sensible heating of internal space		
C402.3		Modifies the building envelope requirements: fenestration table C402.3 with a major overhaul and supplements it with a table for SHGC adjustment multipliers, C405.2.2.3.2		(prescriptive)
C402.3.1		Modifies the baseline maximum for vertical fenestration from 40 percent to 30 percent, but up to 10 percent can be added with the use of automatic daylighting controls; the baseline maximum of 3 percent for skylights can be		Skylights are now required over certain large spaces for specific uses, but Climate Zones 6-8 are exempt

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		increased to 5 percent with daylighting controls; and skylights are now required over large spaces exceeding 10,000 square feet with certain uses, but Climate Zones 6-8 are exempt from this requirement		
C402.3.3		Modifies the method of determining the maximum U-factor and solar heat gain coefficient (SHGC) by no longer allowing for an area-weighted projection factor; each area with a different projection factor will be required to be evaluated separately		
C402.3.3.1-4		Modifies provisions by providing additional variables to allow increased design flexibility for adjusting the SHGC		
C402.4.1		Adds requirements for air-barriers with new prescriptive and/or measurable mandatory requirements		
C402.4.7		Modifies vestibule requirements by requiring vestibules for doors adjacent to revolving doors, and by exempting doors used only by employees from needing a vestibule		
	Renumber and amend: SPS 363.0503	<p>SPS 363.0403 Building mechanical systems.</p> <p>(1) CALCULATION OF HEATING AND COOLING LOADS. The following wording is a department requirement in addition to the requirements in IECC section 503.2.1 <u>C403.2.1</u>: Design heating and cooling loads shall be determined in accordance with s. SPS 363.0302 and Table 363.0302.</p> <p>(2) EQUIPMENT AND SYSTEM SIZING. Substitute the following wording for the requirements and the exceptions in IECC section 503.2.2 <u>C403.2.2</u>: Heating and cooling equipment and systems shall be sized to provide the minimum space and system loads calculated in accordance with s. SPS 363.0302.</p> <p>(3) HVAC SYSTEM COMPLETION. The requirements in IECC sections 503.2.9 <u>C403.2.11</u> is not included as part of this chapter.</p> <p>(4) ECONOMIZERS-SIMPLE HVAC SYSTEMS. Substitute the following wording for the requirements in IECC section 503.3.1 <u>C403.3</u> and Table 503.3.1 <u>(4) C403.3.3(1)</u>: Supply air economizers shall be provided on the following cooling systems:</p> <p>(a) Package roof top units > 33,000 Btu/h.</p> <p>(b) All other cooling systems > 54,000 Btu/h.</p> <p>(5) ECONOMIZERS-COMPLEX HVAC SYSTEMS. Substitute the following wording for the requirements, but not the exceptions, in IECC section 503.4.1: Supply air economizers shall be provided on cooling systems as described under sub. (4). Economizers shall be capable of</p>		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		<p>operating at 100 percent outside air, even if additional mechanical cooling is required to meet the cooling load of the building.</p> <p>(6) (5) CLIMATE ZONES 3 AND 4 5 THROUGH 8. Substitute the following wording for the requirements in IECC section 503.4.3.3.2.2 C403.4.2.3.2.2: For climate Zones 5 through 8 as indicated in Figure 301.1 C301.1 and Table 301.1 C301.1, if an open-circuit cooling tower is used, then a separate heat exchanger shall be required to isolate the cooling tower from the heat pump loop, and heat loss shall be controlled by shutting down the circulation pump on the cooling tower loop and providing an automatic valve to stop the flow of fluid.</p>		
C403.2.2		<p>Limits sizing of equipment Request committee to review since past advice & practice via previous committees was to allow oversizing to address pick-up loads in factories, warehouses, offices, etc. Review language and acceptable options</p>		97
C403.2.3 C403.2.3.2 Tables C403.2.3 (1-9)		<p>Modifies the equipment performance requirements; adds a new column "Heating Section Type" which differentiates electric resistance equipment from other types; additional equipment types (through-the-wall, air-cooled) have been added; new tables have been added for heat rejection and heat transfer equipment; SEER requirements have been improved; and some equipment efficiencies have improved</p>		
C403.2.4.3.3		<p>Adds a requirement for all HVAC systems to be capable of automatically adjusting the daily start time in order to bring the space that is controlled up to temperature immediately prior to scheduled occupancy</p>		
C403.2.5.1		<p>Modifies the threshold for Demand Control Ventilation (DCV) from average occupant load of 40 people/1,000 square feet to 25 people/1,000 square feet; adds an exception for process loads</p>		
C403.2.6		<p>Modifies energy recovery ventilation system requirements by adding a new table which replaces a single fixed trigger point of 5,000 cfm and 70 percent outdoor air, and provides a comprehensive and scalable energy recovery requirement based on the climate zone and percentage of outdoor air at full design flow</p>		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		rate		
C403.2.8		Modifies piping insulation by expanding and clarifying exceptions for smaller strainers, control valves and balancing valves, as well as direct buried piping that conveys fluids at or below 60 degrees Fahrenheit; provides a scalable table which bases insulation thickness on fluid operating temperature range and insulation conductivity		
C403.2.8.1		Adds a requirement for protecting insulation exposed to the elements, but prohibits the utilization of adhesive tape as the protective measure		
C403.2.11	SPS 363.0503 removes IECC 503.2.9 (2009) and its subsections from the code; the IECC commissioning and completion requirements are much stricter now; in the 2015 edition of the IECC, this is now section C403.2.11 and references section C408, which deals with commissioning; <i>the SPS 361 regulations regarding completion may need to be revised in order to address the commissioning aspects of the current code</i>			
C403.3.1, Table C403.3.1 (1)	The IECC 2009 requirements for economizers were made more strict by SPS 363.0503; they were made stricter yet in IECC 2012 and in 2015	Modifies the provisions regarding economizers, making requirements more comprehensive than previous editions of the IECC		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
	the IECC continued this trend; <i>SPS 363.0503 (4) and (5) should be revisited in light of these modifications</i>			
C403.3.1 (2015) C503.3.1 (2009)	SPS 363.0503 (4)	Challenges by designers have pointed out that a zone (see Definition in IMC 202) within an enclosed area could be treated differently when attempting to apply this section Add language that defines a zone as an enclosed room or space, or that the application of this section is specific to the enclosed area via walls, ceilings, windows, doors, skylights, etc. served by the cooling system(s).		Clarify definition of Zone as related to economizer requirements 52
C403.4.1.3, C403.4.1.4		Adds a requirement for economizers to be integrated with the associated mechanical cooling system, operate even when additional cooling is required, and provide no-to-minimal impact on the heating system		
C403.4.2		Modifies variable air volume (VAV) controls by reducing minimum motor sizes and allowing vane axial fans with variable pitch blades; and specifies the location(s) for static pressure sensors		
C403.4.3.2.2	SPS 363.0503 (6) removes closed-circuit cooling towers from this requirement; this paragraph is now found at C403.4.2.3.2.2			
C404	SPS 363.0504 removes sections of the IECC 2009 related to service water heating dealing with temperature controls, heat traps, and pool covers; the latter two may still be appropriate, but the referenced section on temperature controls is not in the 2015 IECC			
	Renumber and amend	SPS 363.0504 SPS 363.0404 Service water heating. (4) TEMPERATURE CONTROLS. The		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
	SPS 363.0504	requirements in IECC section 504.3 are not included as part of this chapter. (2) (1) HEAT TRAPS. The requirements in IECC section 504.4 C404.3 are not included as part of this chapter. (3) (2) POOL COVERS. The requirements in IECC section 504.7.3 C404.9.3 are not included as part of this chapter.		
	Create 363.0504 (3)	SPS 363.0504 (3) COMMISSIONING. The requirements in IECC section C404.11 are not included as part of this chapter.		?
C404.5		Modifies pipe insulation requirements for automatic circulating hot water and heat traced systems by addressing heat traced systems as an individual item and clarifying insulation requirements for non-circulating systems; modifies the control section to clarify that manually controlled circulating systems are required to stop pumping when there is limited hot water demand		
C404.7		Modifies requirements for pools by excluding temporary and above ground spas from the scope of the regulations, raising the benchmark percentage for site recovered energy, and setting the criteria for energy use calculations; revises the section title to include in-ground permanently installed spas		
C404.9 (2015) 504.7.2 (2009)		This section requires that time switches be installed in pools. Rules issued by DHS mandate that pump operation occur continuously, 24 hrs/day, 365 days per year.		Amend this section such that the requirements is eliminated 85
C405.1		Modifies from 50 percent to 75 percent the amount of line voltage fixtures required to have high efficacy bulbs		(mandatory)
C405.2.1.2		Modifies lighting reduction controls by limiting the size of exempted single luminaires and by exempting electrical and mechanical rooms		
C405.2.2		Deletes the section on automatic lighting shutoff and adds this section on additional lighting controls which includes automatic daylighting controls; and provides exceptions for sleeping rooms, spaces for patient care, spaces where automatic shutoff would		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		endanger safety or security, and lighting intended for continuous operation		
C405.2.2.1		Modifies requirements for automatic controls by eliminating the 5,000 square feet threshold, and making reductions in the allowable maximum override control area; exempts emergency egress lighting and lighting controlled by occupancy sensors from this requirement		
C405.2.2.2		Adds requirements for occupancy sensors in classrooms, conference rooms, restrooms, private offices, and all areas 300 square feet or less enclosed by floor to ceiling height partitions		
C405.2.2.2.1	SPS 363.0505 (1) (a) 2. References IECC 505.2.2.1, which now pertains to C405.2.2.2.1, <i>this chapter has changed enough that SPS 0505 should be reviewed; additionally, the definitions and provisions regarding daylight zones and daylighting have change and been expanded considerably since 2009</i>			
C405	SPS 363.0505 (2) references IECC section 505.5.1.4 (2009), which has no equivalent section in the 2015 IECC			
	Renumber and amend SPS 363.0505	SPS 363.0405 Lighting systems. (1) CONTROLS. These are department rules in addition to the requirements in IECC section 505 C405: (a) <i>General.</i> Except as provided in par. (b), daylight zones in any interior enclosed space greater than 250 square feet and a lighting density more than 0.6 W/ft ² shall have at least one control that meets all of the following requirements:		Only reference to track lighting in C405.4.1

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		<p>1. Controls only luminaires in the daylight zones.</p> <p>2. Controls at least 50% of the lamps or luminaires in the daylight zone, in a manner described in IECC section 505.2.2.4 <u>C405.2.2.2</u>.</p> <p>(b) <i>Exceptions</i>. The requirements of this subsection do not apply to any of the following:</p> <ol style="list-style-type: none"> 1. Daylight zones where the effective aperture of glazing is equal or less than 0.1 for vertical glazing and 0.01 for horizontal glazing. 2. Daylight zones where existing adjacent structures or natural objects obstruct daylight to the extent that effective use of daylighting is not feasible. <p>(2) LINE-VOLTAGE LIGHTING TRACK AND PLUG-IN BUSWAY. Substitute the following for the requirements in IECC section 505.5.1.4 C405: The wattage of line-voltage lighting track and plug-in busway which allows the addition or relocation of luminaires without altering the wiring of the system shall be the volt-ampere rating of the branch circuit feeding the luminaires or an integral current limiter controlling the luminaires, or the higher of the maximum relamping rated wattage of all of the luminaires included in the system, listed on a permanent factory installed label, or 30 W/linear foot.</p>		Renumber section accordingly if (2) is eliminaed
C405.2.2.3		Modifies provisions related to daylight zones, which are areas likely to have sufficient sunlight for compliance with IBC minimum lighting requirements during the day		
C405.2.2.3.2		Adds requirements for automatic daylighting controls to give the user a choice between continuous dimming or stepped dimming		
C405.2.3		<p>Adds additional specific application controls in addition to those for hotel sleeping rooms, and lighting equipment for sale or for lighting demonstrations by including:</p> <ul style="list-style-type: none"> ▪ display and accent lighting ▪ lighting in cases used for display ▪ supplemental task lighting ▪ lighting for non-visual applications 		
C405.5.2		Modifies the provisions by providing two methods of demonstrating compliance with the total interior lighting power allowance; the Building Area Method, and the Space by Space Method		
Table C405.5.2.1		Modifies the Interior Lighting Power Allowances: Building Area Method by removing the additional power allowance for specific merchandizing categories and moves		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		them to the Space by Space Method (Table C405.5.2(2))		
Table C405.5.2 (2)		Adds the Space by Space Method of compliance with Interior Lighting Power Allowance determination and includes the additional power allowance for specific merchandizing categories, which were formally only applicable to the Building Area Method of compliance		
C406		<p>This section requires that one (1) efficiency option be met. The Dept. does not require the submittal of lighting plans, thus review is in question. Additionally, water service is addressed by the plumbing group, and not the building code group.</p> <p>Add language that requires that the specific efficiency project option chosen is clearly addressed on the building/HVAC plans, with appropriate justification of code compliance included.</p> <p>IECC 2015 has requirements that are not spelled out on submitted plans. Not able to track. No lighting submittal makes it difficult to track option selected.</p>		50
C406.1		Adds a new section with additional efficiency package options; where the prescriptive compliance path is followed; at least one of these options is required in addition to all other code requirements; they are described in C406.2, C406.3, and C406.4		
C406.1		<p>Direct Comcheck for use under prescriptive requirements instead of Total Building Performance so that the program may be used prescriptively with C406.1 -the additional efficiency requirements</p> <p>Failure to do so will require that bldg design will be required to meet the prescriptive requirement only. This allows for greater flexibility.</p>		Creates code flexibility for design 102
	Renumber and amend SPS 363.0506	<p>SPS 363.0506 SPS 363.0407. Total building performance. This is a department informational note to be used under IECC section 506 C407:</p> <p>Note: ComCheck is a computer program that may be used only for determining building envelope or lighting compliance. The ComCheck computer program may be downloaded at: http://www.energycodes.gov/.</p>		
C406.2		Adds an efficiency option to continue to use off site generated energy and to increase the HVAC efficiency		
C406.3		Adds an efficiency option to use an efficient lighting system for the entire building as the additional energy efficiency package		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
C406.4		Adds an efficiency option to provide on-site renewable energy that is equivalent to or greater than: 75 Btu or 0.50 watts per square foot of conditioned floor area, or three percent of the energy used in the building for non-process loads		
C407.3		Modifies performance based compliance methodology by keeping the requirements the same, but requiring buildings to achieve 15 percent greater energy efficiency, since C401.2 states that “ <i>The building energy cost shall be equal to or less than 85 percent of the standard reference design building</i> ”		
C408.1		Adds a section for building system commissioning which allows performance and efficiencies to be verified, giving a reasonable idea of how a well maintained building will perform		
C408.2		Adds requirements for the registered design professional to: <ul style="list-style-type: none"> ▪ provide evidence of commissioning and compliance ▪ indicate provisions for commissioning and completion in construction documents ▪ provide copies of documents to owner, and if requested, to code official ▪ provide written commissioning plan 		
C408.2.2		Modifies requirements for balancing both air and hydronic systems in a manner intended to minimize throttling losses		
C408.2.3		Adds requirements for testing of mechanical equipment, controls, and economizers prior to a final inspection		
C408.2.4		Adds requirements for the registered design professional or approved agency to complete and certify a preliminary report of the commissioning test procedures itemizing: <ul style="list-style-type: none"> ▪ uncorrected deficiencies ▪ deferred tests 		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		<ul style="list-style-type: none"> ▪ conditions for performing deferred tests 		
C408.2.5		<p>Modifies documentation requirements by removing the mechanical contractor as the responsible party; and spelling out that documentation include:</p> <ul style="list-style-type: none"> ▪ drawings ▪ manuals ▪ system balancing report ▪ final commissioning report 		
C408.3		<p>Adds functional lighting control testing as part of the commissioning process with the design professional responsible for identifying the party who will do the testing, the plan reviewer is responsible to see that the party is named, and the inspector has a contact to assure compliance prior to approving occupancy</p>		
C403.2.4.2 (2015) 503.2.4.3 (2009)		<p>ASHRAE 90.1 exempts radiant floor and ceiling heating systems from requiring setback controls because the mass/heat capacity of these building systems. This exception should be incorporated into the IECC because requiring the use of such setback controls is inappropriate for such systems.</p> <p>Add language exempting the need for setback controls for radiant floor & ceiling heating systems. Provides recognition of system limitations, and limited energy savings</p>		32
C503.1 exc.7 C503.6		<p>Two referenced sections list different percentages of luminaire replacement (ie. 50% vs 10%) Dept. to define which is to be applicable for code use</p>		104
C600	<p>SPS 363.0900 adds 1 NCMA standard and 4 ASTM standards, one of which is now also cited in the IECC</p>			
	<p>Renumber and amend: SPS 363.0900</p>	<p>SPS 363.0900 SPS 363.0600 Referenced standards. This is a department rule in addition to the requirements in IECC chapter 6 [CE]: The following standards are hereby incorporated by reference into this code:</p> <p>(1) ASTM C177-04 <u>C177-13</u>, Test method for steady-state heat flux measurements and thermal transmission properties by means of the guarded-hot-plate apparatus.</p> <p>(2) ASTM C335-05 <u>C335/C335M-10e1</u>, Test method for steady state heat transfer properties of horizontal pipe insulation.</p> <p>(3) ASTM C518-04 <u>C518-15</u>, Test Method for steady-state thermal transmission properties by</p>		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
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		<p>means of the heat flow meter apparatus. (4) ASTM C1363–05, Test method for thermal performance of materials and envelope assemblies by means of a hot box apparatus. (5) (4) National Concrete Masonry Association (NCMA) Evaluation Procedures of Integrally Insulated Concrete Masonry Walls, January 1, 1999.</p>		
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PART 3 - IECC - RESIDENTIAL ENERGY

CHAPTER R4 - RESIDENTIAL ENERGY EFFICIENCY

	<p>Renumber and amend: SPS 363.0401</p>	<p>SPS 363.5401 Certificate. The requirements in IECC section 401.3 <u>R401.3</u> are not included as part of this code.</p>		
R402.1.1		<p>Section references both the IRC and IBC for vapor retarder requirements Reference to the IRC for vapor retarder requirements should be stricken since this code is applicable to commercial buildings only Clarifies that IBC 1405.3 is to be used.</p>		103
Table R402.1.1		<p>Modifies the prescriptive insulation and fenestration requirements by component including requirements for continuous insulation at wood framed walls in Climate Zones 6 and 7</p>	Renamed Table R402.1.2	!
Table R402.1.1		<p>Modifies the footnotes for the table including:</p> <ul style="list-style-type: none"> ▪ footnote <i>a</i> notes the reduction in R-value when batt insulation is compressed ▪ footnote <i>b</i> allows the exclusion of certain skylights from some SGHC requirements ▪ footnote <i>h</i> allows for consistent sheathing thickness while maintaining wall bracing ▪ footnote <i>j</i> regarding impact rated fenestration has been eliminated 	Renamed Table R402.1.2	
Table R402.1.3		<p>Modifies the prescriptive Equivalent U-factor table, an alternative to the R-value table, R402.1.1</p>	Renamed Table R402.1.4	
R402.2.3		<p>Adds requirements for eave baffles to maintain openings between soffit and eave vents and a vented attic space</p>		
R402.2.6		<p>Modifies the R-values significantly for steel framed walls to account for the conduction properties of the steel</p>		
R402.2.12, R402.3.5		<p>Modifies requirements for sunrooms by clarifying the wall separation provision and</p>		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		making it clear that these provisions do not apply to spaces that are not thermally isolated; requires the wall separating the conditioned space and the thermally isolated sunroom to meet exterior wall criteria of IECC 2012		
R402.4.1		Modifies building thermal envelope provisions by requiring testing and visual inspection; the code official is authorized to require an approved third party to inspect and verify compliance		Administration issues
R402.4.1.2		Modifies air leakage provisions by requiring inspection and testing while increasing tightness requirements; in most cases mechanical ventilation will be required in houses to meet the air tightness requirements		
R402.4.2		Modifies the requirement for gasketed doors at fireplaces by moving it from the text of the code to table R402.4.1.1; and adds a requirement for tight fitting flue dampers		
	Renumber and amend: SPS 363.0403	SPS 363.5403 Systems. (1) ELECTRICAL POWER AND LIGHTING. This is a department rule in addition to the requirements in IECC section 403 R403: In residential buildings having individual dwelling units, provisions shall be made to determine the electrical energy consumed by each tenant by separately metering individual dwelling units. (2) DUCTS. Substitute the following wording for the requirements in IECC section 403.2.2 RR403.3.2: All ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with IMC section 603.9.		
R403.2	SPS 363 0403 (2) reads in part “all ducts, air handlers, and filter boxes shall be sealed, joints and seams shall comply with IMC section 603.9	Modifies requirements for duct construction and sealing by requiring joints and seams to comply with either the <i>International Mechanical Code</i> (IMC) or the <i>International Residential Code</i> (IRC), which includes: <ul style="list-style-type: none"> ▪ SMACNA HVAC duct construction standards ▪ NAIMA fibrous glass duct construction standards ▪ UL-181 listing for duct board construction ▪ UL-181b listing for flexible construction ▪ unlisted duct tape is prohibited 		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		▪ exception for certain longitudinal seams		
R403.2		Modifies requirements for duct tightness and verification by compliance with provisions related to a post construction test and a rough-in test		
R403.3.1		Adds a requirement for protecting insulation exposed to the elements, but prohibits the utilization of adhesive tape as the protective measure		
R403.4		Modifies insulation requirements for service hot water systems by increasing the minimum R-value to R-3 and including a list of specific situations where insulation is required, detailed in table R403.4.2		
R403.5		Adds requirements for mechanical ventilation in any building that has less than five air changes per hour at 50 Pascals (5ACH/50)		(mandatory)
R403.5.1		Adds a simple efficiency requirement for various mechanical ventilation system fans in table R403.5.1		
R403.6		Modifies requirements for equipment sizing from a reference through the IRC to a direct reference requiring sizing of equipment per Air Conditioning Contractors of America (ACCA) Manual S based on loads calculated in accordance with ACCA Manual J or other approved method		(mandatory)
R403.9		Modifies requirements for pools by excluding temporary and above ground spas from the scope of the regulations, insulated pool covers are no longer required		(mandatory)
R403.10 (2015) 403.9.2 (2009)		This section requires that time switches be installed in pools. Rules issued by DHS mandate that pump operation occur continuously, 24 hrs/day, 365 days per year.		Amend this section such that the requirements is eliminated 85
R403.10.4 (2015) 403.9.3 (2009)	SPS 363.0504 (3)	This section req's a pool cover be installed for pools located within low rise residential bldgs < 3 stories above grade. SPS 363.0504(3) was created due to health issues from the field that chloramines would overwhelm people when the pool cover was removed, and cause them to go unconscious.		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		Amend this section such that the req't for a pool cover is eliminated just as has been previously done to IECC 504.7.3		86
R404.1		Modifies lighting equipment provisions by requiring that 75 percent of the lamps in permanently installed light fixtures contain only high efficacy lamps		(mandatory)
R405.3		Clarifies that the Commercial provisions require computer modeled performance 15 percent better than the standard reference design, the Residential provisions do not		
Table R405.5.2 (1)		Modifies the language of the table to clarify acceptable compliance methodology with the inclusion of technical details		
	Renumber and amend: SPS 363.0405	SPS 363.5405 Calculation software tools. This is a department informational note to be used under IECC section 405-6 R405.6:		
	Renumber and amend: SPS 363.0405 Note:	SPS 363.5405 Note: The federal Department of Energy has developed REScheck™, a computer program that may be used in demonstrating compliance for a residential building which has no more than 3 stories above grade and has 3 or more dwelling units. The REScheck program may be downloaded at http://www.energycodes.gov/ . When using the program, the applicable code must be defined as the “2009 IECC.” The use of the “Wisconsin” option will apply requirements associated with a 1 or 2 family dwelling, which are more restrictive than those associated with low-rise multifamily buildings. (new text)		
405.6	363.0405	REScheck has multiple versions in use, for uniformity the dept recommends using the most recent version. 363.0405 Calculation software tools. Add: The most recent version of REScheck shall be used when demonstrating code compliance. This will provide uniformity for reviewers, submitters and users of energy standard to all be consistent and current with energy requirements. As this is utilized in the design stage, there should be minimal impact to construction cost. Software is free download.		Add to the Note: The most recent version of REScheck shall be used when demonstrating code compliance. 2
PART 4 - ASHRAE/IES 90.1				
THE BUILDING ENVELOPE				
4.2.4		Adds continuous air barriers to the list of required inspection items		
5.1.2		Adds language clarifying that the new requirement for the addition of skylights to certain spaces also applies to unconditioned spaces		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
5.4.3.1		Modifies provisions for sealing the building envelope by adding requirements for design, installation, and materials for the construction of a continuous air barrier for the entire building envelope		
5.4.3.2		Modifies air leakage criteria at fenestration and doors to more closely reflect current practice		
5.5.3.1		Modifies and expands the types of roofs shown by research to reduce the conduction loads through roofs into the conditioned space, allowing designers to select from a number of alternatives and reduce space loads, reducing energy use and cost		
5.5.3.4		Modifies the vestibule requirements for Climate Zone 4		NA
5.5.4.2.2		Adds skylight requirements in larger spaces with specific uses to promote daylighting energy savings, but Climate Zones 6-8 are exempt		NA
5.5.4.4.1		Adds a requirement that the minimum values for dynamic glazing be used to show compliance; in the envelope trade off rules found in Appendix C, the dynamic glazing must use the Standard values from C3.5 to show compliance; when dynamic glazing is used in the Appendix G models, the average values are to be used		
5.5.4.5		Adds a requirement that the area of south facing glass be equal to or larger than the area of east or west facing glass		
5.8.1.10		Adds a requirement for offsetting joints by staggering boards when multiple layers of insulation are used		
5.8.2		Adds Visible Transmittance (VT) to the list of rating and labeling requirements for fenestration products		
PART 5 - ASHRAE / IES 90.1				

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
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H V A C				
6.4.1.1		Modifies the minimum equipment efficiencies tables by adding new equipment types and requiring compliance with the Standard for equipment used in buildings as defined by the new scope of the Standard		
6.4.1.2		Modifies provisions by introducing a new equation to adjust the performance of centrifugal chillers operating at non-standard conditions to show compliance with the Standard		
6.4.1.2.2		Modifies provisions related to positive displacement chillers that use glycol and other additives by requiring them to be tested with water at standard rating conditions		
6.4.2		Modifies heating and cooling load calculations by reference to ANSI/ASHRAE/ACCA Standard 183, <i>Peak Heating and Cooling Load Calculations in Buildings Except Low-Rise Residential Buildings</i> ; and requires pump head calculation for the critical circuit		
6.4.3.4.3		Modifies provisions to separate the requirements for exhaust/relief dampers from ventilation intake dampers		
6.4.3.4.5		Adds an allowance for a reduction in ventilation in unconditioned garages and requires an automatic control that is capable of staging fans or modulating fan volume as required to maintain carbon monoxide contaminant levels		
6.4.3.10		Adds a requirement for variable air volume fan speed controls to be included in single zone units		
6.4.4.1.4		Adds a requirement for minimum insulation to be applied to the back of radiant heating panels		
6.4.4.1.5		Adds a requirement for minimum insulation		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		to be applied to the bottom of radiant heated floors		
6.4.4.2.1		Modifies provisions regarding duct sealing to require ducts and plenums with pressure class ratings to be constructed to seal Class A, and provides a definition for the seal class		
6.5.1		Modifies provisions so as to provide minimum fan cooling unit sizes for required economizers on computer rooms		
6.5.1	<i>SPS 363.0503 (4) and (5) should be revisited in light of these modifications</i>	Modifies the economizer table, requiring economizers to be installed in all units with 54,000 Btu/h or more of cooling in all but Climate Zone 1		
6.5.1.2		Adds requirements for water economizers in computer rooms		
6.5.1.3		Modifies provisions by removing all exceptions from the requirement for integrated economizer control		
6.5.2.1		Adds a control strategy for VAV reheat boxes and eliminates some exceptions from the section		
6.5.2.1.1		Adds a provision limiting the heating air temperature of reheat boxes when the supply and return grilles are both six feet above the floor		
6.5.3.3		Adds a requirement to use ASHRAE 62.1, Appendix A, to optimize the ventilation efficiency and reduce the outside air amount used with room loads below design		
6.5.3.4		Adds a requirement for supply air temperature automatic reset controls for multiple zone HVAC systems		
6.5.4.1		Modifies the pumping power requirements for HVAC systems		
6.5.4.4.2		Modifies provisions to include water cooled unitary air conditioners with hydronic heat pumps and require both to provide automatic valves that shut off when the compressor		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		does, and provide variable speed pumps		
6.5.4.5		Adds requirements to use a standard table for sizing HVAC piping in order to control pump energy		
6.5.5.3		Adds requirements limiting the power used in open cooling towers with centrifugal fans		
6.5.6.1		Modifies provisions by increasing the requirement for air energy recovery in most climate zones		
6.5.7.1		Modifies provisions for kitchen exhaust systems by modifying make-up air requirements to prevent short circuiting, by establishing maximum net exhaust flow rates for exhaust hoods, and by requiring exhaust system performance testing		
6.5.7.2		Modifies the equation for designing laboratory exhaust systems by integrating the alternative paths of compliance to allow each system to contribute to the energy savings		
PART 6 - ASHRAE / IES 90.1				
LIGHTING				
9.1.2		Modifies the provisions to clarify that alterations to the lighting system must comply with all of the section 9 requirements		
9.1.3		Modifies details of the calculations needed to determine the installed exterior lighting power density requirements		
9.2.2.3		Adds two additional exceptions to the lighting types which are not to be included in the installed lighting power calculation		
9.4.1		Modifies provisions by requiring bi-level lighting control and automatic shutdown in all buildings regardless of size, with exceptions: <ul style="list-style-type: none"> ▪ public corridors and stairwells ▪ restrooms ▪ primary building entrance areas and lobbies ▪ areas where manual-on operation would 		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		endanger the safety or security of the room or building occupants		
9.4.1.3		Modifies provisions for lighting control in garages by requiring bi-level lighting control and daylighting controls		
9.4.1.4		Adds a requirement for multilevel daylighting controls for areas adjacent to sidelights		
9.4.1.5		Adds a requirement for multilevel daylighting controls for areas lit by skylights		
9.4.1.6		Modifies provisions to exclude bathroom lighting from being controlled by the master switch required in hotel/motel guest rooms and adds new control requirements for the bathroom lighting		
9.4.1.6		Adds requirements for occupancy lighting controls in building stairwells to dim lighting after occupants leave		
9.4.1.7		Modifies provisions to require controls for exterior lights to turn off the lights under daylight conditions; older versions of the code merely required that the controls were provided		
9.4.2		Deletes requirements for tandem wiring of light fixtures because of improvements in ballast design		
9.4.3		Modifies provisions to apply a five zone lighting power density approach, each with its own base site allowance, and provide allowances for varying site use classifications in different exterior lighting zones		
9.4.4		Deletes the requirement for minimum efficacy of exterior lamps over 100 watts		
9.4.4		Adds a requirement for functional testing of lighting control devices and control systems		
9.5.1		Modifies the lighting power densities used with the building area method of lighting power allowance calculation		
9.6.1		Modifies the Standard to set the lighting		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		power density by space function whether the function is separated by full height wall or not		
9.6.2		Modifies additional retail lighting provisions to reflect the use of modern lamp technology and adds a power allowance requirement to encourage the use of advanced lighting controls		
9.6.3		Adds an allowance for 20 percent more lighting power to be used in small rooms with high ceilings		
9.7		Adds provisions for submittals to the lighting section requiring the submittal of compliance documentation and supplemental information		Administration issues
PART 7 - ASHRAE/IES 90.1				
OTHER CHANGES				
1 Purpose and Scope		Modifies the purpose and scope of the Standard by adding building operation and maintenance, on-site renewable energy systems, and commercial systems to those for which the Standard may develop requirements		
3.2		Modifies provisions by adding multiple definitions, mostly related to daylighting, including: <ul style="list-style-type: none"> ▪ Daylight area <ul style="list-style-type: none"> ▪ Under skylights ▪ Under rooftop monitors ▪ Daylighted area ▪ Dynamic glazing ▪ Fenestration, field fabricated ▪ Multi-level occupancy sensor ▪ Multi-scene control ▪ Primary sidelighted area ▪ Secondary sidelighted area ▪ Sidelighting effective aperture ▪ Toplighting ▪ Vegetative roof system ▪ Visible transmittance (VT) 		
8.4.2		Adds a requirement for the installation of		

IECC/ASHRAE Code Sections	SPS 363	2012 IECC / 2010 ASHRAE 90.1 Changes	2015 IECC / 2013 ASHRAE 90.1 Changes	Comments
		controls to turn off 50 percent of receptacles when the space is unoccupied		
10.4.2		Adds requirements addressing energy waste in service water pressure booster systems		
10.4.3		Modifies energy consumption in elevators by requiring more efficient lighting and fans and by requiring controls that turn the lighting and ventilation off when the elevators are not in use for an extended period of time		

a. Published sources:

- 2009 *International Energy Conservation Code*[®] – International Code Council[®] (ICC)
- 2012 *International Energy Conservation Code* – International Code Council
- 2015 *International Energy Conservation Code* – International Code Council
- Significant Changes to the International Energy Conservation Code and ANSI/ASHRAE/IES Standard 90.1, IECC 2012 Edition, ANSI/ASHRAE/IES 2010 Edition* – International Code Council
- ANSI/ASHRAE Standard 90.1-2007* – American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
- ANSI/ASHRAE/IES Standard 90.1-2010* – American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
- ANSI/ASHRAE/IES Standard 90.1-2013* – American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

b. Various ICC code section number references in SPS 363 will be updated where code section numbering has changed, but these modifications are not referenced here.

c. Changes that are not addressed because they do not apply in Wisconsin include the changes for most of chapter 1 Administration

d. Chapters SPS 361 and 363 of the *Wisconsin Administrative Code* (Register, December 2011)

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File Reference: SPS 363/Summary 2012 & 2015 IECC changes