COMMERCIAL BUILDING PLAN SUBMITTAL

WAUSHARA COUNTY
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**APPENDIX**

Use & Occupancy Classifications  
SBD – 118 Application for Review Buildings, HVAC, Lighting, Fire, and Components  
SBD – 10512 Lighting submittal index sheet and other Lighting Worksheets
Waushara County is a Certified Municipality as outlined by Comm 61.60 of the Wisconsin Administrative Code.

Sec. 8-38. - Certified municipality status.

The county has adopted the certified municipality status as described in COMM 61.60 of the Wisconsin Administrative Code.

(1) Responsibilities. The county shall assume the following responsibilities for the department of commerce (department):

a. Provide inspection of commercial buildings with certified commercial building inspectors.

b. Provide plan examination of commercial buildings with certified commercial building inspectors.

(2) Plan examination. Drawings, specifications and calculations for all the types of buildings and structures, except state-owned buildings and structures, to be constructed within the limits of the municipality shall be submitted, if the plans are for any of the following:

a. A new building or structure containing less than 50,000 cubic feet of total volume.

b. An addition to a building or structure where the area of the addition results in the entire building or structure containing less than 50,000 cubic feet of total volume.

c. An addition containing no more than 2,500 square feet of total floor area and no more than one floor level, provided the largest roof span does not exceed 18 feet and the exterior wall height does not exceed 12 feet.

d. An alteration of a space involving less than 100,000 cubic feet of total volume.

e. A certified municipality may waive its jurisdiction for the plan review of a specific project or types of projects, or components thereof, in which case plans and specifications shall be submitted to the department for review and approval.

f. The department may waive its jurisdiction for the plan review of a specific project, where agreed to by a certified municipality, in which case plans and specifications shall be submitted to the certified municipality for review and approval.

(3) Plan submission procedures. All commercial buildings, structures and alterations require plan submission as follows:

a. Building permit application;

b. Application for review—SBD-118;

1. Fees per Table 2.31-2 and COMM 2.31;

2. Fees apply to all commercial projects;

c. Four sets of plans;

1. Signed and sealed per COMM 61.31;

2. One set of specifications;

3. Component and system plans;

4. Calculations showing code compliance.

(Ord. No. 401, § 1-1-08, 4-20-2004; Ord. No. 522, 3-9-2010)
WAUSHARA COUNTY
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All new commercial buildings require Approved Plans and a Building Permit from Waushara County.

An addition to an existing commercial building requires Approved Plans and a Building Permit from Waushara County.

Alterations to an existing commercial building require Approved Plans and a Building Permit from Waushara County.

WHERE TO SUBMIT PLANS FOR APPROVAL

Projects greater than 50,000 CF submit their plans to the Wisconsin Department of Safety and Professional Services (formerly the Wisconsin Department of Commerce).

New buildings and additions resulting in a total building volume of less than 50,000 CF submit their plans to the Illinois, Waushara Counties Inspection Agency.

Alterations involving more than 100,000 CF submit their plans to the Wisconsin Department of Safety and Professional Services (formerly the Wisconsin Department of Commerce).

Alterations involving less than 100,000 CF submit their plans to the Illinois, Waushara Counties Inspection Agency.

The buildings types in the chart below are exempt from STATE Plan Review. They are NOT exempt from local plan review and permit requirements.

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The buildings that are exempt from Plan Review by the Wisconsin Department of Safety and Professional Services ARE NOT EXEMPT from submitting plans for review to the Local Building Inspection Department to receive their building permit. The plans submitted shall include all plans, calculations, and data that would be submitted to the Wisconsin Department of Safety and Professional Services to receive State Approved Plans.

New buildings 50,000 CF or greater in volume, additions resulting in a building becoming 50,000 CF or greater in volume, alterations to buildings 50,000 CF or greater in volume, must be prepared, signed & sealed in accordance with ch. 443, Stats., and s. A-E 2.02. (Wisconsin Registered Architect or Engineer)
BUILDING COMPONENT SUBMITTAL

SPS 361.30 (3) TYPES OF BUILDING COMPONENTS.
(a) Except as provided in sub. (4), building component or system plans shall be submitted to and approved by the department or authorized representative prior to installation of the component or system, for each of the following type components or systems:
1. Pre-manufactured and pre-engineered structural components.
2. Heating, ventilating and air conditioning systems.
3. Fire protection systems.
(b) Component or systems plans shall be submitted in one of the following manners:
1. Included with the plans under sub. (1) (a).
2. Submitted as a separate plan for the component or system.

A Wisconsin Registered Designer may supervise the installation of HVAC systems, fire protection systems and illumination systems.
Change of Occupancy & Use

Changing an existing commercial structure from an existing occupancy & use category to another occupancy & use category may require a building permit and plan submittal. If the new occupancy & use category is more restrictive than the existing use a permit is required and shall comply with all requirements of the International Existing Building Code.

**SPS 361.03 (11) CHANGE OF OCCUPANCY OR USE.** Except as provided in sub. (12), no change may be made in the use or occupancy of any building or structure, or any space within a building or structure, that would place the building, structure or space either in a different division of the same group of occupancies or in a different group of occupancies, unless the building, structure or space complies with this code’s requirements for the new division or group of occupancies, as these requirements exist on one of the following dates:

(a) Pursuant to s. SPS 361.30, the date when plans for the change in occupancy or use are approved by the department or authorized representative.

(b) The date a local building permit is issued, if plan submittal and approval is not required under s. SPS 361.30.

(c) The date construction is initiated, where pars. (a) and (b) do not apply.

(d) The date an occupancy permit is issued, where pars. (a) to (c) do not apply.

Changing an existing one and two family dwelling, detached garage, pole barn, agricultural structure, etc. to a commercial building is a change of use.

*(See section titled Converting an Existing Structure to a Commercial Building)*
PLAN REQUIREMENTS

SPS 361.30 (2) CONTENTS AND INFORMATION.

(a) 1. Construction documents submitted to the department or its authorized representative for review shall be dimensioned and drawn to scale.

2. The scale used for the construction documents shall be indicated on the documents.

(b) 1. Except as provided in subd. 2., at least 4 sets of construction documents shall be submitted to the department or authorized representative for review.

2. a. At least one set of construction specifications shall be submitted to the department or authorized representative for review.

b. One complete set of plans may be submitted, provided it is accompanied with 3 copies of the cover sheet for the complete set, and provided all 4 cover sheets comply with sub. (1) (a).

c. All construction documents submitted to the department or authorized representative for review shall be permanent copies of the original documents and the copies shall be bound into sets in a manner that enables the documents to be reviewed without removing the binding.

d. Construction documents submitted to the department or its authorized representative for review shall be of sufficient clarity, character and detail to show how the proposed design will conform to this code.

(e) 1. Construction documents shall be accompanied by sufficient calculations or information to substantiate that the documents conform to this code.

2. When requested by the department or its authorized representative, additional data pertaining to the design, construction, materials and equipment shall be submitted to the department or the authorized representative to substantiate conformance to this code.
CONVERTING AN EXISTING STRUCTURE (DWELLING, GARAGE, AG STRUCTURE, ECT.) TO A COMMERCIAL BUILDING

Residential Code vs Commercial Code requirements as based on the 2009 ICC Codes with Wisconsin Amendments

Concerning your inquiry involving converting a single family residence into commercial offices. The following are major items that you should be aware of in making this transition from the residential building code to the commercial building code. Note that without a full set of building plans for review, a full review cannot be performed. There will be other topics that are not addressed. The list will at least provide you insight to your inquiry.

As stated earlier, when a single family residence occupancy is changed to a commercial building, the ENTIRE Wisconsin Commercial Building Code must be applied to the building. Although owners may comment that the building was “existing”, the original building was designed as a residential building under the Uniform Building Code (applicable to 1 & 2 family dwellings), or other criteria which may be applicable to a detached garage, or independent agricultural building. Thus, reference to “existing” in the Wisconsin Commercial Building Code is to existing COMMERCIAL buildings and NOT just any standing building. This has always been the policy at the Division of Safety & Buildings.

Please note the Wisconsin Commercial Building Code consists of the 2009 International Building Code (IBC), International Energy Conservation Code (IECC), International Mechanical Code (IMC), International Fuel Gas Code (IFGC) and the International Fire Code (IFC) when referenced with Wisconsin Amendments. The code amendments are public domain, and are located in SPS Chapters 360 & 366.

You may purchase the 2009 International Energy Conservation Code (IECC), or the 2009 International Building Code (IBC) as adopted for use in Wisconsin at:
http://www.icesafe.org/e/category.html

You may view International Codes, including the 2006 IECC, at the following web site for FREE:
http://publiccodes.citation.com/icod/IC-P-2006-000019.htm

You may view and print out the amendments as issued for use throughout Wisconsin to the 2006 IECC code at:
http://www.legis.state.wi.us/rsb/code/comm/comm060.html

For your information, SPS 363.0505--Comm implies it's a WI amendment, 63 specifically addresses amendments to the 2009 IECC, and the section being amended is the 2009 IECC section 505.

Please note the listed issues below are NOT a full list of requirements for change from a residential building to a commercial building. There may be several others depending on your specific situation.

1. The need for building/HVAC plan submittal and conditional approval is based on the requirements listed under SPS 361.30.

2. The need to have a Wisconsin Registered Professional (Architect, Professional Engineer, HVAC designer (heating system only), Electrical Designer/Master Electrician (lighting system only) involved in the demonstrating compliance with the WI Commercial Building Code is based on SPS 361.31(1). The Wisconsin Dept. of Regulation and Licensing under A-E 2.02 requires registered professionals to be involved in all commercial buildings having 50,000 cubic ft of volume or greater

3. Any stairway would need to meet the stair width requirements of IBC 1009.1.
4. Any stairway steps would need to have a rise of not more than 7 inches measured from tread to tread, and a tread of not less than 11 inches per IBC 1009.1.
5. Guard rails would need to be installed as appropriate per IBC 1013.1.
6. A floor or landing is required at the top and bottom of each stairway. The width of landings shall not be less than the width of the stairway they serve unless an exception can be met. See IBC 1009.4.
7. Stairs from the basement to the exterior of the building (referred to as a vertical exit enclosure) will be required to be enclosed in fire rated construction unless a listed exception is met per IBC 1020. Such enclosure will require fire rated doors per IBC Table 715.4, and door closers per IBC 715.4.7.
8. Door thresholds would need to be no more than ½” per IBC 1008.1.6.
9. Handrails shall meet IBC 1009.10 and criteria under that section.
10. The building and its insulation shall comply with the building envelope requirements using any of the options described in IECC Ch. 4 or 5.
11. The building shall comply with the interior and exterior lighting code described in IECC 505.
12. Recess lighting fixtures must be installed per IECC 502.4.7
13. Door sizes shall be 32” CLEAR unless an exception can be met. See IBC 1008.1.1
14. Exit signs shall be installed per IBC 1011.1.
15. Means of egress illumination shall be installed per IBC 1006.1.
16. Accessible means of egress is required to get to grade. See IBC 1007.1.
17. Outside air is required to be brought into the building through the HVAC system. Refer to IMC/SPS 364.0403 in order to determine your specific outside air needs. The tempering of outside air may require a furnace with a larger heating capacity or an additional unit to be installed. The Commercial Code requires a minimum of 7.5 cfm of O.A. per person. If Table 364.0403 allows the use of natural ventilation, refer to IMC 402/IBC 1203.4.1.
18. If the space requires minimum exhausts per SPS Table 364.0403 for vehicle service or repair, fume hoods, toilet rooms, etc., exhausts shall be addressed along with appropriate make-up air as required per IMC 403.1.
19. Constant air change will be required with or without air conditioning. See IMC/SPS 364.0403 (8)(b) to determine minimum requirements.
20. Bathroom minimum exhausts are 75 cfm/toilet fixture per IMC/SPS Table 364.0403. Reference also SPS 364.0403 for possible use where 50 cfm for 1 toilet fixture/1 bath or shower could be used. Note that exhausts shall run continuously when the building is occupied. See IMC/SPS 364.0401(2)(b)
21. A single toilet room could be used to serve up to 15 occupants based on the most critical point of time per IBC/SPS 362.2902(3) Exception 3. Toilet & bathroom(s) MUST meet all clearance and handicap accessibility requirements associated with IBC 1101.2 and ICC/ASNI A117.1.
22. Assuming there is a basement and that the building is a ranch style home, if there is less than 3,000 sf of floor space ABOVE and BELOW (ie. aggregate), then no elevator is required to get from one floor to another. See IBC 1104.4.
23. Basements without openings which do not have openings directly to the exterior of the building may be required to be sprinklered if over 1,500 sf. See IBC 903.2.10.
24. If the commercial building will have a R2 occupancy and will have more than 8 dwelling units, the building is required to be sprinklered per IBC/Comm Table 62.0903. After Dec. 31, 2010, ANY building with an R2 occupancy will be required to be sprinklered. All R1 & R3 occupancies are required to be sprinklered.
25. Exits shall be distributed or located so that no part of any building will be more than then the distances listed in IBC Table 1016.1, in addition the common path of egress travel may not exceed the values listed in IBC 1014.3.
26. Handicap accessible parking shall be defined and proper signage installed. Ramps to and from the building may not exceed 1:12 and appropriate hand rails, landings, if appropriate would be required per both IBC Tbl 1106 & IBC 1101(2) ANSI A117.1 502.
27. The roof and wall assemblies must be shown via calculations to satisfy the requirements for snow load (balanced, unbalanced, partial), wind loads, seismic loads, etc. per IBC chapter 16.
28. Footing and foundations must be verified based on IBC 1804.2 and snow, wind, seismic, etc loadings from IBC ch. 16.
29. Calculations shall be provided that demonstrate that the existing floor assemblies comply with the minimum loading requirements of IBC Ch. 16, or plans shall be prepared demonstrating how the existing floor assemblies will be modified to meet the minimum loadings of this section.
30. Calculations shall be provided that demonstrate that the proposed heating & exhaust system to be used is adequate if there are changes to the system based on use or additional outside air being distributed.
31. Fire partitions are required between dwellings or be used to create rated corridors per IBC 710.3, and 1017.1 if multiple dwellings are incorporated as part of the building.
32. Exterior walls may be required to be fire rated per IBC 601 & 602 as based on bldg construction type, occupancy, and distance from property line or other buildings on-site.
33. Requirements of the IECC as it pertains to building insulation, duct/piping insulation, equipment efficiencies, etc shall be met. Calculations demonstrating compliance shall be submitted if plan review is required. Otherwise the calculations are to be on site and made available to a Dept. representative upon request.
34. Motorized damper outside air damper shall be installed per IECC 503.2.4.4 if required.
CHAPTER 3
USE AND OCCUPANCY CLASSIFICATION

SECTION 301
GENERAL

301.1 Scope. The provisions of this chapter shall control the classification of all buildings and structures as to use and occupancy.

SECTION 302
CLASSIFICATION

302.1 General. Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed below. A room or space that is intended to be occupied at different times for different purposes shall comply with all of the requirements that are applicable to each of the purposes for which the room or space will be occupied. Structures with multiple occupancies or uses shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved.

2. Business (see Section 304): Group B
3. Educational (see Section 305): Group E
4. Factory and Industrial (see Section 306): Groups F-1 and F-2
6. Institutional (see Section 308): Groups I-1, I-2, I-3 and I-4
7. Mercantile (see Section 309): Group M
8. Residential (see Section 310): Groups R-1, R-2, R-3 and R-4
9. Storage (see Section 311): Groups S-1 and S-2
10. Utility and Miscellaneous (see Section 312): Group U

SECTION 303
ASSEMBLY GROUP A

303.1 Assembly Group A. Assembly Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering of persons for purposes such as civic, social or religious functions; recreation, food or drink consumption; or awaiting transportation.

Exceptions:

1. A building used for assembly purposes with an occupant load of less than 50 persons shall be classified as a Group B occupancy.
2. A room or space used for assembly purposes with an occupant load of less than 50 persons and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
3. A room or space used for assembly purposes that is less than 750 square feet (70 m²) in area and is accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.

Assembly occupancies shall include the following:

A-1 Assembly uses, usually with fixed seating, intended for the production and viewing of the performing arts or motion pictures including, but not limited to:
- Motion picture theaters
- Symphony and concert halls
- Television and radio studios admitting an audience
- Theaters

A-2 Assembly uses intended for food and/or drink consumption including, but not limited to:
- Banquet halls
- Night clubs
- Restaurants
- Taverns and bars

A-3 Assembly uses intended for worship, recreation or amusement and other assembly uses not classified elsewhere in Group A including, but not limited to:
- Amusement arcades
- Art galleries
- Bowling alleys
- Places of religious worship
- Community halls
- Courtrooms
- Dance halls (not including food or drink consumption)
- Exhibition halls
- Funeral parlors
- Gymnasiums (without spectator seating)
- Indoor swimming pools (without spectator seating)
- Indoor tennis courts (without spectator seating)
- Lecture halls
- Libraries
- Museums
- Waiting areas in transportation terminals
- Pool and billiard parlors

A-4 Assembly uses intended for viewing of indoor sporting events and activities with spectator seating including, but not limited to:
- Arenas
- Skating rinks
- Swimming pools
- Tennis courts
USE AND OCCUPANCY CLASSIFICATION

A-5 Assembly uses intended for participation in or viewing outdoor activities including, but not limited to:

- Amusement park structures
- Bleachers
- Grandstands
- Stadiums

SECTION 304
BUSINESS GROUP B

304.1 Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

- Airport traffic control towers
- Animal hospitals, kennels and pounds
- Banks
- Barber and beauty shops
- Car wash
- Civic administration
- Clinic—outpatient
- Dry cleaning and laundries: pick-up and delivery stations and self-service
- Educational occupancies for students above the 12th grade
- Electronic data processing
- Laboratories: testing and research
- Motor vehicle showrooms
- Post offices
- Print shops
- Professional services (architects, attorneys, dentists, physicians, engineers, etc.)
- Radio and television stations
- Telephone exchanges
- Training and skill development not within a school or academic program

SECTION 305
EDUCATIONAL GROUP E

305.1 Educational Group E. Educational Group E occupancy includes, among others, the use of a building or structure, or a portion thereof, by six or more persons at any one time for educational purposes through the 12th grade. Religious educational rooms and religious auditoriums, which are accessory to places of religious worship in accordance with Section 508.3.1 and have occupant loads of less than 100, shall be classified as A-5 occupancies.

305.2 Day care. The use of a building or structure, or portion thereof, for educational, supervision or personal care services for more than five children older than 21/2 years of age, shall be classified as a Group E occupancy.

SECTION 306
FACTORY GROUP F

306.1 Factory Industrial Group F. Factory Industrial Group F occupancy includes, among others, the use of a building or structure, or a portion thereof, for assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair or processing operations that are not classified as a Group H hazardous or Group S storage occupancy.

306.2 Factory Industrial F-1 Moderate-hazard Occupancy. Factory industrial uses which are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following:

- Aircraft
- Appliances
- Athletic equipment
- Automobiles and other motor vehicles
- Bakeries
- Beverages; over 12-percent alcohol content
- Bicycles
- Boats
- Brooms or brushes
- Business machines
- Cameras and photo equipment
- Canvas or similar fabric
- Carpets and rugs (includes cleaning)
- Clothing
- Construction and agricultural machinery
- Disinfectants
- Dry cleaning and dyeing
- Electric generation plants
- Electronics
- Engines (including rebuilding)
- Food processing
- Furniture
- Hemp products
- Jute products
- Launderies
- Leather products
- Machinery
- Metals
- Millwork (sash & door)
- Motion pictures and television filming (without spectators)
- Musical instruments
- Optical goods
- Paper mills or products
- Photographic film
- Plastic products
- Printing or publishing
- Recreational vehicles
- Refuse incineration
- Shoes
- Soaps and detergents
- Textiles
- Tobacco
- Trailers
- Upholstering
- Wood; distillation
- Woodworking (cabinet)

306.3 Factory Industrial F-2 Low-hazard Occupancy. Factory industrial uses that involve the fabrication or manufacturing of noncombustible materials which during finishing, packing or processing do not involve a significant fire hazard.
shall be classified as F-2 occupancies and shall include, but not be limited to, the following:

- Beverages; up to and including 12-percent alcohol content
- Brick and masonry
- Ceramic products
- Foundries
- Glass products
- Gypsum
- Ice
- Metal products (fabrication and assembly)

SECTION 307
HIGH-HAZARD GROUP H

[F] 307.1 High-hazard Group H. High-hazard Group H occupancy includes, among others, the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those allowed in control areas constructed and located as required in Section 414. Hazardous uses are classified in Groups H-1, H-2, H-3, H-4 and H-5 and shall be in accordance with this section, the requirements of Section 415 and the International Fire Code.

Exceptions: The following shall not be classified in Group H, but shall be classified in the occupancy that they most nearly resemble:

1. Buildings and structures that contain not more than the maximum allowable quantities per control area of hazardous materials as shown in Tables 307.1(1) and 307.1(2), provided that such buildings are maintained in accordance with the International Fire Code.

2. Buildings utilizing control areas in accordance with Section 414.2 that contain not more than the maximum allowable quantities per control area of hazardous materials as shown in Tables 307.1(1) and 307.1(2).

3. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the International Fire Code.

4. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the International Fire Code.

5. Closed piping containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.

6. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment listed by an approved testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour fire barriers or 1-hour horizontal assemblies or both.

7. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).

8. Liquor stores and distributors without bulk storage.
9. Refrigeration systems.
10. The storage or utilization of materials for agricultural purposes on the premises.
11. Stationary batteries utilized for facility emergency power, uninterruptable power supply or telecommunication facilities, provided that the batteries are provided with safety venting caps and ventilation is provided in accordance with the International Mechanical Code.
12. Corrosives shall not include personal or household products in their original packaging used in retail display or commonly used building materials.
13. Buildings and structures occupied for aerosol storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the International Fire Code.
14. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the maximum allowable quantity per control area in Group M or S occupancies complying with Section 414.2.5.
15. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the International Fire Code.

307.1.1 Hazardous materials. Hazardous materials in any quantity shall conform to the requirements of this code, including Section 414, and the International Fire Code.

[F] 307.2 Definitions. The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

AEROSOL. A product that is dispensed from an aerosol container by a propellant.

Aerosol products shall be classified by means of the calculation of their chemical heats of combustion and shall be designated Level 1, 2 or 3.

Level 1 aerosol products. Those with a total chemical heat of combustion that is less than or equal to 8,600 British thermal units per pound (Btu/lb) (20 kJ/g).

Level 2 aerosol products. Those with a total chemical heat of combustion that is greater than 8,600 Btu/lb (20 kJ/g), but less than or equal to 13,000 Btu/lb (30 kJ/g).

Level 3 aerosol products. Those with a total chemical heat combustion that is greater than 13,000 Btu/lb (30 kJ/g).

AEROSOL CONTAINER. A metal can or a glass or plastic bottle designed to dispense an aerosol. Metal cans shall be limited to a maximum size of 33.8 fluid ounces (1,000 ml). Glass or plastic bottles shall be limited to a maximum size of 4 fluid ounces (118 ml).

BALED COTTON. A natural seed fiber wrapped in and secured with industry accepted materials, usually consisting of
burlap, woven polypropylene, polyethylene or cotton or sheet polyethylene, and secured with steel, synthetic or wire bands or wire; also includes liners (lint removed from the cottonseed) and mutes (residual materials from the ginning process).

**BALED COTTON, DENSELY PACKED.** Cotton made into baled bales with a packing density of at least 22 pounds per cubic foot (360 kg/m³), and dimensions complying with the following: a length of 55 inches (1397 ± 20 mm), a width of 21 inches (533.4 ± 20 mm) and a height of 27.6 to 35.4 inches (701 to 899 mm).

**BARRICADE.** A structure that consists of a combination of walls, floor and roof, which is designed to withstand the rapid release of energy in an explosion and which is fully confined, partially vented or fully vented; or other effective method of shielding from explosive materials by a natural or artificial barrier.

- **Artificial barricade.** An artificial mound or revetment a minimum thickness of 3 feet (914 mm).

- **Natural barricade.** Natural features of the ground, such as hills, or timber of sufficient density that the surrounding exposures that require protection cannot be seen from the magazine or building containing explosives when the trees are bare of leaves.

**BOILING POINT.** The temperature at which the vapor pressure of a liquid equals the atmospheric pressure of 14.7 pounds per square inch (psi) (101 kPa) gage or 760 mm of mercury. Where an accurate boiling point is unavailable for the material in question, or for mixtures which do not have a constant boiling point, for the purposes of this classification, the 20-percent evaporated point of a distillation performed in accordance with ASTM D 86 shall be used as the boiling point of the liquid.

**CLOSED SYSTEM.** The use of a solid or liquid hazardous material involving a closed vessel or system that remains closed during normal operations where vapors emitted by the product are not liberated outside of the vessel or system and the product is not exposed to the atmosphere during normal operations; and all uses of compressed gases. Examples of closed systems for solids and liquids include product conveyed through a piping system into a closed vessel, system or piece of equipment.

**COMBUSTIBLE DUST.** Finely divided solid material that is 420 microns or less in diameter and which, when dispersed in air in the proper proportions, could be ignited by a flame, spark or other source of ignition. Combustible dust will pass through a U.S. No. 40 standard sieve.

**COMBUSTIBLE FIBERS.** Readily ignitable and free-burning materials in a fibrous or shredded form, such as cocoa fiber, cloth, cotton, excelsior, hay, hemp, henequen, isle, jute, kapok, oakum, rags, sisal; Spanish moss, straw, tow, wastepaper; certain synthetic fibers or other like materials. This definition does not include densely packed baled cotton.

**COMBUSTIBLE LIQUID.** A liquid having a closed cup flash point at or above 100°F (38°C). Combustible liquids shall be subdivided as follows:

- **Class I.** Liquids having a closed cup flash point at or above 100°F (38°C) and below 140°F (60°C).
- **Class II.** Liquids having a closed cup flash point at or above 140°F (60°C) and below 200°F (93°C).
- **Class III.** Liquids having a closed cup flash point at or above 200°F (93°C).

The category of combustible liquids does not include compressed gases or cryogenic fluids.

**COMPRESSED GAS.** A material, or mixture of materials which:

1. Is a gas at 68°F (20°C) or less at 14.7 pounds per square inch atmosphere (psia) (101 kPa) of pressure; and
2. Has a boiling point of 68°F (20°C) or less at 14.7 psia (101 kPa) which is either liquefied, nonliquefied or in solution, except those gases which have no other health- or physical-hazard properties are not considered to be compressed until the pressure in the packaging exceeds 41 psia (282 kPa) at 68°F (20°C).

The states of a compressed gas are categorized as follows:

1. Nonliquefied compressed gases are gases, other than those in solution, which are in a packaging under the charged pressure and are entirely gaseous at a temperature of 68°F (20°C).
2. Liquefied compressed gases are gases that, in a packaging under the charged pressure, are partially liquid at a temperature of 68°F (20°C).
3. Compressed gases in solution are nonliquefied gases that are dissolved in a solvent.
4. Compressed gas mixtures consist of a mixture of two or more compressed gases contained in a packaging, the hazard properties of which are represented by the properties of the mixture as a whole.

**CONTROL AREA.** Spaces within a building where quantities of hazardous materials not exceeding the maximum allowable quantities per control area are stored, dispersed, used or handled. See also the definition of "Outdoor control area" in the International Fire Code.

**CORROSIVE.** A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the point of contact. A chemical shall be considered corrosive if, when tested on the intact skin of albino rabbits by the method described in DOTn 49 CFR, Part 173.137, such a chemical destroys or changes reversibly the structure of the tissue at the point of contact following an exposure period of 4 hours. This term does not refer to action on inanimate surfaces.

**CRYOGENIC FLUID.** A liquid having a boiling point lower than -150°F (-101°C) at 14.7 pounds per square inch atmosphere (psia) (an absolute pressure of 101 kPa).

**DAY ROX.** A portable magazine designed to hold explosive materials constructed in accordance with the requirements for a Type 3 magazine as defined and classified in Chapter 33 of the International Fire Code.
<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>CLASS</th>
<th>GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED</th>
<th>STORAGE&lt;sup&gt;a&lt;/sup&gt;</th>
<th>USE-CLOSED SYSTEMS&lt;sup&gt;b&lt;/sup&gt;</th>
<th>USE-OPEN SYSTEMS&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combustible liquid&lt;sup&gt;d,i&lt;/sup&gt;</td>
<td>II</td>
<td>H-2 or H-3</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>IIIA</td>
<td>H-2 or H-3</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>IIIB</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Combustible fiber</td>
<td></td>
<td>H-3</td>
<td>(100)</td>
<td>(100)</td>
<td>(20)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1,000)</td>
<td>(1,000)</td>
<td>(200)</td>
</tr>
<tr>
<td>Consumer fireworks (Class C, Common)</td>
<td>1.4G</td>
<td>H-3</td>
<td>125&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Cryogenics flammable</td>
<td>N/A</td>
<td>H-2</td>
<td>45&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Cryogenics, oxidizing</td>
<td>N/A</td>
<td>H-3</td>
<td>45&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Explosives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Division 1.1</td>
<td>H-1</td>
<td>1&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Division 1.2</td>
<td>H-1</td>
<td>1&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Division 1.3</td>
<td>H-1 or 2</td>
<td>5&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Division 1.4</td>
<td>H-3</td>
<td>50&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Division 1.4G</td>
<td>H-3</td>
<td>125&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Division 1.5</td>
<td>H-1</td>
<td>1&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Division 1.6</td>
<td>H-1</td>
<td>14&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Flammable gas</td>
<td></td>
<td>Gaseous, liquefied</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td>H-2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>30&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Flammable liquid&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1A</td>
<td>H-2 or H-3</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>1B and 1C</td>
<td>H-2 or H-3</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Combination flammable liquid (1A, 1B, 1C)</td>
<td>N/A</td>
<td>H-2 or H-3</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Flammable solid</td>
<td>N/A</td>
<td>H-3</td>
<td>125&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Organic peroxide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>UD</td>
<td>H-1</td>
<td>1&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>H-2</td>
<td>5&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>H-3</td>
<td>50&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>III</td>
<td>H-3</td>
<td>125&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>N/A</td>
<td>NL</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>V</td>
<td>N/A</td>
<td>NL</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Oxidizer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>H-1</td>
<td>1&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>3&lt;sup&gt;e&lt;/sup&gt;</td>
<td>H-2 or H-3</td>
<td>10&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>H-3</td>
<td>250&lt;sup&gt;e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>N/A</td>
<td>4,000&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Oxidizing gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cascous liquefied</td>
<td>H-3</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

(continued)
<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>CLASS</th>
<th>GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED</th>
<th>STORAGE&lt;sup&gt;b&lt;/sup&gt;</th>
<th>USE-CLOSED SYSTEMS&lt;sup&gt;c&lt;/sup&gt;</th>
<th>USE-OPEN SYSTEMS&lt;sup&gt;d&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Solid pounds (cubic feet)</td>
<td>Liquid gallons (pounds)</td>
<td>Gas (cubic feet at NTP)</td>
<td>Solid pounds (cubic feet)</td>
</tr>
<tr>
<td>Pyrophoric material</td>
<td>N/A</td>
<td>H-2</td>
<td>4&lt;sup&gt;e&lt;/sup&gt;</td>
<td>(40)&lt;sup&gt;f&lt;/sup&gt;</td>
<td>50&lt;sup&gt;g&lt;/sup&gt;</td>
</tr>
<tr>
<td>Unstable (reactive)</td>
<td>4</td>
<td>H-1</td>
<td>1&lt;sup&gt;g&lt;/sup&gt;</td>
<td>(1)&lt;sup&gt;g&lt;/sup&gt;</td>
<td>10&lt;sup&gt;e&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>H-1 or H-2</td>
<td>5&lt;sup&gt;e&lt;/sup&gt;</td>
<td>(5)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>50&lt;sup&gt;g&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>H-3</td>
<td>50&lt;sup&gt;e&lt;/sup&gt;</td>
<td>(50)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>250&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>N/A</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
</tr>
<tr>
<td>Water reactive</td>
<td>3</td>
<td>H-2</td>
<td>5&lt;sup&gt;d&lt;/sup&gt;</td>
<td>(5)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>H-3</td>
<td>50&lt;sup&gt;e&lt;/sup&gt;</td>
<td>(50)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>N/A</td>
<td>NL</td>
<td>NL</td>
<td>N/A</td>
</tr>
</tbody>
</table>

For SI: 1 cubic foot = 0.023 m<sup>3</sup>, 1 pound = 0.454 kg, 1 gallon = 3.785 L.
NL = Not Limited; N/A = Not Applicable; UD = Unclassified Detonable

a. For use of control areas, see Section 414.2.
b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
c. The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited provided the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics containing not more than 30 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.
e. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, day boxes, gas cabinets, exhausted enclosures or safety cans. Where Note d also applies, the increase for both notes shall be applied accumulatively.
f. The permitted quantities shall be limited in a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
g. Permitted only in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
h. Containing not more than the maximum allowable quantity per control area of Class IA, IB or IC flammable liquids.
i. Inside a building, the maximum capacity of a combustible liquid storage system that is connected to a fuel-oil piping system shall be 660 gallons provided such system complies with the International Fire Code.
j. Quantities in parenthesis indicate quantity limits in parenthesis at the head of each column.
k. A maximum quantity of 200 pounds of solid or 20 gallons of liquid Class 3 oxidizers is allowed when such materials are necessary for maintenance purposes, operation or sanitation of equipment. Storage containers and the manner of storage shall be approved.
l. Net weight of the pyrotechnic composition of the fireworks. Where the net weight of the pyrotechnic composition of the fireworks is not known, 25 percent of the gross weight of the fireworks, including packaging, shall be used.
m. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 2703.1.2 of the International Fire Code.

2. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 414.2.4, see Tables 414.2.5(1) and 414.2.5(2).

a. Densely packed baled cotton that complies with the packing requirements of ISO 8115 shall not be included in this material class.

p. The following shall not be included in determining the maximum allowable quantities:
1. Liquid or gaseous fuel in fuel tanks on vehicles.
2. Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with this code.
4. Liquid fuels in piping systems and fixed appliances regulated by the International Mechanical Code.
USE AND OCCUPANCY CLASSIFICATION

[F] TABLE 307.1(2)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIAL POSING A HEALTH HAZARD\(a, b, c, d\)

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>STORAGE(^a)</th>
<th>USE-CLOSED SYSTEMS(^d)</th>
<th>USE-OPEN SYSTEMS(^d)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Solid pounds(^e)</td>
<td>Liquid gallons (pounds)(^f)</td>
<td>Gas (cubic feet at NTP)(^g)</td>
</tr>
<tr>
<td>Corrosive</td>
<td>5,000</td>
<td>500</td>
<td>810(^h)</td>
</tr>
<tr>
<td>Highly toxic</td>
<td>10</td>
<td>(10)(^i)</td>
<td>20(^j)</td>
</tr>
<tr>
<td>Toxic</td>
<td>500</td>
<td>(500)(^l)</td>
<td>810(^m)</td>
</tr>
</tbody>
</table>

For SI:
1 cubic foot = 0.028 m\(^3\), 1 pound = 0.454 kg, 1 gallon = 3.785 L.

a. For use of control areas, see Section 414.2.
b. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics, containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solution not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
c. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 414.2.4, see Table 414.2.4(1).
d. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
e. Quantities shall be increased 100 percent in buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.
f. Where Note e also applies, the increase for both notes shall be applied accumulatively.
g. Quantities shall be increased 100 percent when stored in approved storage cabinets, gas cabinets or exhausted enclosures as specified in the International Fire Code. Where Note e also applies, the increase for both notes shall be applied accumulatively.
h. A single cylinder containing 150 pounds or less of anhydrous ammonia in a single control area in a nonsprinklered building shall be considered a maximum allowable quantity. Two cylinders, each containing 150 pounds or less in a single control area, shall be considered a maximum allowable quantity provided the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
i. Allowed only when stored in approved exhaust gas cabinets or exhausted enclosures as specified in the International Fire Code.
j. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.
k. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 2703.12 of the International Fire Code.

DEFLAGRATION. An exothermic reaction, such as the extremely rapid oxidation of a flammable dust or vapor in air, in which the reaction progresses through the unburned material at a rate less than the velocity of sound. A deflagration can have an explosive effect.

DETACHED BUILDING. A separate single-story building, without a basement or crawl space, used for the storage or use of hazardous materials and located an approved distance from all structures.

DETONATION. An exothermic reaction characterized by the presence of a shock wave in the material which establishes and maintains the reaction. The reaction zone progresses through the material at a rate greater than the velocity of sound. The principal heating mechanism is one of shock compression. Detonations have an explosive effect.

DISPENSING. The pouring or transferring of any material from a container, tank or similar vessel, whereby vapors, dusts, fumes, mists or gases are liberated to the atmosphere.

EXPLOSIVE. Any chemical compound, mixture or device, the primary or common purpose of which is to function by explosion. The term includes, but is not limited to, dynamite, black powder, pellet powder, initiating explosives, detonators, safety fuses, squibs, detonating cord, igniter cord, igniters and display fireworks, 1.3G (Class B, Special).

The term “explosive” includes any material determined to be within the scope of USC Title 18: Chapter 40 and also includes any material classified as an explosive other than consumer fireworks, 1.4G (Class C, Common) by the hazardous materials regulations of DOT in 49 CFR.

High explosive. Explosive material, such as dynamite, which can be caused to detonate by means of a No. 8 test blasting cap when unconfined.

Low explosive. Explosive material that will burn or deflagrate when ignited. It is characterized by a rate of reaction that is less than the speed of sound. Examples of low explosives include, but are not limited to, black powder; safety fuse; igniters; igniter cord; fuse lighters; fireworks, 1.3G (Class B, Special) and propellants, 1.3C.

Mass-detonating explosives. Division 1.1, 1.2 and 1.5 explosives alone or in combination, or loaded into various types of ammunition or containers, most of which can be expected to explode virtually instantaneously when a small portion is subjected to fire, severe concussion, impact, the impulse of an initiating agent or the effect of a considerable discharge of energy from without. Materials that react in this manner represent a mass explosion hazard. Such an explosive will normally cause severe structural damage to adjacent objects. Explosive propagation could occur immediately to other items of ammunition and explosives stored sufficiently close to and not adequately protected from the initially exploding pile with a time interval short enough so that two or more quantities must be considered as one for quantity-distance purposes.

UN/DOTn Class 1 explosives. The former classification system used by DOTn included the terms “high” and “low” explosives as defined herein. The following terms further define explosives under the current system applied by DOTn for all explosive materials defined as hazard Class 1 materials. Compatibility group letters are used in concert with the division to specify further limitations on each division noted (i.e., the letter G identifies the material as a pyrotechnic substance or article containing a pyrotechnic substance and similar materials).

Division 1.1. Explosives that have a mass explosion hazard. A mass explosion is one which affects almost the entire load instantaneously.

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Division 1.2. Explosives that have a projection hazard but not a mass explosion hazard.

Division 1.3. Explosives that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.

Division 1.4. Explosives that pose a minor explosion hazard. The explosive effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package.

Division 1.5. Very insensitive explosives. This division is comprised of substances that have a mass explosion hazard, but that are so insensitive there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport.

Division 1.6. Extremely insensitive articles which do not have a mass explosion hazard. This division is comprised of articles that contain only extremely insensitive detonating substances and which demonstrate a negligible probability of accidental initiation or propagation.

**Fireworks.** Any composition or device for the purpose of producing a visible or audible effect for entertainment purposes by combustion, deflagration or detonation that meets the definition of 1.4G fireworks or 1.3G fireworks as set forth herein.

**Fireworks, 1.3G.** (Formerly Class B, Special Fireworks.) Large fireworks devices, which are explosive materials, intended for use in fireworks displays and designed to produce audible or visible effects by combustion, deflagration or detonation. Such 1.3G fireworks include, but are not limited to, firecrackers containing more than 130 milligrams (2 grams) of explosive composition, aerial shells containing more than 40 grams of pyrotechnic composition, and other display pieces which exceed the limits for classification as 1.4G fireworks. Such 1.3G fireworks are also described as fireworks, UN0335 by the DOT.

**Fireworks, 1.4G.** (Formerly Class C, Common Fireworks.) Small fireworks devices containing restricted amounts of pyrotechnic composition designed primarily to produce visible or audible effects by combustion. Such 1.4G fireworks which comply with the construction, chemical composition and labeling regulations of the DOTs for fireworks, UN0356, and the U.S. Consumer Product Safety Commission (CPSC) as set forth in CPSC 16 CFR Parts 1500 and 1507, are not explosive materials for the purpose of this code.

**Flammable Gas.** A material that is a gas at 68°F (20°C) or less at 14.7 pounds per square inch atmospheric (psia) (101 kPa) of pressure [a material that has a boiling point of 68°F (20°C) or less at 14.7 psia (101 kPa)] which:

1. Is ignitable at 14.7 psia (101 kPa) when in a mixture of 13 percent or less by volume with air; or

2. Has a flammable range at 14.7 psia (101 kPa) with air of at least 12 percent, regardless of the lower limit.

The limits specified shall be determined at 14.7 psi (101 kPa) of pressure and a temperature of 68°F (20°C) in accordance with ASTM E 681.

**Flammable Liquefied Gas.** A liquefied compressed gas which, under a charged pressure, is partially liquid at a temperature of 68°F (20°C) and which is flammable.

**Flammable Liquid.** A liquid having a closed cup flash point below 100°F (38°C). Flammable liquids are further categorized into a group known as Class I liquids. The Class I category is subdivided as follows:

- **Class IA.** Liquids having a flash point below 73°F (23°C) and a boiling point below 100°F (38°C).
- **Class IB.** Liquids having a flash point below 73°F (23°C) and a boiling point at or above 100°F (38°C).
- **Class IC.** Liquids having a flash point at or above 73°F (23°C) and below 100°F (38°C).

The category of flammable liquids does not include compressed gases or cryogenic fluids.

**Flammable Material.** A material capable of being readily ignited from common sources of heat or at a temperature of 600°F (316°C) or less.

**Flammable Solid.** A solid, other than a blasting agent or explosive, that is capable of causing fire through friction, absorption or moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which has an ignition temperature below 212°F (100°C) or which burns so vigorously and persistently when ignited as to create a serious hazard. A chemical shall be considered a flammable solid as determined in accordance with the test method of CPSC 16 CFR, Part 1500.44, if it ignites and burns with a self-sustained flame at a rate greater than 0.1 inch (2.5 mm) per second along its major axis.

**Flashpoint.** The minimum temperature in degrees Fahrenheit at which a liquid will give off sufficient vapors to form an ignitable mixture with air near the surface or in the container, but will not sustain combustion. The flash point of a liquid shall be determined by appropriate test procedure and apparatus as specified in ASTM D 56, ASTM D 93 or ASTM D 3278.

**Handling.** The deliberate transport by any means to a point of storage or use.

**Hazardous Materials.** Those chemicals or substances that are physical hazards or health hazards as defined and classified in this section and the International Fire Code, whether the materials are in usable or waste condition.

**Health Hazard.** A classification of a chemical for which there is statistically significant evidence that acute or chronic health effects are capable of occurring in exposed persons. The term "health hazard" includes chemicals that are toxic or highly toxic, and corrosive.

**Highly Toxic.** A material which produces a lethal dose or lethal concentration that falls within any of the following categories:

1. A chemical that has a median lethal dose (LD₅₀) of 50 milligrams or less per kilogram of body weight when admin-
istered orally to albino rats weighing between 200 and 300 grams each.

2. A chemical that has a median lethal dose (LD₅₀) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.

3. A chemical that has a median lethal concentration (LCₐ₀) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume or dust, when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

Mixtures of these materials with ordinary materials, such as water, might not warrant classification as highly toxic. While this system is basically simple in application, any hazard evaluation that is required for the precise categorization of this type of material shall be performed by experienced, technically competent persons.

INCOMPATIBLE MATERIALS. Materials that, when mixed, have the potential to react in a manner that generates heat, fumes, gases or byproducts which are hazardous to life or property.

OPEN SYSTEM. The use of a solid or liquid hazardous material involving a vessel or system that is continuously open to the atmosphere during normal operations and where vapors are liberated, or the product is exposed to the atmosphere during normal operations. Examples of open systems for solids and liquids include dispensing from or into open beakers or containers, dip tank and plating tank operations.

OPERATING BUILDING. A building occupied in conjunction with the manufacture, transportation or use of explosive materials. Operating buildings are separated from one another with the use of intraplant or intraline distances.

ORGANIC PEROXIDE. An organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms have been replaced by an organic radical. Organic peroxides can pose an explosion hazard (detonation or deflagration) or they can be shock sensitive. They can also decompose into various unstable compounds over an extended period of time.

Class I. Those formulations that are capable of deflagration but not detonation.

Class II. Those formulations that burn very rapidly and that pose a moderate reactivity hazard.

Class III. Those formulations that burn rapidly and that pose a moderate reactivity hazard.

Class IV. Those formulations that burn in the same manner as ordinary combustibles and that pose a minimal reactivity hazard.

Class V. Those formulations that burn with less intensity than ordinary combustibles or do not sustain combustion and that pose no reactivity hazard.

Unclassified detenable. Organic peroxides that are capable of detonation. These peroxides pose an extremely high explosion hazard through rapid explosive decomposition.

OXIDIZER. A material that readily yields oxygen or other oxidizing gas, or that readily reacts to promote or initiate combustion of combustible materials. Examples of other oxidizing gases include bromine, chlorine and fluorine.

Class 4. An oxidizer that can undergo an explosive reaction due to contamination or exposure to thermal or physical shock. Additionally, the oxidizer will enhance the burning rate and can cause spontaneous ignition of combustibles.

Class 3. An oxidizer that will cause a severe increase in the burning rate of combustible materials with which it comes in contact or that will undergo vigorous self-sustained decomposition due to contamination or exposure to heat.

Class 2. An oxidizer that will cause a moderate increase in the burning rate or that causes spontaneous ignition of combustible materials with which it comes in contact.

Class 1. An oxidizer whose primary hazard is that it slightly increases the burning rate but which does not cause spontaneous ignition when it comes in contact with combustible materials.

OXIDIZING GAS. A gas that can support and accelerate combustion of other materials.

PHYSICAL HAZARD. A chemical for which there is evidence that it is a combustible liquid, compressed gas, cryogenic, explosive, flammable gas, flammable liquid, flammable solid, organic peroxide, oxidizer, pyrophoric or unstable (reactive) or water-reactive material.

PYROPHORIC. A chemical with an autoignition temperature in air, at or below a temperature of 130°F (54.4°C).

PYROTECHNIC COMPOSITION. A chemical mixture that produces visible light displays or sounds through a self-propagating, heat-releasing chemical reaction which is initiated by ignition.

TOXIC. A chemical falling within any of the following categories:

1. A chemical that has a median lethal dose (LD₅₀) of more than 50 milligrams per kilogram, but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

2. A chemical that has a median lethal dose (LD₅₀) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.

3. A chemical that has a median lethal concentration (LCₐ₀) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than 2 milligrams per liter but not more than 20 milligrams per liter of mist, fume or dust, when administered by continuous inhalation for 1 hour (or less if death
occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

UNSTABLE (REACTIVE) MATERIAL. A material, other than an explosive, which in the pure state or as commercially produced, will vigorously polymerize, decompose, condense or become self-reactive and undergo other violent chemical changes, including explosion, when exposed to heat, friction or shock, or in the absence of an inhibitor, or in the presence of contaminants, or in contact with incompatible materials. Unstable (reactive) materials are subdivided as follows:

Class 4. Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. This class includes materials that are sensitive to mechanical or localized thermal shock at normal temperatures and pressures.

Class 3. Materials that in themselves are capable of detonation or of explosive decomposition or explosive reaction but which require a strong initiating source or which must be heated under confinement before initiation. This class includes materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures.

Class 2. Materials that in themselves are normally unstable and readily undergo violent chemical change but do not detonate. This class includes materials that can undergo chemical change with rapid release of energy at normal temperatures and pressures, and that can undergo violent chemical change at elevated temperatures and pressures.

Class 1. Materials that in themselves are normally stable but which can become unstable at elevated temperatures and pressure.

WATER-REACTIVE MATERIAL. A material that explodes; violently reacts; produces flammable, toxic or other hazardous gases; or evolves enough heat to cause autoignition or ignition of combustibles upon exposure to water or moisture. Water-reactive materials are subdivided as follows:

Class 3. Materials that react explosively with water without requiring heat or confinement.

Class 2. Materials that react violently with water or have the ability to boil water. Materials that produce flammable, toxic or other hazardous gases or evolve enough heat to cause autoignition or ignition of combustibles upon exposure to water or moisture.

Class 1. Materials that react with water with some release of energy, but not violently.

[F] 307.3 High-hazard Group H-1. Buildings and structures containing materials that pose a detonation hazard shall be classified as Group H-1. Such materials shall include, but not be limited to, the following:

Explosives:
Division 1.1
Division 1.2
Division 1.3

Exception: Materials that are used and maintained in a form where either confinement or configuration will not elevate the hazard from a mass fire to mass explosion hazard shall be allowed in H-2 occupancies.

Division 1.4

Exception: Articles, including articles packaged for shipment, that are not regulated as an explosive under Bureau of Alcohol, Tobacco and Firearms regulations, or unpackaged articles used in process operations that do not propagate a detonation or deflagration between articles shall be allowed in H-3 occupancies.

Division 1.5
Division 1.6

Organic peroxides, unclassified detonable Oxidizers, Class 4
Unstable (reactive) materials, Class 3 detonable and Class 4
Detonable pyrophoric materials

[F] 307.4 High-hazard Group H-2. Buildings and structures containing materials that pose a deflagration hazard or a hazard from accelerated burning shall be classified as Group H-2. Such materials shall include, but not be limited to, the following:

Class I, II or IIIA flammable or combustible liquids which are used or stored in normally open containers or systems, or in closed containers or systems pressurized at more than 15 psi (103.4 kPa) gage.

Combustible dusts
Cryogenic fluids, flammable
Flammable gases
Organic peroxides, Class I
Oxidizers, Class 3, that are used or stored in normally open containers or systems, or in closed containers or systems pressurized at more than 15 psi (103 kPa) gage
Pyrophoric liquids, solids and gases, non-detonable
Unstable (reactive) materials, Class 3, non-detonable
Water-reactive materials, Class 3

[F] 307.5 High-hazard Group H-3. Buildings and structures containing materials that readily support combustion or that pose a physical hazard shall be classified as Group H-3. Such materials shall include, but not be limited to, the following:

Class I, II or IIIA flammable or combustible liquids that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103.4 kPa) or less
Combustible fibers, other than densely packed baled cotton
Consumer fireworks, 1.4G (Class C, Common)
Cryogenic fluids, oxidizing
Flammable solids
Organic peroxides, Class II and III
Oxidizers, Class 2
Oxidizers, Class 3, that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103 kPa) or less
Oxidizing gases
Unstable (reactive) materials, Class 2
Water-reactive materials, Class 2
Comm 62.0307 Pyrophoric materials. This is a department informational note to be used under IBC section 307.4:
Note: See ch. Comm 14 for additional requirements for pyrophoric materials.
[F] 307.6 High-hazard Group H-4. Buildings and structures which contain materials that are health hazards shall be classified as Group H-4. Such materials shall include, but not be limited to, the following:

- Corrosives
- Highly toxic materials
- Toxic materials

[F] 307.7 High-hazard Group H-5 structures. Semiconductor fabrication facilities and comparable research and development areas in which hazardous production materials (HPM) are used and the aggregate quantity of materials is in excess of those listed in Tables 307.1(1) and 307.1(2) shall be classified as Group H-5. Such facilities and areas shall be designed and constructed in accordance with Section 415.8.

[F] 307.8 Multiple hazards. Buildings and structures containing a material or materials representing hazards that are classified in one or more of Groups H-1, H-2, H-3 and H-4 shall conform to the code requirements for each of the occupancies so classified.

SECTION 308
INSTITUTIONAL GROUP I

308.1 Institutional Group I. Institutional Group I occupancy includes, among others, the use of a building or structure, or a portion thereof, in which people are cared for or live in a supervised environment, having physical limitations because of health or age are harbored for medical treatment or other care or treatment, or in which people are detained for penal or correctional purposes or in which the liberty of the occupants is restricted. Institutional occupancies shall be classified as Group I-1, I-2, I-3 or I-4.

308.2 Group I-1. This occupancy shall include buildings, structures or parts thereof housing more than 16 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:

- Residential board and care facilities
- Assisted living facilities
- Halfway houses
- Group homes
- Congregate care facilities
- Social rehabilitation facilities
- Alcohol and drug centers
- Convalescent facilities

A facility such as the above with five or fewer persons shall be classified as a Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2. A facility such as above, housing at least six and not more than 16 persons, shall be classified as Group R-4.

308.3 Group I-2. This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing or custodial care on a 24-hour basis for more than five persons who are not capable of self-preservation. This group shall include, but not be limited to, the following:

- Hospitals
- Nursing homes (both intermediate care facilities and skilled nursing facilities)
- Mental hospitals
- Detoxification facilities

A facility such as the above with five or fewer persons shall be classified as Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2.

308.3.1 Child care facility. A child care facility that provides care on a 24-hour basis to more than five children 2½ years of age or less shall be classified as Group I-2.

308.4 Group I-3. This occupancy shall include buildings and structures that are inhabited by more than five persons who are under restraint or security. An I-3 facility is occupied by persons who are generally incapable of self-preservation due to security measures not under the occupants' control. This group shall include, but not be limited to, the following:

- Prisons
- Jails
- Reformatories
- Detention centers
- Correctional centers
- Prerelease centers

Buildings of Group I-3 shall be classified as one of the occupancy conditions indicated in Sections 308.4.1 through 308.4.5 (see Section 408.1).

308.4.1 Condition 1. This occupancy condition shall include buildings in which free movement is allowed from sleeping areas, and other spaces where access or occupancy is permitted, to the exterior via means of egress without restraint. A Condition 1 facility is permitted to be constructed as Group R.

308.4.2 Condition 2. This occupancy condition shall include buildings in which free movement is allowed from sleeping areas and any other occupied smoke compartment to one or more other smoke compartments. Egress to the exterior is impeded by locked exits.

308.4.3 Condition 3. This occupancy condition shall include buildings in which free movement is allowed within individual smoke compartments, such as within a residential unit comprised of individual sleeping units and group activity spaces, where egress is impeded by remote-controlled release of means of egress from such a smoke compartment to another smoke compartment.

308.4.4 Condition 4. This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Remote-controlled release is provided to permit movement from sleeping units, activity spaces and other occupied areas within the smoke compartment to other smoke compartments.

308.4.5 Condition 5. This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Staff-controlled manual release is provided to permit movement from sleeping units, activity spaces and other occupied areas within the smoke compartment to other smoke compartments.
308.5 Group I-4, day care facilities. This group shall include buildings and structures occupied by persons of any age who receive custodial care for less than 24 hours by individuals other than parents or guardians, relatives by blood, marriage or adoption, and in a place other than the home of the person cared for. A facility such as the above with five or fewer persons shall be classified as a Group R-3 or shall comply with the *International Residential Code* in accordance with Section 101.2. Places of worship during religious functions are not included.

308.5.1 Adult care facility. A facility that provides accommodations for less than 24 hours for more than five unrelated adults and provides supervision and personal care services shall be classified as Group I-4.

*Exception:* A facility where occupants are capable of responding to an emergency situation without physical assistance from the staff shall be classified as Group A-3.

308.5.2 Child care facility. A facility that provides supervision and personal care on less than a 24-hour basis for more than five children 2 1/2 years of age or less shall be classified as Group I-4.

*Exception:* A child day care facility that provides care for more than five but no more than 100 children 2 1/2 years or less of age, when the rooms where such children care for are located on the level of exit discharge and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.

**SECTION 309**
**MERCANTILE GROUP M**

309.1 Mercantile Group M. Mercantile Group M occupancy includes, among others, buildings and structures or a portion thereof, for the display and sale of merchandise, and involves stocks of goods, wares or merchandise incidental to such purposes and accessible to the public. Mercantile occupancies shall include, but not be limited to, the following:

- Department stores
- Drug stores
- Markets
- Motor fuel-dispensing facilities
- Retail or wholesale stores
- Sales rooms

309.2 Quantity of hazardous materials. The aggregate quantity of nonflammable solid and nonflammable or noncombustible liquid hazardous materials stored or displayed in a single control area of a Group M occupancy shall not exceed the quantities in Table 414.2.4(1).

**SECTION 310**
**RESIDENTIAL GROUP R**

310.1 Residential Group R. Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the *International Residential Code* in accordance with Section 101.2. Residential occupancies shall include the following:

**R-1** Residential occupancies containing sleeping units where the occupants are primarily transient in nature, including:

- Boarding houses (transient)
- Hotels (transient)
- Motels (transient)

**R-2** Residential occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, including:

- Apartment houses
- Boarding houses (not transient)
- Convents
- Dormitories
- Fraternities and sororities
- Hotels (nontransient)
- Monasteries
- Motels (nontransient)
- Vacation timeshare properties

  Congregate living facilities with 16 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

**R-3** Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

- Buildings that do not contain more than two dwelling units.
- Adult facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.
- Child care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.
- Congregate living facilities with 16 or fewer persons.

  Adult and child care facilities that are within a single-family home are permitted to comply with the *International Residential Code*.

**R-4** Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living facilities including more than five but not more than 16 occupants, excluding staff.

  Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code, or shall comply with the *International Residential Code*.

310.2 Definitions. The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

**BOARDING HOUSE.** A building arranged or used for lodging for compensation, with or without meals, and not occupied as a single-family unit.
Comm 62.0310 Use and occupancy classification. This is a department informational note to be used under IBC section 310.2:

Note: See s. Comm 61.02 Notes for statutory definitions of adult family home and community-based residential facility. See s. Comm 61.04 for definitions of dwelling unit and multifamily dwelling.
CONGREGATE LIVING FACILITIES. A building or part thereof that contains sleeping units where residents share bathroom and/or kitchen facilities.

DORMITORY. A space in a building where group sleeping accommodations are provided in one room, or in a series of closely associated rooms, for persons not members of the same family group, under joint occupancy and single management, as in college dormitories or fraternity houses.

PERSONAL CARE SERVICE. The care of residents who do not require chronic or convalescent medical or nursing care. Personal care involves responsibility for the safety of the resident while inside the building.

RESIDENTIAL CARE/ASSISTED LIVING FACILITIES. A building or part thereof housing persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This classification shall include, but not be limited to, the following: residential board and care facilities, assisted living facilities, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug abuse centers and convalescent facilities.

TRANSIENT. Occupancy of a dwelling unit or sleeping unit for not more than 30 days.

SECTION 311
STORAGE GROUP S

311.1 Storage Group S. Storage Group S occupancy includes, among others, the use of a building or structure, or a portion thereof, for storage that is not classified as a hazardous occupancy.

311.2 Moderate-hazard storage, Group S-1. Buildings occupied for storage uses that are not classified as Group S-2, including, but not limited to, storage of the following:

- Aerosols, Levels 2 and 3
- Aircraft repair hangar
- Bags: cloth, burlap and paper
- Bamboo and rattan
- Baskets
- Belting: canvas and leather
- Books and paper in rolls or packs
- Boots and shoes
- Buttons, including cloth covered, pearl or bone
- Cardboard and cardboard boxes
- Clothing, woolen wearing apparel
- Cordage
- Dry boat storage (indoor)
- Furniture
- Furs
- Glues, mucilage, pastes and size
- Grains
- Horns and combs, other than celluloid
- Leather
- Linoleum
- Lumber
- Motor vehicle repair garages complying with the maximum allowable quantities of hazardous materials listed in Table 307.1(1) (see Section 406.6)
- Photo engravings
- Resilient flooring
- Silks
- Soaps
- Sugar
- Tires, bulk storage of
- Tobacco, cigars, cigarettes and snuff
- Upholstery and mattresses
- Wax candles

311.3 Low-hazard storage, Group S-2. Includes, among others, buildings used for the storage of noncombustible materials such as products on wood pallets or in paper cartons with or without single thickness divisions; or in paper wrappings. Such products are permitted to have a negligible amount of plastic trim, such as knobs, handles or film wrapping. Storage uses shall include, but not be limited to, storage of the following:

- Aircraft hangar
- Asbestos
- Beverages up to and including 12-percent alcohol in metal, glass or ceramic containers
- Cement in bags
- Chalk and crayons
- Dairy products in nonwaxed coated paper containers
- Dry cell batteries
- Electrical coils
- Electrical motors
- Empty cans
- Food products
- Foods in noncombustible containers
- Fresh fruits and vegetables in nonplastic trays or containers
- Frozen foods
- Glass
- Glass bottles, empty or filled with noncombustible liquids
- Gypsum board
- Inert pigments
- Ivory
- Meats
- Metal cabinets
- Metal desks with plastic tops and trim
- Metal parts
- Metals
- Mirrors
- Oil-filled and other types of distribution transformers
- Parking garages, open or enclosed
- Porcelain and pottery
- Stoves
- Talc and soapstones
- Washers and dryers

SECTION 312
UTILITY AND MISCELLANEOUS GROUP U

312.1 General. Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with
the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:

- Agricultural buildings
- Aircraft hangars, accessory to a one- or two-family residence (see Section 412.3)
- Barns
- Carports
- Fences more than 6 feet (1829 mm) high
- Grain silos, accessory to a residential occupancy
- Greenhouses
- Livestock shelters
- Private garages
- Retaining walls
- Sheds
- Stables
- Tanks
- Towers
### 1. Type of Submittal or Service Requested
- New
- Alteration – Level: [ ] 1 [ ] 2 [ ] 3
- Addition/Alteration-Level: [ ] 1 [ ] 2 [ ] 3
- Approval Extension
- Revision
- Feasibility/Feasibility Plans Only
- Repair/Construction Plans Only
- Permit to Start
- Follow Up of a Denial Within 60 Days
- Preliminary Consultation (contact reviewer before scheduling or submitting)
- Structural Framework – Shell Only
- Multiple Buildings (see box 5)

#### a. Number of Buildings

#### b. Objects Submitted for Review as Current Request (check all that apply)
- Building
- HVAC
- Emergency Egress Lighting
- Energy Conservation Lighting
- Fire Suppression (see box 7)
- Fire Detection/Alarm (see box 7)
- Other Projects (Sandstone from above)
- Blasting
- Canopy
- Kitchen Exhaust Hood
- Manned Construction
- Rack Supported Storage Building
- Elevated Pedestrian Access

#### c. Structural Component Plan(e) which accompany this current plan submittal (check all that apply):
- Roof Truss
- Floor Truss
- Steel Glider
- Laminated Wood

### 2. Occupancy Type

- Major Use – Check Use with the Greatest Floor Area

#### a. Additional Non-Accessory Occupancies – Circle All that Apply
- A Assembly
- B Business/Office
- C Educational
- F Factory/Industrial
- H Hazardous
- I Institutional/Daycare/CB
- M Mercantile
- R Residential
- S Storage
- U Utility/Industrial

### 3. Construction Information

- Construction Class – Circle One
- A
- B
- C
- D
- E
- F
- G
- H

- Area (project area, include all levels):

- If different, Heated/Unheated Area:

- Sprinkler/Detector Protection Area:

- Number of Floor Levels:

- Total Building Volume < 50,000 C.F.: Yes No

- Seismic Review Threshold (circle one)

### 4. Project Information – Fill in all known information

- Site Information

- Project/Property Name
- Tenant name or building designation
- Previous Tenant Name
- Number & Street
- City
- Village: Town:

- County

- City
- State
- Zip+4

- Phone Number (area code)
- Fax
- E-Mail

- Other applicable

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### 5. Identical Buildings (NOTE: Complete a separate application for each non-identical building)

- Building/Facility Name/Designation
- Building/Facility Address

- Add Addl Sheets if Needed

### 6. After plans are reviewed, please; (check all that apply) *Refers to customer number from below

- Call Customer 1, 2, 3, 4 (circle number)*
- Mail plans to customer 1, 2, 3, 4 (circle number)*
- Hold plans for pickup by designer-designated agent

- Designer Information (Customer 1)

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- Zip+4

- Phone Number (area code)
- Fax
- E-Mail

### Other (Customer 4)

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- Phone Number (area code)
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- Designer Information (Customer 2)

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- Phone Number (area code)
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- Designer Information (Customer 3)

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- Company Name
- Address
- City
- State
- Zip+4

- Phone Number (area code)
- Fax
- E-Mail
7. Fire Protection
Fire suppression and alarm plans are required to be submitted for certain occupancies – see Table Comm 61.30-3. When required, the plans for fire sprinkler (except for MPP systems – see below), fire detection, and fire alarm must be submitted to the Waukesha office. Please include the original building construction number on the second line of page 1, upper right hand box. Do not submit fire suppression or fire alarm plans together with building or HVAC plans unless they are scheduled for the Waukesha office. Submit plans for multi-purpose piping (MPP) systems as part of your plumbing plan submittal using the plumbing plan application, SBD-8154.

Check system type as applicable. All plans must also include this information to determine allowable Bldg Area / HEIGHTS

FIRE SUSSION

FIRE ALARM

( ) Complete ( ) Partial ( ) None

Type: ( ) Automatic Deterioration

( ) Manual Alarm

( ) Central Station

( ) Remote Supervision

( ) Proprietary Supervision

( ) Protected Premises

NFPA Fire Suppression Standards used

( ) Anti-Freeze ( ) Manual Wet

( ) (11) (11A) (12) (13) (13R)

( ) 12D ( ) 12D - MPP ( ) 14 ( ) 15

( ) 16 ( ) 17 ( ) 17R ( ) 17A ( ) 20

8. Other Potential Plan Submittals Required For A Project?
• Contact SBD for individual submittal requirements for all of the following:
  - Petition for Variance – Submit form SBD-9890
  - Building and private sewage systems under chapters Comm 81-85
  - Elevators or Escalators under chapter Comm 18
  - Swimming Pools or other Aquatic Centers within a Commercial/ Public Facility under chapter Comm 90
  - There is no state electrical review under chapter Comm 16
  - Department of Health enforces Building Code Requirements, including Plan Review for Hospitals and Nursing Homes. Daycare facilities must meet building codes prior to their licensing.
  - For licensing of hotels, motels, restaurants, pools, Campgrounds and Bed & Breakfast establishments contact the WI Environmental Sanitation Section at (608) 266-2036.
  - The Wisconsin Permit Center at 1-800-435-7237 may be able to help you with other state permit requirements.

Note: Be aware that State Plan Review & Approval is separate from Local Permits. Always check with the local municipality and county for their requirements.

9. Required Signatures

a) SUPERVISING PROFESSIONALS If building will be 50,000 cu ft or greater (Comm 61.40) I have been retained by the owner as the supervising professional per Comm 61.40 for the performance of the supervision of reasonable on-site observations to determine if the construction is in substantial compliance with the approved plans and specifications. Upon completion of construction, I will file a written statement with the Department and municipality certifying that, to the best of my knowledge and belief, construction has been performed in substantial compliance with the approved plans and specifications. In the event that I am no longer associated with this project I will file a compliance statement (SBD-8720) notifying the Department as such and indicating the current status of compliance.

Signature: ____________________________
Print: ____________________________

( ) Building ( ) HVAC Date: ____________________________

NOTE: Building Supervising Professionals is also responsible for supervision of the Lightning & Fire Suppression / Alarm Installations (if Applicable)

b) COMPONENT SUBMITTAL The Department requires that the project designer review individual component submittals for compliance with the general design concept. The project designer, and department, will rely on the seal of the component designers for compliance with the codes as they apply to their design.

Original Signature of Building Designer: ____________________________
Date Signed: ____________________________
Name of Component Fabricator: ____________________________

(c) Optional Service - Permission to start requested – (Be sure to check box under Building Submittal Type on front page)

( ) As the owner, I request to begin footing and foundation work PRIOR to plan review approval. I agree to make any changes required after plans have been reviewed, and to remove or replace any non-code complying constructions. I will not permit construction above the foundation until approved plans are on site.

(Additional $75.00 Fee per building) Request is for the following buildings:

Owner's Signature: ____________________________
Date: ____________________________

(d) ( ) Invoice Designer, who will be personally responsible for payment.
Designer Signature: ____________________________

10. Statements of Owners and Designer

a) OWNERS Statement The owner indicated on page 1 requests that plans be reviewed for compliance with the code requirements set forth in Chapters Comm 60 to 66 of the department. The owner recognizes responsibility for compliance with all the code requirements and any conditions of approval. If a building is 50,000 cubic feet in total volume or greater, plans are required to be prepared, signed, sealed and dated by a Wisconsin registered engineer or architect [Comm 81.31]. Signatures and seals affixed to the plans shall be original.

b) DESIGNERS Statement (Comm 61.20, 61.31[1], and 61.40) The designer indicated on page 1 of this form is responsible for preparing or supervising the preparation of the plans to the best of his/her knowledge to comply with the applicable codes of the Division of Safety & Buildings for this submittal. If a building, following construction of this project, contains more than 50,000 cubic feet in volume, plans are required to be prepared, signed, sealed and dated by a Wisconsin registered engineer, architect, or designer [Comm 61.31[1]]. Signatures and seals affixed to the plans shall be original. Lighting plans may instead be designed & submitted by the master electrician installing the system.
11. Fee Calculation Instructions  
**FEE SCHEDULE SUMMARY: WISCONSIN BUILDING CODE**  
Calculate appropriate fee on page 4 and enter total on Page 4.

I. **Building, heating and ventilation, fire alarm and suppression plans.** Fees relating to the submittal of all building and heating and ventilation plans (new, addition, alteration) and fire alarm and fire suppression plans shall be computed on the basis of the total gross floor area of each building, area of addition or area of alteration and shall be determined in accordance with Table Comm 2.31-1 or Table 2.31-2.

**Note:** Comm 2 provides for a partial fee refund if a plan action has not been taken within 15 days of receipt of all required information.

### Table 2.31-1  
Plan Review Fees for  
Buildings Not Located in Municipalities That Perform Inspections as an agent of the Division of Safety & Buildings

<table>
<thead>
<tr>
<th>Area (Square Feet)</th>
<th>Building Plans</th>
<th>HVAC Plans</th>
<th>Fire Alarm System Plans</th>
<th>Fire Suppression System Plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2,500</td>
<td>$300</td>
<td>$180</td>
<td>$50</td>
<td>$50</td>
</tr>
<tr>
<td>2,500 - 5,000</td>
<td>350</td>
<td>250</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>5,001 - 10,000</td>
<td>600</td>
<td>350</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>10,001 - 20,000</td>
<td>800</td>
<td>450</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>20,001 - 30,000</td>
<td>1,200</td>
<td>600</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>30,001 - 40,000</td>
<td>1,600</td>
<td>900</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>40,001 - 60,000</td>
<td>2,100</td>
<td>1,200</td>
<td>550</td>
<td>550</td>
</tr>
<tr>
<td>50,001 - 75,000</td>
<td>2,900</td>
<td>1,600</td>
<td>800</td>
<td>800</td>
</tr>
<tr>
<td>75,001 - 100,000</td>
<td>3,600</td>
<td>2,200</td>
<td>1,100</td>
<td>1,100</td>
</tr>
<tr>
<td>100,001 - 200,000</td>
<td>6,000</td>
<td>2,900</td>
<td>1,400</td>
<td>1,400</td>
</tr>
<tr>
<td>200,001 - 300,000</td>
<td>10,600</td>
<td>6,700</td>
<td>3,300</td>
<td>3,300</td>
</tr>
<tr>
<td>300,001 - 400,000</td>
<td>15,500</td>
<td>9,800</td>
<td>4,800</td>
<td>4,800</td>
</tr>
<tr>
<td>400,001 - 500,000</td>
<td>18,500</td>
<td>12,000</td>
<td>6,300</td>
<td>6,300</td>
</tr>
<tr>
<td>Over 500,000</td>
<td>20,000</td>
<td>13,500</td>
<td>7,100</td>
<td>7,100</td>
</tr>
</tbody>
</table>

### Table 2.31-2  
Plan Review Fees for  
Buildings Located in Municipalities That Perform Inspections as an agent of the Division of Safety & Buildings

This table may be utilized for projects in municipalities that are delegated to perform inspections of the object type(s) that you are submitting as a certified municipality and/or agent of the Department. Reduced fees do not apply to state owned buildings. Check our website home page at [http://dpsn.wi.gov/sbySB-CommBldgsDeleMunis.html](http://dpsn.wi.gov/sbySB-CommBldgsDeleMunis.html), or call 608-266-3151 for the current list.

<table>
<thead>
<tr>
<th>Area (Square Feet)</th>
<th>Building Plans</th>
<th>HVAC Plans</th>
<th>Fire Alarm System Plans</th>
<th>Fire Suppression System Plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2,500</td>
<td>$250</td>
<td>$150</td>
<td>$30</td>
<td>$30</td>
</tr>
<tr>
<td>2,501 - 5,000</td>
<td>300</td>
<td>200</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>5,001 - 10,000</td>
<td>500</td>
<td>300</td>
<td>100</td>
<td>100</td>
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<tr>
<td>10,001 - 20,000</td>
<td>700</td>
<td>400</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>20,001 - 30,000</td>
<td>1,100</td>
<td>500</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>30,001 - 40,000</td>
<td>1,400</td>
<td>800</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td>40,001 - 50,000</td>
<td>1,900</td>
<td>1,100</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>50,001 - 75,000</td>
<td>2,600</td>
<td>1,400</td>
<td>700</td>
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<tr>
<td>75,001 - 100,000</td>
<td>3,300</td>
<td>2,000</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>100,001 - 200,000</td>
<td>5,400</td>
<td>2,800</td>
<td>1,200</td>
<td>1,200</td>
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<tr>
<td>200,001 - 300,000</td>
<td>9,500</td>
<td>6,100</td>
<td>3,000</td>
<td>3,000</td>
</tr>
<tr>
<td>300,001 - 400,000</td>
<td>14,000</td>
<td>8,800</td>
<td>4,400</td>
<td>4,400</td>
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<tr>
<td>400,001 - 500,000</td>
<td>16,700</td>
<td>10,800</td>
<td>5,600</td>
<td>5,600</td>
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<tr>
<td>Over 500,000</td>
<td>18,000</td>
<td>12,100</td>
<td>6,400</td>
<td>6,400</td>
</tr>
</tbody>
</table>

**NOTES:**
A. **Plan entry fee of $100.00** shall be submitted with each submittal of plans to the department in addition to the plan review and inspection fees.

B. **Lighting Plans and Calculations** will be reviewed at no additional cost if submitted with the Building Plans. A fee of $75 will be charged if submitted with the HVAC Plans. A fee of $75 plus the $100 submittal fee (Total $175) is required for all Lighting Plans submitted separately.

C. A fee reduction may be taken for plans involving multiple identical buildings located on the same site and submitted at the same time: The fees for the submittal of building, heating and ventilation plans for the first building shall be determined in accordance with the appropriate Table 2.31-1 or 2.31-2 on the basis of the total gross area of one building. The fee for each of the remaining identical buildings shall be computed on the basis of an area of less than 2,500 square feet.
12. CALCULATION OF FEES

**Determine Project Area:** The area of a floor is the area bounded by the exterior surface of the building walls or the outside face of columns where there is no wall. Area includes all floor levels such as subbasements, basements, ground floors, mezzanines, industrial equipment platforms, balconies, lofts, decks, all stories and all roofed areas including porches and garages, except for cantilevered canopies on the building wall. Use the roof area for free standing canopies. Total project area is the summation of all floor areas that are part of this project. Attach a separate sheet if necessary for the calculations below:

<table>
<thead>
<tr>
<th>Floor Level (specify)</th>
<th>Length</th>
<th>X</th>
<th>Width</th>
<th>=</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>X</td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Project Area** =

**B. Determine Fee Table:** Determine the appropriate fee table based on the project location.

**C. Compute Total Fee**

- **Building Fee (from table)**: \[ ($\_\_\_\_\_.\_0) + [\text{No. of Addtl identical Bldgs}] \times \text{Min. Fee} \, $\_\_\_\_\_.\_0 = \_\_\_\_\_.\_0 \]
- **HVAC Fee (from table)**: \[ ($\_\_\_\_\_.\_0) + [\text{No. of Addtl identical Bldgs}] \times \text{Min. Fee} \, $\_\_\_\_\_.\_0 = \_\_\_\_\_.\_0 \]
- **Fire Alarm Fee (from table)**: \[ ($\_\_\_\_\_.\_0) + [\text{No. of Addtl identical Bldgs}] \times \text{Min. Fee} \, $\_\_\_\_\_.\_0 = \_\_\_\_\_.\_0 \]
- **Fire Suppression Fee (from table)**: \[ ($\_\_\_\_\_.\_0) + [\text{No. of Addtl identical Bldgs}] \times \text{Min. Fee} \, $\_\_\_\_\_.\_0 = \_\_\_\_\_.\_0 \]
- **Miscellaneous Fee**: \[ \text{No. of Buildings} \times X \, $25.00 \] (plans submitted within 8 months of denial, separate footing/foundation, independent bleacher plans more than 10 feet apart, etc)
- **Permission to Start Construction**: \[ \text{No. of Buildings} \times (\$75.00) = \_\_\_\_\_.\_0 \]
- **Revision to previously reviewed, but not denied, plans**: \[ \text{No. of Buildings} \times (\$75.00) = \_\_\_\_\_.\_0 \]
- **Additional number of plan sets**: \[ \text{In excess of 5} \times (\$25.00/set) = \_\_\_\_\_.\_0 \]
- **Components**

**MAKE CHECKS PAYABLE TO Division of Safety & Buildings. ATTACH CHECK TO PAGE 1**

**IF DESIGNER WISHES TO BE INVOICED, PLEASE COMPLETE BOX 9a ON PAGE 2**

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Fee</th>
</tr>
</thead>
</table>
- Other (Lighting plan separate from building plans $75) | $0.00 |
- Submittal Fee (required for each and every separate submittal of choices above) | $100.00 |
- Additional sets of approved plan sets requested after plan approval | $0.00 |
- Plan Approval Extension | $0.00 |

**Total Amount Due** = $_______

Revenue Code 7646


To schedule for other than revisions – do not use this form. Instead you can utilize our 24-hour web scheduling site located at [http://dpsw.wi.gov/sb/DB-CommBldgsPlanRevSched.html](http://dpsw.wi.gov/sb/DB-CommBldgsPlanRevSched.html) to reserve an appointment date while you are still working on the plans.

For Revision or Lighting appointments fax this form to 877-540-9172.

Web Scheduling allows you to view the next available appointment in any office and select an office that best fits your timeframe. You will receive a completed application form with an appointment date, transaction ID number, assigned reviewer, and required fees based on what you entered. Pre-scheduled plans must be received in the office of the appointment no later than 2 working days before the confirmed appointment.

Check our Website at [http://dpsw.wi.gov/sb/DB-DivPlanReview.html](http://dpsw.wi.gov/sb/DB-DivPlanReview.html). You may email technical code questions to bldgtech@commerce.state.wi.us or fax to (608) 283-7403.

<table>
<thead>
<tr>
<th>Madison S&amp;B</th>
<th>Hayward S&amp;B</th>
<th>LaCrosse Area S&amp;B</th>
<th>Green Bay S&amp;B</th>
<th>Waukesha S&amp;B</th>
</tr>
</thead>
<tbody>
<tr>
<td>201 W Washington Ave 53703</td>
<td>10541N Ranch Rd</td>
<td>3824 N Creekside La</td>
<td>2331 San Luis Place</td>
<td>141 NW Bartow St.</td>
</tr>
<tr>
<td>PO Box 7162</td>
<td>Hayward WI 54843</td>
<td>Holmen WI 54636</td>
<td>Green Bay WI 54304</td>
<td>4th Floor</td>
</tr>
<tr>
<td>Madison WI 53707-7162</td>
<td>715-634-4870</td>
<td>608-758-9334</td>
<td>920-492-5601</td>
<td>Waukesha WI 53188-3789</td>
</tr>
<tr>
<td>608-296-3151</td>
<td>Fax (for sending questions or additional info to reviewers)</td>
<td>Fax (for sending questions or additional info to reviewers)</td>
<td>Fax (for sending questions or additional info to reviewers)</td>
<td>262-546-8600</td>
</tr>
<tr>
<td>TTY Contact Through Relay</td>
<td>715-634-5150</td>
<td>608-758-9530</td>
<td>920-492-5604</td>
<td>Fax (for sending questions or additional info to reviewers)</td>
</tr>
<tr>
<td>Fax (for sending questions or additional info to reviewers)</td>
<td>808-267-9569</td>
<td>262-546-8614</td>
<td>262-546-8614</td>
<td>262-546-8614</td>
</tr>
</tbody>
</table>
IECC/Comm Chapter 63 - Lighting Index Sheet

Safety and Buildings Division of the Wisconsin Department of Safety and Professional Services

Project Name

Energy Efficiency Worksheets (Check-mark as appropriate)

☐ L-1 Index Sheet - Energy Conservation
☐ L-2 Mandatory Control Locations and Types
☐ L-3 Installed Interior Lighting Power
☐ L-4 Interior Lighting Power Allowance
☐ L-5 Exterior Lighting Power Worksheet

Supplemental Information:
Worksheet L-2 or similar information is required on the drawings or on a separate form for all lighting energy submittals.
Worksheets L-3 to L-5 are optional. The information may be included on the drawings, or as part of COMcheck* calculations.
Additional worksheets may be added if needed.

Per Comm 61.20(2), plans, specifications, and calculations require the original signature and seal of a Wisconsin Registered Architect, Professional Engineer, or Electrical Designer per Comm 61.31(1), or an original signature and credential identification number of the Master Electrician who designs and installs the system.

Please print name and telephone number of signer

Ink signature and either registration stamp or Master Electrician credential number

*COMcheck is a federal Department of Energy computer program that can be used to demonstrate energy conservation code compliance online. The program may be downloaded to individual computers. The most recent version of COMcheck must be used to demonstrate IECC compliance with lighting in Wisconsin.

COMcheck may be found at: http://www.energycodes.gov/comcheck/index.stm
### Mandatory Controls and Locations

- Light Reduction Controls – Code 63.0501(3) / IECC 505.2.2.1
- Automatic Lighting Shut-off Controls – IECC 505.2.2.2
- Daylit Area Controls – Code 63.0505(1) & (2)
- Exterior Controls – Photosensor or Astronomical Time Switch IECC 505.2.4

<table>
<thead>
<tr>
<th>Control Location (Name and/or Room #)</th>
<th>Space Controlled</th>
<th>Control Type (Occupancy Sensor, Dual Switches, Dimmer Switch, Photosensor, Time Clock, etc)</th>
<th>Control Purpose (Interior Lighting Control, Daylit Areas, Light Reduction, Automatic Shut-Off, Display, etc)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>
Proposed Interior Lighting Schedule

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixture ID</td>
<td>Luminaire Description including Fixture Type, Lamp, Wattage per lamp, Ballast*</td>
<td>Lamps/Fixture</td>
<td># of Fixture</td>
<td>Fixture Watts</td>
<td>D x E</td>
</tr>
</tbody>
</table>

TOTAL = Watts / 1000 = kW;
## Interior Lighting Power Allowance IECC 505.5.2 based on Area Method

Note: If using ASHRAE 90.1, allowable watts/sq ft will vary. Use Ashrae 90.1 - Table Section 9.6.2 and revise as needed depending on use of Area Method or Space-by-Space Method.

<table>
<thead>
<tr>
<th>Building Area Type</th>
<th>B Watts/ft²</th>
<th>C Area (sq. ft)</th>
<th>D Allowed Watts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive Facility</td>
<td>0.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convention Center</td>
<td>1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Court House</td>
<td>1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dining: Bar Lounge/Leisure</td>
<td>1.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dining: Cafeteria/Fast Food</td>
<td>1.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dining: Family</td>
<td>1.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dormitory 1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercise Center</td>
<td>1.0</td>
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<td></td>
</tr>
<tr>
<td>Gymnasium 1.1</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Healthcare-Clinic 1.0</td>
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<td></td>
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</tr>
<tr>
<td>Hospital 1.2</td>
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</tr>
<tr>
<td>Hotel 1.0</td>
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</tr>
<tr>
<td>Library 1.3</td>
<td></td>
<td></td>
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<tr>
<td>Manufacturing Facility</td>
<td>1.3</td>
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<tr>
<td>Motel 1.0</td>
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<tr>
<td>Motion Picture Facility</td>
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<tr>
<td>Multi-Family 0.7</td>
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<tr>
<td>Museum 1.1</td>
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<td>Office 1.0</td>
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<tr>
<td>Parking Garage</td>
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<td>Penitentiary 1.0</td>
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</tr>
<tr>
<td>Performing Arts Theater</td>
<td>1.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Police/Fire Station</td>
<td>1.0</td>
<td></td>
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<tr>
<td>Post Office</td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious Building</td>
<td>1.3</td>
<td></td>
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</tr>
<tr>
<td>Retail 1.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail Display(floor area)</td>
<td>1.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail Display(display case/shelf area)</td>
<td>3.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School/University 1.2</td>
<td></td>
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<tr>
<td>Sports Arena</td>
<td>1.1</td>
<td></td>
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<tr>
<td>Town Hall</td>
<td>1.1</td>
<td></td>
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<tr>
<td>Transportation 1.0</td>
<td></td>
<td></td>
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<tr>
<td>Warehouse 0.8</td>
<td></td>
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<tr>
<td>Workshop 1.4</td>
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</tbody>
</table>

**TOTALS**

Ft² Area  Watts/1000 = kW

Total Allowed Interior Power Allowance ________ kW > Proposed Interior Lighting ________ kW
# Exterior Lighting Power Allowance IECC 505.6.2

<table>
<thead>
<tr>
<th>Area Description</th>
<th>B</th>
<th>Area or Linear Feet in Proposed Design</th>
<th>D</th>
<th>Total (B x C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tradable Surfaces</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parking lots &amp; drives</td>
<td>0.15 W/ft²</td>
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<tr>
<td>Walkways less than 10 ft wide</td>
<td>1.0 W/linear foot</td>
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<tr>
<td>Walkways 10 ft wide or greater, plaza areas &amp; special feature areas</td>
<td>0.2 W/ft²</td>
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</tr>
<tr>
<td>Stairways 1.0</td>
<td>W/ft²</td>
<td></td>
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</tr>
<tr>
<td>Main entries</td>
<td>30 W/linear foot of door width</td>
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<tr>
<td>Other doors</td>
<td>20 W/linear foot of door width</td>
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<tr>
<td>Canopies (free standing &amp; attached and overhangs)</td>
<td>1.25 W/ft²</td>
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<tr>
<td>Open sales areas (includes vehicle lots)</td>
<td>0.5 W/ft²</td>
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<tr>
<td>Street Frontage for vehicle sales lots in addition to &quot;open area&quot; allowance</td>
<td>20 watts/linear foot</td>
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<tr>
<td>Non- Tradable Surfaces</td>
<td>(Lighting Power Density calculations for the following applications can be used ONLY for the specific application and cannot be traded between surfaces or with other exterior lighting. The following allowances are in addition to any allowance otherwise permitted in the &quot; Tradable Surfaces&quot; section of this table.)</td>
<td></td>
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<tr>
<td>Building Facades (lit surface only)</td>
<td>0.2 W/ft² or 5.0 W/linear foot</td>
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<tr>
<td>Automated tell machines &amp; night depositories</td>
<td>270 watts per location plus 90 watts per additional ATM per location</td>
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<tr>
<td>Entrances &amp; gatehouse inspection stations at guarded facilities</td>
<td>1.25 W/ft²</td>
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<tr>
<td>Loading areas for law enforcement, fire, ambulance &amp; other emergency service vehicles</td>
<td>0.5 W/ft²</td>
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<tr>
<td>Drive-up windows</td>
<td>400 watts per drive-through</td>
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<tr>
<td>Parking near 24-hour retail entrances</td>
<td>800 watts per main entry</td>
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</tbody>
</table>

Sum of Column D

Total ELPA = 1.05 x Total Above

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# Proposed Installed Exterior Lighting Power IECC 505.6

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixture Type</td>
<td>Number of Luminaires Installed</td>
<td>Watts per Luminaire (including ballast)</td>
<td>Installed Watts (B x C)</td>
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</tbody>
</table>

Total Allowed Exterior Power Allowance _____ kW > Proposed Exterior Lighting _____ kW