


CITY AND COUNTY OF DENVER		POLICY	DENVER FIRE DEPARTMENT
Subject:	WOODWORKING OPERATIONS		
Reference:	2015 IFC, 2016 Denver Amendments; 2012 NFPA; 2014 NFPA (NEC); 2015 IBC; 2015 IMC		
Approved:	 Manuel Almaguer Division Chief, Fire Prevention Division		
Number:	2015 IFC 3803-2 2012 NFPA 664, 2014 NFPA 70	Effective Date: March 1, 2019	Page 1 of 5

This policy is meant to provide basic information for the most common conditions and situations. In any given occupancy, many other Fire Code requirements may be enforced. The Fire Inspector will address these during a premise inspection. Questions can be addressed by contacting the Fire Prevention Division between 7:00 a.m. and 4:00 p.m. at 720-913-3474. Walk-in hours are 7:00 a.m. to 9:30 a.m. ONLY, Monday-Friday at 745 W. Colfax Avenue.

I. SCOPE

This policy covers permitting requirements as they pertain to the performance of **WOODWORKING OPERATIONS** within the City and County of Denver. Occupancies covered by this policy include Cabinet Shops, Furniture Manufacturing, Milling Operations, General Wood Working and all other occupancies or businesses that engage in cutting, shaping, sanding, forming or manufacturing products out of wood or wood products that produce DEFLAGRABLE DUST which is a fire hazard. Included is any type of wood working incidental to the primary nature of the business or occupancy.

II. DEFINITIONS

- A. NFPA 664 (3.3.24.1) *Deflagrable Wood Dust*. Wood particulate with a median diameter of 420 microns or smaller (i.e., material that will pass through a U.S. No. 40 Standard Sieve).
- B. NFPA 664 (3.3.6) *Deflagration Hazard*. A situation where deflagrable wood dust is normally in suspension or can be placed in suspension at concentrations at or above the minimum explosible concentration (MEC).
- C. NFPA 664 (8.2.1.4) A *Fire Hazard* shall be deemed to exist in the system wherever dry wood particulate is collected or conveyed.
- D. NFPA 664 (A.8.2.1) *Wood waste* is commonly produced by the following:
 1. Fine cutting (e.g., sanding), which produces a dust of very fine particle size. This dust is usually assumed to be deflagrable.
 2. Sawing and machining hardwoods, which often produces wood waste containing considerably more dust than that from softwood. This dust is usually assumed to be deflagrable.
 3. The processing of MDF chipboard and similar boards by machining and sawing. This process can be expected to produce waste containing a high percentage of fine dust. This dust is usually assumed to be deflagrable.
 4. When mixed processing of a variety of woods occurs, the waste produced should be assumed to be deflagrable.

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E. **NFPA 664 (B.4.2) Deflagration Venting** provides a panel or door (vent closure) to relieve the expanding hot gases of a deflagration from a process component or room.

III. PERMITS

ARE REQUIRED WHEN - This policy shall be applied to all facilities that engage in woodworking operations over 2500 SQ. FT. / 3 or more pieces of fixed dust producing equipment / any occupancy deemed to have deflagrable dust present in sufficient form / quantity so as to present a fire hazard.

INITIAL INSTALLATIONS – Of new equipment in new and existing occupancies shall require an *Installation permit and Approval* from the Denver Building & Fire Departments.

ANNUAL DENVER FIRE DEPARTMENT OPERATIONAL PERMIT - Required Annually for use and inspection of Facilities engaged in dust producing processes.

PROCUREMENT - Submit Application for Permit along with payment, drawings and specifications to the Denver Fire Department, Fire Prevention Division, 745 West Colfax Avenue, Denver, Co. 80204 – FIRST FLOOR - Checks Payable to “Denver Manager of Finance”

WALK IN PERMITS: 6:30 a.m. to 9:00 a.m. **ONLY**, Monday – Friday, at 745 W. Colfax Denver CO 80204

FEE’S – Fee Schedule available online at **DenverGov.org/DFD** and select “Fire Safety Permits” for current Fire Permit Fee Calculation Tables.

IV. SITE INSPECTION

Upon approval of a **WOODWORKING** Permit, a Denver Fire Department Fire Prevention Inspector will conduct a field inspection of the site. Compliance with **all** Fire Code requirements shall be maintained at all times. Permits shall be kept on site and posted. Permit is valid for business/property owner, time frame, and site address indicated on the permit.

IV. SPECIFIC REQUIREMENTS

A. 310. **“No Smoking” signs.** The fire code official is authorized to order the posting of “No Smoking” signs in a conspicuous location in each structure or location in which smoking is prohibited. The content, lettering, size, color and location of required “No Smoking” signs shall be approved.

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- B.** 1904.3 **Portable fire extinguishers** shall be provided within 75 feet of travel distance to any machine producing shavings or sawdust. Portable fire extinguishers shall be provided in accordance with Section 906 for **extra-high hazards**. A minimum of 1, 4A-80BC (10 LB. ABC) extinguisher shall be available for every 1000 SQ. FT. of work space in woodworking facilities. NOTE: Two 2 1/2 -gallon water-type extinguishers shall be deemed the equivalent of one 4-A rated extinguisher.
- C.** 903.2.4.1. An **automatic sprinkler system** shall be provided throughout all Group F-1 occupancy fire areas that contain woodworking operations **in excess of 2,500 square feet** in area which generate finely divided combustible waste or which use finely divided combustible materials.
- D.** 1303.1 **Sources of ignition.** Smoking or the use of heating or other devices employing an open flame, or the use of spark- producing equipment is prohibited in areas where combustible dust is generated, stored, manufactured, processed or handled.
- E.** 1303.2 **Housekeeping.** Accumulation of combustible dust shall be kept to a minimum in the interior of buildings. Accumulated combustible dust shall be collected by vacuum cleaning or other means that will not place combustible dust into suspension in air. Forced air or similar methods shall not be used to remove dust from surfaces.
- F.** NFPA 664 **Woodworking equipment** or machinery located inside woodworking occupancies shall be equipped with a **fixed dedicated area dust collection system** of sufficient size and capacity to maintain the required airflow and efficiently separate the wood dust from the air before the air is exhausted.
- G.** Listed / approved **portable wood sawdust collectors** may be used in limited cases but only when one such collector is dedicated to only one sawdust producing machine with no more than a total of three (3) portable dust collectors present.
- H.** All **duct work** used as part of a duct collections system shall be: round, constructed of metal, electrically grounded and bonded to all equipment. 8.2.2.2.1.7, 8.2.2.2.1.1, 8.2.2.2.1.8, 7.9.2(1).
- I.** 8.2.2.2.1.2* Nonconductive ducts such as **PVC pipes shall not be permitted.**
- J.** 8.2.2.1.4* **Dust collecting equipment shall be interlocked with the woodworking machinery power supply** so that the woodworking machinery cannot be operated without the dust collection equipment also being in operation.
- K.** All dust collection system shall have an approved means of deflagration venting.
- L.** 7.10.2.1* Wood cutting, shaping, and planing equipment shall be maintained at a **level of sharpness** to minimize the heat generated from woodworking operations.
- M.** 8.2.2.5.1.4*Dust collectors shall be **located** in accordance with one of the following: (1) Outside of buildings (preferable), (2) Inside with approved protection systems per NFPA 664.
- N.** 10.2.4.1* The entire system, including each fan, motor, blower unit, operating control panels, fume scrubbers, flexible connections, and dampers, shall be **inspected and maintained** in accordance with the manufacturer's recommended guidelines and safe practices.
- O.** 10.4***Employee training** shall include general safety training and job-specific training.
- P.** 10.4.5* **Emergency awareness** training shall be given to all employees when emergency plans are initially implemented, revised, or updated and at least annually.

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- Q. 11.1.4 **Combustible waste** that cannot be reintroduced to the production process or utilized as fuel shall be placed in covered metal receptacles until removed to a safe place for daily disposal.
- R. 11.1.7 Spaces inaccessible to **housekeeping** shall be sealed to prevent dust accumulation.
- S. 11.2.1.1* Surfaces shall be cleaned in a manner that minimizes the generation of dust clouds.

V. GENERAL INFORMATION

- A. A.6.4.1 Structural steel that is out of the reach of normal vacuuming or sweeping operations and that has horizontal ledges (such as I-beams or U-shaped channels in the up or sideways position) should be boxed in with a limited-combustible material to eliminate pockets for dust accumulation. New interior walls should be specified as being smooth and with minimal ledges.
- B. Surfaces not readily accessible for cleaning should be inclined at an angle of not less than 45 degrees from the horizontal to minimize dust accumulation.
- C. As much as a 60-degree angle of inclination could be necessary for maximum effectiveness with many types of wood dust. Horizontal surfaces that can benefit from a sloped cover include girders, beams, ledges, and equipment tops.
- D. A.6.4.2.2 A relatively small initial dust explosion will disturb, and suspend in air, dust that has been allowed to accumulate on the flat surfaces of a building or equipment. This dust cloud provides fuel for the secondary explosion, which usually causes the major portion of the damage. Recognizing and reducing dust accumulations is, therefore, a major factor in reducing the hazard in areas where a dust hazard can exist. Prudent operating policies would advise evaluating dust levels whenever a visible dust cloud exists. When dust accumulations are identified, an engineering analysis should be performed to determine whether a deflagration hazard exists.
- E. Dust layers 1/8-inch-thick are sufficient to warrant immediate cleaning of the area.
- F. Attention and consideration should also be given to other projections, such as light fixtures, that can provide surfaces for dust accumulation.
- G. A.8.2.2.1.4 The preferred method, to assure that the dust collection system is in operation whenever a machine is in operation, is to electrically interlock the dust collector and machines. The dust collector should remain on for at least 1 minute longer than the last machine to assure that the particulate is exhausted from the main duct.
- H. A.8.2.2.5.1.4 Although alternatives to out-of-doors locations are permitted, allowing indoor locations under special circumstances, outdoor locations are highly recommended. It is not advisable to locate dust collectors on the roofs of buildings.

VI. PERMIT MAY BE REVOKED WHEN

- A. Any of the conditions or limitations set forth in the permit have been violated.
- B. Compliance with written orders has not been achieved.
- C. False statements or misrepresentations of information provided in the permit application are discovered.
- D. The permit is issued in error or in violation of a City ordinance, or a Fire Code violation exists.

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WOODWORKING PERMIT APPLICATION FORM

THIS FORM SHALL BE FILLED OUT AND SIGNED BY A REPRESENTATIVE OF THE BUSINESS APPLYING FOR A WOODWORKING PERMIT. A PERMIT WILL NOT BE ISSUED IF THIS FORM IS NOT COMPLETE AND ACCOMPANIED WITH BUILDING DEPARTMENT APPROVAL.

NAME OF BUSINESS: _____

BUSINESS ADDRESS: _____

CITY, STATE, ZIP CODE _____

PERMIT SITE ADDRESS: _____ DENVER, CO.

CONTACT'S NAME _____

CONTACT'S PHONE NUMBER: _____

CONTACT'S EMAIL _____

I HAVE READ AND UNDERSTAND THE DENVER FIRE DEPARTMENT'S POLICY REGARDING WOODWORKING OPERATIONS. I ALSO UNDERSTAND THAT A SITE INSPECTION WILL BE CONDUCTED BY DENVER FIRE PREVENTION DIVISION PERSONNEL, AND IF THE INSTALLATION DOES NOT COMPLY WITH DENVER'S FIRE CODE (2009 IFC WITH CITY AMENTMENTS), THE PERMIT MAY BE REVOKED WITHOUT A REFUND.

SIGNATURE: _____ DATE: _____