

# Woodworking Shops

## Information on the mechanical and electrical requirements for woodworking shops



## Mechanical

Where combustible dusts produce an explosion or fire hazard, a dust collection system shall be provided.

- An approved dust collection system shall be provided under separate permit for the woodworking (dust producing) area (Manitoba Fire Code Section 5.3.).
  - Engineered dust collection drawings shall be submitted for review. The dust collection system shall comply with the Manitoba Fire Code and all referenced documents.
  - Smoking, open flame and spark producing equipment or devices are not permitted in a combustible dust producing shop/area (Manitoba Fire Code).
  - The storage of any and/or all flammable/combustible materials, substances, and liquids shall comply with the requirements of the Manitoba Building Code and the Manitoba Fire Code.
  - The integrity of any and/or all fire separations shall be maintained and shall comply with the requirements of the Manitoba Building Code.
- Mechanical ventilation shall be provided in this occupancy in accordance with good Engineering Practice (Manitoba Building Code Subsection 6.2.2.). Systems designed in accordance with ANSI/ASHRAE 62, “Ventilation for Acceptable Indoor Air Quality”, or the Industrial Ventilation Manual published by ACGIH are considered to be “Good Engineering Practice”.
  - Specialized knowledge is required for the design of the woodwork facility and/or the dust collection system. Such facilities and or systems shall be designed and sealed by a Professional Engineer entitled to practice in the Province of Manitoba.

A Professional Designer’s Certificate and an Owner Statement must be submitted with the permit application.

# Electrical

## CLASSIFICATION

The Winnipeg Electrical By-law classifies woodworking shops as Zone 22 electrically hazardous locations. The following relaxations to Zone 22 requirements will be permitted where adequate dust control equipment is installed and interlocked. For items not listed below, Zone 22 requirements shall apply.

## WIRING METHODS

- Surface wiring may be either rigid PVC conduit or Electrical Metallic Tubing (EMT) utilizing couplings and connectors approved for wet locations. Boxes and fittings shall comply with Rule 18-252 2).
- Concealed wiring may be type AC or NM cable. Concealed boxes and fittings may be ordinary type.
- Surface mounted boxes and fittings shall comply with Rule 18-252 2).
- Surface mounted enclosures for equipment disconnects must be marked as suitable for circulating dust as per Table 65.

## COVERS FOR SWITCHES & RECEPTACLES

Switch and receptacle covers may be of the type marked suitable for wet locations; covers marked Extra Duty (i.e.: in-use covers) are not acceptable. Where duplex receptacles are used, a separate self-closing cover will be required for each section of the receptacle.

## LIGHTING

General purpose fluorescent luminaires other than those with T5 lamps may be installed:

- if mounted directly on the ceiling; or
- if suspended, provided with adequate dust shields to prevent the accumulation of dust

**Note:** Industrial-type fluorescent luminaires with solid reflectors are not considered to have adequate dust shields as required above. The dust shields must prevent dust from accumulating on the ballast compartment.

LED luminaires, exit signs and emergency lights must be of dust tight construction with a minimum NEMA rating of Type 4 or 12.

## EQUIPMENT

Woodworking equipment shall be of dust tight construction.

## HEATING

Unit electric air heaters, other than those approved for the location, will be permitted provided all of the following requirements are met:

- motors are of the totally enclosed type
- the unit is designed to minimize the accumulation of dust and other debris
- the enclosures for electrical parts of the heater shall prevent the entrance of dust
- the exposed surface\* temperature of the heater shall not exceed 165°C under normal conditions and 218°C under abnormal conditions such as fan failure.  
\* Exposed surface means a surface exposed to the air, e.g. motor enclosure, heater sheath, etc. A “GX” rated heater will generally meet these requirements.

The bonding requirements of Rule 18-072 need not apply.

## NOTES

- The preceding requirements are applicable to new and existing electrical equipment within the proposed woodworking shop.
- All interior doors serving the woodworking shop shall be weather-stripped and equipped with self-closing devices, or otherwise designed to prevent the passage of dust.
- For additions, modifications, renovations to, or operation and maintenance of existing facilities employing the Division system of classification, the continued use of the Division system of classification shall be permitted. See Annex J18 of Appendix J in the Winnipeg Electrical Bylaw.
- Painting and special process operations are not permitted in a woodworking area where the area is designed to Zone 22 requirements or to Zone 22 with the aforementioned permissible relaxations.



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Every effort has been made to ensure the accuracy of information contained in this publication. However, in the event of a discrepancy between this publication and the governing City of Winnipeg By-law, the By-law will take precedence.