

Department of Environment and Labour  
Occupational Health and Safety Division

## Draft Indoor Air Quality Regulations

May, 2001

These draft regulations are being distributed for public comment. They do **NOT** represent the current policy of the Government of Nova Scotia or any of its Departments or agencies.

Note that the numbering system used by the original working group has been preserved to the extent possible. This allows for easier comparisons with previous versions of the draft regulations.

# PART 1: INTERPRETATION

## SHORT TITLE

1 These regulations may be cited as the Indoor Air Quality Regulations.

## DEFINITIONS

2 In these regulations

- (a) "**air handling equipment**" means mechanical ventilation system components, including duct work, grills, and openings for the purposes of mechanical ventilation, and components of mechanical air heating or cooling equipment that are used for ventilation;
- (b) "**ASHRAE**" means the American Society for Heating, Refrigerating and Air-Conditioning Engineers;
- (f) "**competent person**" means a person who is
  - (i) qualified because of that person's knowledge, training and experience to do the assigned work in a manner that will ensure the health and safety of persons in the workplace, and
  - (ii) knowledgeable about the provisions of the Act and these regulations, that apply to the assigned work, and about potential or actual danger to health or safety associated with the assigned work;

"**controlled product**" means any product, material or substance specified by the regulations made pursuant to paragraph 15(1)(a) of the Hazardous Products Act to be included in any of the classes listed in Schedule II of that Act;

"**engineer**" means a person who is registered as a member or licensed to practice under the *Engineering Profession Act* and is competent to do the work being performed;

- (h) "**functional performance testing**" means the checks and tests carried out on HVAC system to determine if components, subsystems, systems and interfaces between systems function in accordance with the intended usage plan, mechanical and physical design specifications, operation and maintenance plan, and the assumptions certified by an engineer pursuant to Section 12, and in this context "function" includes modes and sequences of control operation, interlocks and conditional control responses and specified responses to abnormal or emergency conditions;
- (j) "**hazardous substance**" means a substance, including a chemical or biological substance, that is likely to, because of its harmful nature, cause injury or damage to the health or safety of a person exposed to it;
- (i) "**HVAC system**" means the collective mechanical and ancillary components

of the heating, ventilating and air-conditioning system including, but not limited to, filters and frames, cooling coil condensate drip pans and drainage piping, air dampers and actuators, humidifiers, air distribution duct work, temperature controls, and cooling towers, unless otherwise specified in these regulations;

**“intended usage plan”** means a written document listing the types of activities that will occur in the building and the planned number of occupants in each ventilation zone and detailing any processes likely to adversely affect indoor air quality.

**“mechanical and physical design specifications”** means a written document listing the furnishings, floor coverings, equipment and materials that will be used in the building to accomplish the intended usage plan that may have an impact on indoor air quality.

- (l) **"natural ventilation"** means outdoor air that is provided by infiltration, non-powered ventilators and intentionally provided openings such as open windows or doors, but does not include ventilation provided by means of HVAC systems.
- (m) **"non-industrial workplace"** means an indoor or enclosed work space with limited industrial processes such as, but not limited to, offices, educational facilities, commercial establishments, and health care facilities, and office areas, cafeterias, and break rooms located in manufacturing or production facilities used by employees, but do not include premises that are used primarily as manufacturing and production facilities, private residences, vehicles, and agricultural operations;

**“operation and maintenance plan”** means a written document including procedures for the operation and maintenance of the HVAC system, furnishings, floor coverings, equipment and materials specified in the mechanical and physical design plan.

- (n) **“occupant”** means any person who occupies a workplace, including employees, patients, residents, and students.
- (s) **"renovation"** means a modification to a building or its furnishings, floor coverings, materials, or equipment which involves work that is likely to adversely affect the quality of air provided to employees outside the area being modified, but does not include routine maintenance that is performed in accordance with written procedures that are prepared in accordance with Section 26.

## PART 2: APPLICATION

### APPLICATION

- 4 These regulations apply to all non-industrial workplaces and the owner, employer, employee, self-employed person, constructor, and contractor at such a workplace.

### CONSULTATION AND IMPLEMENTATION

An employer developing or reviewing a written procedure for the purpose of these regulations shall do so in consultation with the employer's committee or representative, if any.

Where a written procedure is developed for the purpose of the Act or these regulations, the employer shall ensure that

- (a) the procedure is adequate and implemented; and
- (b) each employee required to perform a function under the procedure is trained in respect of the procedure generally, and in particular in the requirements relating to that employee.

### **USE OF TERM EMPLOYER**

Where the term employer is used, it also means, employee, self-employed person, constructor, and contractor at such a workplace.

## **PART 3: GENERAL DUTY CONCERNING VENTILATION STANDARDS**

### **GENERAL DUTY CONCERNING NEW AND EXISTING BUILDINGS**

- 6** (1) An employer shall ensure that
- (a) an adequate supply of outdoor air is provided to each person at the workplace, and
  - (b) the HVAC system is installed, assembled, used, stopped, inspected, serviced, tested, adjusted, modified, operated, and maintained in accordance with the most recent operation and maintenance plan specifications for the HVAC system.
- (2) For greater certainty, at a time when only a minimal number of employees are present, such as when security or janitorial work is performed outside of normal business hours at the non-industrial workplace, if the standard set out in clause (1) (a) is achieved, it is not necessary to operate air handling equipment.
- (3) Notwithstanding clause 24(4)(b), where it is reasonably practicable to supply a greater amount of fresh air to prevent an adverse health effect, a supply of 2.5 litres per second of outside air per occupant shall not be deemed to be an adequate supply of air for the purpose of clause 1 (a) and the supply shall meet as closely as reasonably practicable the requirements of ASHRAE Standard 62-1989, "Ventilation for Acceptable Indoor Air Quality".

## PART 4: THERMAL CONDITIONS

### NEW BUILDINGS

- 7 Where a non-industrial workplace is constructed after these regulations came into effect, the owner shall ensure the HVAC system is designed so that it meets the requirements of ASHRAE 55-1992 "Thermal Environmental Conditions for Human Occupancy."

### EXISTING BUILDINGS

- 8 Where a non-industrial workplace existed before these regulations come into effect, the owner shall ensure, where it is within the mechanical and physical design specifications of the HVAC system, that the requirements of ASHRAE 55-1992 "Thermal Environmental Conditions for Human Occupancy" are met.
- 9 Where a non-industrial workplace existed before these regulations came into effect and where it is not within the mechanical and physical design specifications of the HVAC system to meet the requirements of ASHRAE 55-1992 Thermal Environmental Conditions for Human Occupancy and where it is likely the temperature will drop below 15 degrees Celsius for longer than 2 consecutive hours, the employer shall ensure, where reasonably practicable,
- a) the temperature is raised above 15 degrees Celsius;
  - b) employees are relocated to an area where the temperature is above 15 degrees Celsius; or
  - c) employees are allowed to leave the workplace

### OFFICE ENVIRONMENTS

- 10 In office environments, the table, Office Accommodation: Humidex Table for Temperature and Relative Humidity Readings, shall be used to determine remedial action where
- (a) the intersection of the temperature value and the humidity values in the Office Accommodation: Humidex Table for Temperature and Relative Humidity Readings, cross in an area marked as "R", employees are to be relocated or allowed to leave the workplace; or
  - (b) the intersection of the temperature value and the humidity value in the Office Accommodation: Humidex Table for Temperature and Relative Humidity Readings cross in an area marked as "C", remedial measures are to be taken.

**Office Accommodation  
Humidex Table for Temperature and Relative Humidity Readings**

| Relative Humidity(%) |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----------------------|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Temperature          | 100 | 95 | 90 | 85 | 80 | 75 | 70 | 65 | 60 | 55 | 50 | 45 | 40 | 35 | 30 | 25 |
| °C                   |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 35                   | R   | R  | R  | R  | R  | R  | R  | R  | R  | R  | R  | R  | R  | R  | C  | C  |
| 34                   | R   | R  | R  | R  | R  | R  | R  | R  | R  | R  | R  | R  | R  | C  | C  | C  |
| 33                   | R   | R  | R  | R  | R  | R  | R  | R  | R  | R  | R  | C  | C  | C  | C  | C  |
| 32                   | R   | R  | R  | R  | R  | R  | R  | R  | R  | R  | C  | C  | C  | C  | C  | C  |
| 31                   | R   | R  | R  | R  | R  | R  | R  | R  | C  | C  | C  | C  | C  | C  | C  | C  |
| 30                   | R   | R  | R  | R  | R  | R  | R  | C  | C  | C  | C  | C  | C  | C  | C  | C  |
| 29                   | R   | R  | R  | R  | R  | R  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  |
| 28                   | R   | R  | R  | R  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  |
| 27                   | R   | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  |
|                      |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

- 11** In an office environment, where instrumentation capable of accurately measuring humidex is not reasonably available and it is likely that the temperature will rise above 32 degrees Celsius for more than 2 consecutive hours, the employer shall ensure, where reasonably practicable,
- a) the temperature is reduced below above 32 degrees Celsius;
  - b) employees are relocated to an area where the temperature is below 32 degrees Celsius; or
  - c) employees are allowed to leave the workplace.

## **PART 5: DESIGN AND DOCUMENTATION**

### **ESTABLISHING NEW BUILDING COMPLIANCE WITH DESIGN INTENT**

- 12** (1) Where a non-industrial workplace is constructed, before the non - industrial workplace is occupied, the owner shall ensure that an engineer prepares documents including
- (a) the intended usage plan for the non-industrial workplace;
  - (b) the mechanical and design specifications for the non-industrial workplace;

- (c) the operation and maintenance plan for the non-industrial workplace;
  - (d) a report of functional performance test results for the HVAC system; and
  - (e) a certificate establishing that the HVAC system has been designed, installed, and, at the time of functional performance testing, is operating in conformity with ASHRAE Standard 62-1989, "Ventilation for Acceptable Indoor Air Quality" and is capable of operating at the design occupancy level, and Sections 15, 16, 17, 18, 19, and 20 of these regulations are complied with.
- (2) The owner shall keep the most up to date version of the documents referenced in sub-section (1).
  - (3) The operation and maintenance plan for the HVAC system shall include written procedures for the operation, inspection, testing, cleaning and maintenance of the HVAC system.
  - (4) The procedures required in sub-section (3) shall
    - (a) be adequate to ensure that the HVAC system is monitored and properly maintained so as to meet the mechanical and physical design specifications;
    - (c) specify the manner of operation, including hours of operation;
    - (iv) specify the nature and frequency of inspections, testing, cleaning, maintenance and calibration of the HVAC system
    - (g) be reviewed by a competent person, and amended if necessary,
      - (i) where modifications to the HVAC system or a part of it are carried out which are likely to materially affect the ability of the HVAC system to properly ventilate a workplace in the building in accordance with the mechanical and physical design specifications,
      - (ii) where an investigation has identified a hazard to health or safety which could be controlled by changes to HVAC operation and maintenance, or
      - (iii) at least every five years.

### **ACCESS TO INFORMATION**

- 13** (1) This Section applies to all records, reports or documents created or used pursuant to these regulations.
- (2) The employer shall make readily available in the workplace information

indicating where records, reports and documents are kept and the title of, and means of contacting, the person who will make them available.

(3) Upon receipt of a request in writing from

- (a) the committee;
- (b) the representative;
- (c) an employee at a workplace;
- (d) a tenant;
- (d) an owner; or
- (e) an officer;

for any record, document or report the employer shall as soon as is reasonably practicable respond in writing.

(3A) The response required in sub-section (3) shall be to

- (a) give a copy of the requested record, document or report; or
- (b) give reasons for not providing the information, in whole or in part.

(3B) Where it is not reasonably practicable to provide a response before the expiry of a twenty-one day period, the employer shall provide within that time a reasonable explanation for the delay, and indicate to the committee, representative, employee, tenant, owner, or employer when the response will be forthcoming and provide the response as soon as it is available.

(4) Where the committee, representative, employee, employer, tenant, or owner makes a request pursuant to subsection (3) and is not satisfied that the explanation provided for a refusal to give the requested record, document or report, or delay in responding is reasonable in the circumstances, the chair or co-chairs of the committee, the representative, employee, tenant, owner or employer, as the case may be, shall promptly report this fact to an officer.

## **INFORMATION TO BE TRANSFERRED TO SUCCESSOR OWNER OR EMPLOYER**

**14** Where an employer ceases to own or operate a non-industrial workplace, the current version of the records that they are required by this regulation to make available shall be transferred to the successor employer where such succession is known.

## **REQUIREMENTS FOR VENTILATION DUCTS SOUND CONTROL**

- 15** (1) Where a non-industrial workplace is constructed after these regulations come into effect or is modified pursuant to Section 24 and sound control is necessary to prevent excessive fan or vibration noise from travelling through duct work, the employer shall where reasonably practicable, install a prefabricated sound attenuator, such as a duct silencer.
- (2) Any sound absorbing material used inside of air handling equipment or duct work shall
- (a) be of an adequate strength to avoid unintended breakage and crumbling;
  - (b) have all fibrous material sealed to prevent fibre emission and accumulation of dirt which could promote mould growth,
  - (c) be resistant to erosion at anticipated air velocities, and
  - (d) be free from odour when dry or wet.

## **ACCESS TO DUCTS**

- 16** (1) The employer at a non-industrial workplace shall provide access doors for the cleaning and inspection of duct systems.
- (2) The access doors provided pursuant to sub-section (1) shall be installed with a positive seal and locking mechanism and located
- (a) at not more than 12 m intervals;
  - (b) at not more than 6m intervals on the ductwork installed after a filter with a rated efficiency greater than 95%;
  - (c) at the base of all main risers;
  - (d) in front of and behind all turning vanes and coils;
  - (e) at all fire, smoke, and motorized dampers;
  - (f) at all locations having an internally mounted piece of equipment or device.
- (3) The employer shall ensure louvres, grilles and diffusers in the air handling system are removable for more routine maintenance and cleaning.

## **LOCATION OF COMBUSTION EQUIPMENT AND AIR HANDLING EQUIPMENT**

- 17** Where an HVAC system is

- (1) constructed after these regulations come into effect; or
- (b) required, pursuant to Section 24 to be upgraded to conform the ASHRAE Standard 62-1989, "Ventilation for Acceptable Indoor Air Quality"

the system or part thereof shall be installed so that rooms containing combustion equipment , such as boiler rooms, are physically separate from rooms containing air handling equipment.

- 18** Where an HVAC system was constructed before these regulations came into effect, where reasonably practicable, rooms containing combustion equipment, such as boiler rooms, shall be physically separate from rooms containing air handling equipment.
- 19** Where an HVAC system was constructed before these regulations came into effect and it is not reasonably practicable to physically separate rooms containing combustion equipment from rooms containing air handling equipment, the employer, shall carry out a monthly inspection of combustion equipment for contaminant leaks and record the results of the inspection and remedial action taken and take remedial action where necessary.

## **RECORDS OF BUILDING PLANS FOR EXISTING BUILDINGS**

- 22** (1) Where a building or part thereof was designed or constructed before these regulations came into effect, an owner shall retain the latest version of any of the following information which the owner has at the time these regulations come into effect
  - (a) the intended usage plan;
  - (b) the mechanical and design specifications;
  - (c) the operation and maintenance plan ; and
  - d) functional performance test results indicating the extent of conformity with the mechanical and physical design specifications.
- (2) An officer may order the employer to create the plans referenced in subsection (1).

## **OPERATION AND MAINTENANCE PLAN**

- 23** (1) Where a building is constructed after these regulations came into effect, or where an HVAC system is required, pursuant to Section 24, to be upgraded to ASHRAE Standard 62-1989, "Ventilation for Acceptable Indoor Air Quality", the owner shall ensure that
  - (a) an operation and maintenance plan is prepared; and

- (b) an engineer reviews the operation and maintenance plan and confirms in writing that it is adequate to achieve the mechanical and physical design specifications.
- (4) Where a non-industrial workplace or part thereof was constructed before these regulations came into effect, and the employer does not have the single-line schematics or as-built construction documents, the employer is not required to create them unless so ordered by an officer.

## **PART 6: UPGRADING OF EXISTING BUILDINGS**

### **UPGRADING OF EXISTING BUILDINGS OR PARTS THEREOF**

#### **24**

- (2) For the purposes of this section, buildings owned, operated or controlled by the Crown shall be evaluated as if the Building Code Act and Regulations applied to them.
- (3) Where a non-industrial workplace was constructed before these regulations came into effect, and where, for the purposes of the Provincial Building Code adopted pursuant to the Building Code Act and regulations
  - (a) the class of occupancy as defined in the Provincial Building Code of the non-industrial workplace or any part thereof is changed so that all parts of the non-industrial workplace included in the change are required to conform to the Provincial Building Code, or
  - (b) an extension of the non-industrial workplace is constructed, or there is another alteration to the non-industrial workplace or a space in it that is so extensive that the Building Code Act requires that the whole of the non-industrial workplace or the altered space within it must conform to the latest edition of the Provincial Building Code, the areas of the non-industrial workplace that must conform to the Provincial Building Code must be ventilated in accordance with ASHRAE Standard 62-1989, "Ventilation for Acceptable Indoor Air Quality".
- (4) (b) If no mechanical and physical design specifications are available, a ventilation rate of greater than two and a half litres per second of outside air per occupant of a space after the upgrade shall be supplied.
- (6) Where subsection (3) or (4) becomes applicable to a space, before the space is occupied for use as a workplace, the owner shall ensure that an engineer prepares the documents required in section 12(1) and maintains the documents according to section 12(2).

## **PART 7: HVAC MAINTENANCE AND OPERATION**

### **OPERATION OF AIR HANDLING EQUIPMENT PRIOR TO DAILY OCCUPANCY**

- 25** Where reasonably practicable, air handling equipment shall be turned on 1 hour prior to the building reaching 50% of the intended usage plan occupancy or such other time as prescribed by an engineer.

### **RECORD KEEPING**

- 27** (1) The employer shall ensure that a record is made of each inspection, test, cleaning and maintenance activity required by these regulations.
- (2) The records required by this section shall, as appropriate,
- (a) specify the date and type of activity performed,
  - (b) specify the name of the person who did the activity and their employer
  - (c) specify the components of the HVAC system involved,
  - (d) specify test results, deficiencies observed and remedial action taken, and
  - (e) be kept for at least five years.

### **OPENINGS FOR NATURAL VENTILATION**

- 29** The employer shall ensure that windows, doors, vents, stacks and other portals meant to be used for natural ventilation are in operable condition.

## **PART 8: BUILDING MAINTENANCE**

### **USE OF CONTROLLED AND ODOUR PRODUCING PRODUCTS**

- 30A** (1) Where a controlled product or a product that intentionally produces an odour is to be used, the employer shall follow the manufacturer's specifications for use.
- (2) Where the manufacturer's specifications for use are followed, the employer shall keep a copy of the manufacturer's specifications at the workplace.
- 30** (1) Where a controlled product or a product that intentionally produces an

odour is to be used and the employer does not follow the manufacturer's specifications for use, the employer shall assess, in writing, each product for the potential to produce airborne hazardous substances, including volatile organic compounds, and use the assessment to determine if the product is likely to have a significant adverse impact on the level of airborne hazardous substances which are emitted into the air in the workplace.

- (4) The assessment required in (1) shall be kept by the employer for as long as the controlled product is used at the workplace.
  - (3) Where the manufacturer's specifications for use of a controlled product or a product that intentionally produces an odour are not followed the employer shall ensure a competent person develops and written procedures for its use that shall include
    - a) when the product is to be used; and
    - b) how the product is to be used.
- 32** (1) Controlled products that can evaporate shall not be stored in rooms used predominantly to house air handling units.

## **PART 9: CONTROL OF EXPOSURE TO AIRBORNE HAZARDOUS SUBSTANCES**

### **OPTIONS FOR CONTROL OF AIRBORNE HAZARDOUS SUBSTANCES**

- 34** (1) Where reasonably practicable the employer shall ensure that the level of exposure of an employee to an airborne hazardous substance is controlled by
- (a) elimination or relocation of the source of the air borne hazardous substance, and the appropriate location of the air intake or exhaust openings;
  - (b) substitution of the air borne hazardous substance with an equivalent that is less harmful;
  - (c) encapsulation of the air borne hazardous substance;
  - (d) ventilation or other engineering controls, which may include filtration or other air cleaning processes,
  - (e) administrative controls including work scheduling, education and training of employees, work practices, procedure or policies; or

- (f) a combination of these measures.
- (2) Personal protective equipment may only be used where the options in (1) are not reasonably practicable.
- (3) The choice of control measure shall be made taking into account
- (a) the nature and amount of the airborne hazardous substance;
  - (b) the source of the airborne hazardous substance;
  - (3) the emission characteristics of the source of the airborne hazardous substance, including the number, emission rate and size of emission points; and
  - (d) the activities in, and physical aspects of, the workplace.

### **LOCAL SOURCE CAPTURE VENTILATION**

**38** Where it is likely a point source will emit a hazardous substance the employer shall, where reasonably practicable, ensure that local source capture ventilation

- (a) is implemented; and
- (b) is exhausted to the outside

### **EFFICIENCY OF FILTRATION**

**39** Where outside air coming into a building constructed or modified pursuant to Section 24 is filtered for the purpose of ventilation the filters must have a minimum dust spot efficiency rating of 60% as determined by ASHRAE Standard 52-1992 "Gravimetric & Dust Spot Procedures for Testing Air - Cleaning Devices Used in General Ventilation for Removing Particulate Matter".

### **CONTROLS FOR SPECIFIC ACTIVITIES**

**40** The employer shall ensure that adequate work procedures and controls are used during the following activities:

- (a) applying or removing floor coverings including carpeting, floor tiles and other surfaces;
- (b) applying wall coverings;
- (c) painting or the application of similar coatings;
- (d) cleaning carpets;
- (e) applying floor finishing and stripping products;

- (f) applying pest control products; or
- (g) applying caulking, sealing, or glazing compounds.

**41** When the activities referred to in Section 40 are being carried out the employer shall ensure the HVAC system is operating where such equipment exists.

#### **MAINTENANCE TO CONTROL MICROBIAL CONTAMINATION**

- 42** (1) The employer shall regularly inspect ductwork, humidifiers, internal building surfaces, and any HVAC system components where it is reasonably likely that standing water will unintentionally accumulate and which could reasonably cause microbial growth.
- (2) Where the inspection required in (1) uncovers an unintentional accumulation of water in ductwork, humidifiers, internal building surfaces, or any HVAC system components which could reasonably cause microbial growth, the employer shall,
- (a) promptly remove the water; and
  - (b) make necessary repairs to prevent further accumulation.
- (3) Where it is not reasonably practicable to promptly repair water leaks, the employer shall ensure that measures are promptly implemented to control water leaks and other appropriate action is taken to prevent microbial growth.
- (1) To the extent reasonably practicable, the employer shall ensure procedures for cleaning or the removal of microbial contamination shall minimize the release of airborne hazardous substances into the ventilation system or general work space.
- (2) The employer shall ensure that damp or wet building materials do not encourage microbial growth
- (8) Where microbial growth that is likely to cause a health or safety hazard has taken place on a material, the employer shall, where reasonably practicable,
- (a) remove the microbial growth;
  - (b) repair the material; or
  - (c) replace the material.

#### **CONTROL OF EXPOSURE TO TOBACCO SMOKE**

- 45** (1) The employer shall control the exposure of workers to environmental tobacco smoke by

- (a) prohibiting smoking in the workplace, or
  - (b) restricting smoking to designated smoking areas or by other equally effective means.
- (2) A designated smoking area provided under (1) shall be clearly identified to the workforce by signs or other effective means and be a
- (a) safe outdoor location, or
  - (b) room structurally separated from other work or break areas.
- (3) If necessary to prevent tobacco smoke from entering a workplace, a designated smoking room must be provided with a separate, exhaust ventilation system which
- (a) meets the requirements for a smoking lounge specified in ASHRAE Standard 62-1989, "Ventilation for Acceptable Indoor Air Quality"
  - (b) is designed in accordance with expected occupancy rates
  - (c) maintains adequate air flows from non-smoking to smoking areas, and
  - (d) discharges directly to the outdoors.
- (4) Before an employer requires an employee to enter an indoor area where smoking is permitted under (2), the employer shall take all precautions reasonable in the circumstances to ensure the tobacco smoke has been effectively removed.
- (5) An employer shall post and maintain in one or more prominent locations in the workplace a sign which indicates either that
- (a) smoking is not permitted at the workplace, or
  - (b) smoking is not permitted at the workplace outside of designated smoking areas.
- 45A** (1) This sections applies to restaurants, bars, games rooms, bingo halls, casinos, pubs, private clubs, theaters, cabarets, sporting venues, arenas, bowling alleys, extended care facilities, and prisons.
- (2) In the workplaces listed in (1), areas that are used by the public are exempt from the requirements of Section 45 if the exposure of workers to environmental tobacco smoke is minimized by the use of all reasonably practicable controls, including administrative and engineering controls.

## **AIR QUALITY DURING RENOVATION**

- 46** (1) Before starting a renovation, the employer shall ensure that written work plans and procedures for a renovation at the workplace are prepared and implemented and include appropriate controls to minimize the spread, during and after the renovation, of airborne hazardous substances to employees who are normally employed in the non-industrial workplace.
- (5) The work plan and procedures referred to in subsection (1) shall be in writing and reflect consideration, where appropriate, of
- (a) where reasonably practicable, implementation of means to ensure that the HVAC system continues to function effectively in serving other areas of the non-industrial during renovation activities;
  - (b) auxiliary air filtration or other air cleaning processes;
  - (c) isolation or containment of work areas and appropriate negative pressure containment;
  - (d) controls to minimize the entry of airborne hazardous substances into the HVAC system and general work spaces;
  - (e) choice of materials to be installed or used;
  - (f) off-gassing of materials to be installed or used; and
  - (g) work during non-occupancy times.
- (3) The employer or owner shall provide notification in accordance with Section 50.

## **PART 10: COMMUNICATION**

### **DUTY TO COMMUNICATE ANTICIPATED ACTIVITY**

- 50** (1) When a project or process that is likely to adversely affect indoor air quality is to be carried out, the employer shall notify
- (a) the committee in the employer's own workplace; and
  - (b) the owner
- as soon as reasonably practicable, and in no case except an emergency less than three working days in advance of any project or process that is likely to adversely affect indoor air quality at the workplace.
- (2) An owner shall notify each employer who occupies a workplace or is

about to occupy a workplace in the building, as soon as reasonably practicable, but in no case except an emergency less than one working day in advance, when an activity likely to adversely affect indoor air quality is to be carried out.

- (3) An employer shall ensure that employees who work in the building and contractors or constructors under the control of the employer, are notified as soon as reasonably practicable, but in no case except in an emergency less than one working day in advance, is to be carried out.
- (4) (a) In this sub-section, "routine maintenance and use" means maintenance and use that is performed monthly or more frequently on a scheduled and predictable basis.
- (b) Subsections (1), (2) and (3) do not apply to routine maintenance that is performed in accordance with
  - (i) the operation and maintenance plan or procedures documented pursuant to Sections 30 or 30A, and
  - (ii) a schedule that is made available to all affected parties.
- (6) The notifications referred to in this section shall include
  - (a) the nature and scope of the work;
  - (b) anticipated effects on air quality or workplace conditions;
  - (c) an adequate description of the controls put in place to minimize the adverse effects on indoor air quality;
  - (d) start date and estimated duration of activity;
  - (e) contact name of the person at the employer carrying out the activity.
- (7) Where an employer is preparing to occupy a workplace the employer shall consult with the committee on all issues requiring consultation in these regulations.

## **PART 11: COMPLAINT PROCEDURE AND INVESTIGATIONS**

### **COMPLAINANT PROCEDURE FOR THE WORKPLACE**

- 51** (1A) The complaint procedures required by this section applies to complaints

from employees, the employer, committees, or the owner.

- (7) Every employer, in consultation with the committee, shall establish a complaint procedure that includes
- (a) procedures for dealing with complaints including
    - (i) documentation of signs and symptoms of occupant discomfort or ill health,
    - (ii) alleged location of the source, and
    - (iii) date and time of the complaint;
  - (b) regular review of complaints by the employer and the committee;
  - (c) identification of individuals responsible for administering the complaint process;
  - (d) procedures for communicating any remedial action to the committee, owner, affected employers, and the complainant;
  - (e) follow up procedures to ensure that the remedial action recommended, if any, has been taken.

## **INVESTIGATION PROCEDURE FOR THE WORKPLACE**

- 52** (1) Upon receipt of a complaint made by an employee, employer, committee, or owner in accordance with the procedures established in Section 51, the employer or owner, whoever has control over the matter, shall ensure that an investigation is conducted, and a report prepared, without delay.
- (2) Where a complaint is received in accordance with the procedures established in Section 51, the employer will ensure that the complaint is communicated to the owner.
- (3) An employer shall ensure that any aspect of an indoor air quality investigation procedure required pursuant to subsection 51(1) is implemented by a competent person.
- (3) An employer shall, in consultation with the committee, develop or adopt a plan for the investigation of an indoor air quality problem including provision for
- (a) reviewing, by means which may include a survey, the nature and number of related health and safety complaints;
  - (b) conducting a visual inspection;

- (c) inspecting the HVAC system for cleanliness, operation and performance;
- (d) examining the maintenance schedule of the HVAC system;
- (d) assessing of building use relative to the intended occupancy plan;
- (e) assessment of actual occupancy relative to the intended occupancy plan;
- (f) determining the potential sources of airborne hazardous substances;
- (g) determining whether controlled products or odor emitting products are a potential source of the indoor air quality problem;
- (h) determining levels of carbon dioxide, carbon monoxide, temperature, humidity, air motion, formaldehyde, particulate, microbial contaminants and volatile organic compounds if necessary;

#### **RECORDS OF A COMPLAINT OR INVESTIGATION**

**53** Every employer shall keep records for at least five years of every indoor air quality complaint and investigation.