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[Table of Regulations](#)

[Main Site](#)

[How current is this regulation?](#)

**NEWFOUNDLAND AND LABRADOR
REGULATION 111/98**

Asbestos Abatement Regulations, 1998
under the
Occupational Health and Safety Act
(O.C. 98-730)

(Filed December 23, 1998)

Under the authority of section 65 of the *Occupational Health and Safety Act*, the Lieutenant-Governor in Council makes the following regulations.

Dated at St. John's, December 23, 1998 .

John R. Cummings, Q.C.
Deputy Clerk of the Executive Council

REGULATIONS

Analysis

- [1. Short title](#)
- [2. Purpose](#)
- [3. Definitions](#)
- [4. Application](#)
- [5. Prohibition and threshold limit values \(TLVs\)](#)
- [6. Registration of contractor](#)
- [7. Worker training](#)
- [8. Notification of division](#)
- [9. Identification](#)
- [10. Workplace assessment](#)
- [11. Asbestos management plan](#)
- [12. Preparation of work area](#)

- [13. Removal procedure](#)
- [14. Encapsulation and enclosure](#)
- [15. Air monitoring of workplace](#)
- [16. Respiratory](#)
- [17. Personal protective equipment](#)
- [18. Personal hygiene](#)
- [19. Decontamination](#)
- [20. Cleanup](#)
- [21. Transport and disposal](#)
- [22. Precautions](#)
- [23. Medical monitoring](#)
- [24. Record of employees](#)
- [25. Exemption](#)
- [26. Repeal](#)
- [Schedule A](#)
- [Schedule B](#)

Short title

1. These regulations may be cited as the *Asbestos Abatement Regulations, 1998* .

[Back to Top](#)

Purpose

2. (1) Asbestos is a general term which is used to describe a group of fibrous mineral silicates of which there are 6 major types which include

- (a) chrysotile (white asbestos);
- (b) crocidolite (blue);
- (c) amosite (brown);
- (d) anthophyllite;
- (e) tremolite; and
- (f) actinolite.

(2) The use of crocidolite and any product containing crocidolite is prohibited by agreement to international convention.

(3) Commercially, asbestos has been used in those applications as fireproofing, textiles, friction products, reinforcing materials; including cement pipes and structures and insulation, both thermal and acoustical.

(4) Availability and low cost in combination with its properties such as structural stability at very high temperatures, high tensile strength, chemical inertness and flexibility attributed to its wide use.

(5) Asbestosis of the lung, lung cancer and mesothelioma, a rare cancer of the pleural lining, have been associated with exposures to airborne asbestos fibres and as a result the use of asbestos has been restricted in many jurisdictions.

(6) Where asbestos products are still in use, a concerted effort has been made to minimize exposures both for those individuals handling the products and the general public.

(7) These regulations have been developed to provide safe handling procedures to minimize exposure to airborne asbestos fibre released from asbestos containing material.

[Back to Top](#)

Definitions

3. In these regulations

- (a) "Act" means the *Occupational Health and Safety Act* ;
- (b) "amended water" means water to which a wetting agent has been added in accordance with manufacturers specifications;
- (c) "asbestos" means any of the following fibrous silicates: actinolite, amosite, anthophyllite, chrysotile, crocidolite or tremolite;
- (d) "asbestos abatement training course" means a course of training with content equivalent to that outlined in Schedule A and provided by a training organization acceptable to the assistant deputy minister;
- (e) "asbestos dust" means airborne particles of asbestos or settled particles of asbestos which are liable to become airborne in the working environment;
- (f) "asbestos material" means material containing greater than 1% asbestos by dry weight;
- (g) "exposure to asbestos" means exposure at work to airborne respirable asbestos fibres or asbestos dust, whether originating from asbestos minerals, materials or products;
- (h) "fibre/cm³ " means fibres per cubic centimetre;
- (i) "friable material" means material that when dry can be crumbled, pulverized or powdered by hand pressure and includes the material that is crumbled, pulverized or powdered;
- (j) "HEPA filters" means a high efficiency particulate aerosol filter that is at least 99.97% efficient in collecting a 0.3 micrometre aerosol;
- (k) "owner" means a trustee, receiver, tenant or occupier or a person for whose direct benefit on completion work is being done;
- (l) "polyethylene sheeting" shall be considered to be no less than 6 millimetre thickness;
- (m) "qualified contractor" means principal contractor as defined in the Act and for purposes of these regulations has one or more persons on staff qualified in asbestos abatement;
- (n) "qualified person" means a person who has successfully completed a course in asbestos abatement acceptable to the assistant deputy minister according to Schedule A;
- (o) "respirable asbestos fibres" means asbestos fibres having a diameter of less than 3 µm and a length-to-diameter ratio greater than 3:1 and only fibres of a length greater than 5 µm shall be taken into account for purposes of measurement; and
- (p) "µm" means micrometre.

[Back to Top](#)

Application

4. (1) These regulations apply to

- (a) every workplace covered under occupational health and safety legislation where asbestos or material containing asbestos is likely to be handled, dealt with, disturbed or removed and including every project, project owner, contractor, employer and employee engaged in or on the project;
- (b) the repair, alteration or maintenance of a building containing asbestos and to the owner of it, and to every employer and employee engaged in the repair, alteration or maintenance;
- (c) every building in which material that contains asbestos has been used and to the owner of it;
- (d) the demolition, repair, alteration or maintenance of machinery, equipment, aircraft, ships, locomotives, railway cars and vehicles containing asbestos and to every employer and employee engaged in the demolition, repair, alteration or maintenance;
- (e) manufacture of materials or products containing asbestos; and
- (f) other operations involving a risk of exposure to airborne asbestos fibres.

(2) An owner or contractor to whom these regulations apply shall take every reasonable precaution to ensure that every worker who is not an employee of the owner or contractor and who works in the workplace of the owner or contractor is protected and every worker shall comply with the requirements of these regulations

[Back to Top](#)

Prohibition and threshold limit values (TLVs)

5. (1) A person shall not apply or install by spraying, or cause to be applied or installed by spraying, asbestos material.

(2) The use of crocidolite and a product containing this material is prohibited.

(3) An encapsulant shall not be applied to friable material that contains asbestos if the friable material has visibly deteriorated or if there is insufficient strength and adhesion of the friable material to its underlying materials and surfaces to support the weight of the encapsulant and the friable materials.

(4) The owner or contractor shall ensure that where it is practical and feasible to substitute materials less hazardous than asbestos, those materials be used.

(5) The owner or contractor shall maintain concentrations of airborne asbestos fibres to as low as is reasonably achievable (ALARA) but in any case shall not exceed the threshold limit values as contained in the current edition of the Threshold Limit Values published by the American Conference of Governmental Industrial Hygienists (ACGIH).

[Back to Top](#)

Registration of contractor

6. (1) A person, firm, corporation or other entity shall not enter into, engage in or work at the business of asbestos removal unless the person, firm, corporation or other entity is the holder of a valid asbestos abatement contractor's certificate.

(2) The application for an asbestos abatement contractor's certificate shall be made to the assistant deputy minister.

(3) The contractor's asbestos abatement certificate may be granted if the applicant or the applicant's agent

- (a) has completed a course in asbestos abatement and is qualified;
- (b) has employees who have completed a course in asbestos removal and are qualified; and
- (c) has the necessary control equipment available for use as described in these regulations.

(4) Notwithstanding subsection (1), persons, firms, corporations or other entities who perform limited asbestos removal work in the routine maintenance of their own property or usual place of business using their own employees need not be registered, provided the abatement work is performed and supervised by persons who are trained under section 7.

[Back to Top](#)

Worker training

7. (1) A person shall not engage in any work in connection with asbestos abatement unless the person has either

- (a) successfully completed a course of training and is qualified;
- (b) is one of a crew supervised by a qualified person and has completed a program of on-site training provided by a qualified worker in keeping with Schedule B.
- (2) This education and training shall be provided by the employer.
- (3) Five workers shall be the maximum receiving training under each supervisor.

(4) The owner or contractor shall be required to demonstrate that each asbestos abatement worker has received the necessary training.

(5) Workers who ordinarily work with asbestos or are likely to be exposed to airborne asbestos shall be informed of the hazards of asbestos exposure and measures to be taken to minimize the hazards.

[Back to Top](#)

Notification of division

8. The owner or contractor shall notify the Occupational Health and Safety Division in writing of the following before starting work:

- (a) nature and place of work;
- (b) type and quantity of asbestos or materials containing asbestos;
- (c) total number of workers exposed;
- (d) duration or anticipated duration of the work period; and
- (e) protective and preventive measures to be taken.

[Back to Top](#)

Identification

9. (1) Materials suspected of containing asbestos shall be handled as such, until analysis by a competent laboratory determines whether or not it does contain asbestos.

(2) A competent laboratory would use polarized-light microscopy, be able to report the percentage range as well as type of asbestos in the material and have demonstrated competence in the analysis of asbestos.

[Back to Top](#)

Workplace assessment

10. (1) Every owner or contractor to whom these regulations apply shall have an assessment to be made in writing of the exposure or likelihood of exposure of an employee to the inhalation of asbestos fibres.

(2) The assessment shall be compiled by a qualified person and consider matters including

- (a) the extent and potential extent of the exposure of an employee to the inhalation of asbestos fibres;
- (b) the measures and procedures necessary to control the exposure by means of engineering controls, work practices and hygiene practices/facilities; and
- (c) whether the asbestos is friable or non-friable.

(3) The owner or contractor shall consult with the health and safety committee or worker safety representative.

(4) Any cost borne through identification, monitoring or another associated activity for the protection of workers is the responsibility of the owner or contractor.

[Back to Top](#)

Asbestos management plan

11. (1) Each owner or contractor shall establish and implement a procedure to reduce the exposure of workers known as the asbestos management plan.

(2) Where possible the procedure shall take due account of the specific features of each workplace and shall include in written form at least the following:

- (a) a description of each operation in which asbestos dust is emitted;
- (b) a description of the specific means for controlling exposure to asbestos dust;
- (c) engineering plans, safety data sheets or other relevant technical information;
- (d) air monitoring data on the efficiency of control measures; and
- (e) a description of the work practices or administrative controls needed.

(3) Notwithstanding the removal procedures described, alternate methods such as passive containment including mini-enclosures and glove bags are permitted to minimize the generation of airborne asbestos fibre and control asbestos exposure to an appropriate level.

(4) Contractors, engaged to work in a plant where asbestos material is the principal product of plant operation, shall adhere to the plant's asbestos plan and additional measures acceptable to the minister which minimize the generation of asbestos dust and prevent exposure to airborne asbestos fibres by their workers.

[Back to Top](#)

Preparation of work area

12. (1) The owner or contractor shall ensure that isolation of the worksite heating and ventilation system is carried out first to prevent contamination and fibre dispersal to other areas of the structure during stripping.

(2) The systems referred to in subsection (1) shall be switched off, openings into the work area shall be sealed off with polyethylene sheeting.

(3) The owner or contractor shall prepare the work area by removing all moveable equipment and miscellaneous items.

(4) Floors, walls and any remaining furniture shall be sealed with a double shroud of polyethylene sheeting and any damage to the polyethylene draping that occurs as the work proceeds shall be repaired immediately.

(5) The owner or contractor shall then isolate the removal area in order to restrict access.

(6) Except in very unusual circumstances, there shall be only one route between the decontamination area and the immediate work area.

(7) An "air lock" shall be constructed at the entrance to the immediate work area, the doors of which shall consist of layers of polyethylene with at least a one metre overlap.

(8) The sheets referred to in subsection (7) shall be weighted at the bottom to keep the flaps closed.

(9) A decontamination area shall be set up adjacent to the entrance to the actual work area consisting of an enclosed corridor, if required, leading to an enclosed shower area which shall be followed by a clean change room.

(10) The shower area shall be provided with a hot and cold water supply and an adequate supply of clean towels for each work shift.

(11) Cleaning of equipment and materials shall be performed inside the containment area.

(12) Toilet facilities shall exist in the work area to avoid decontamination for this purpose and where those facilities do not exist, the owner or contractor shall provide portable service.

(13) Electrical power connections to the permanent fixtures shall be disconnected but temporary connections may be made for illumination purposes and the operation of asbestos removal equipment.

(14) Every precaution shall be taken to avoid electrical shock utilizing ground fault protection.

(15) Ceiling mounted objects such as lights, partitions and other fixtures shall be removed immediately before the actual asbestos removal operation, which may result in contact with the ceiling resulting in potential significant exposure so the precautions required for removal, i.e. personal protective equipment for workers and onlookers, decontamination and similar, shall be observed.

(16) Light water spraying, as opposed to saturation, should be adequate to retard fibre dispersal during electrical fixture removal.

(17) Signs shall be posted in prominent locations around the outermost entrances to the work area to warn of the asbestos hazard within, and to indicate that only authorized personnel may enter.

(18) Hand painted signs shall be prohibited.

[Back to Top](#)

Removal procedure

13. (1) The owner or contractor shall provide ventilation during the complete removal process to ensure that the enclosure is under adequate negative pressure, at least 5 pascals (-0.02 inches H₂ O).

(2) The volume of air shall be such that the air exchange rate is a minimum of 4 air changes an hour.

(3) The ventilation system shall be of a type designed for use in toxic environments and shall have properly maintained HEPA filters in place.

(4) Smoke testing shall be conducted before commencement of the work shift to ensure integrity of the enclosure and prevent fibres from being released outside of the enclosure.

(5) Asbestos containing material shall be thoroughly sprayed with amended water, left untouched for several hours and resprayed immediately before beginning removal in order to ensure that the material has been saturated.

(6) Systematic puncturing of surfaces which are coated with a water resistant material is recommended to allow water penetration.

(7) Fallen material should be wet enough that water can easily be squeezed from it by hand.

(8) Removal should proceed in small sections.

(9) After stripping, fallen material shall be scraped into piles with a rubber blade and immediately shovelled, wet, into 6 mil or thicker polyethylene bags double bagged which have been mounted into transport containers acceptable to the minister.

(10) Labelling and transport of sealed containers of stripped material, as well as disposal, must be conducted according to the minister's specifications.

[Back to Top](#)

Encapsulation and enclosure

14. (1) Where it is considered practical to allow asbestos containing products to remain within a workplace, the use of an encapsulant shall be used to prevent fibre release into the workplace.

(2) Where an encapsulant has been used, the owner or contractor shall develop a maintenance program that includes

- (a) identification of the product with labels that identify presence of asbestos;
- (b) training of workers on the product and special precautions and procedures required during maintenance; and
- (c) inspection procedures and schedules to assess potential for fibre release.

(3) Encapsulants, penetrating or bridging types as appropriate, shall be applied over the surface of the asbestos containing material using airless spray equipment.

(4) Enclosure methods will vary according to the needs of each individual situation, but in all cases every effort shall be made to minimize the disturbance of asbestos containing material during the enclosure operation.

(5) Periodic visual inspections and air sampling shall be performed.

[Back to Top](#)

Air monitoring of workplace

15. (1) The owner or contractor shall demonstrate through air sampling that engineering controls and respirators are adequate for the asbestos hazards encountered.

(2) Air sampling shall include

(a) sampling around control areas to detect leakage during removal; and

(b) sampling after asbestos cleanup before control areas are removed.

(3) The owner or contractor shall use an approved air sampling method which may include the membrane filter method with analysis by phase-contrast microscopy.

(4) Personnel engaged in airborne fibre sampling/analysis shall have demonstrated competence through participation in an appropriate quality control program.

[Back to Top](#)

Respiratory

16. (1) The owner or contractor shall ensure that respirators are provided, maintained, inspected and tested in accordance with CSA Standard Z94.4-M1982, Selection, Care and Use of Respirators, as periodically updated.

(2) The owner or contractor shall provide positive air purifying respirators or supply air respirators with full face piece to employees who remove asbestos containing products from a machine, building or structure.

(3) Where operations are such that the possibility of asbestos fibres being released into ambient air is negligible, the owner or contractor may provide a negative pressure half face piece respirator to the worker.

(4) For the purpose of subsection (3), operations with a negligible probability of fibre released to ambient air are

(a) sampling bulk material for identification; and

(b) removal of a short section of pipe insulation using glove bag procedures.

[Back to Top](#)

Personal protective equipment

17. (1) Where employees' personal clothing may become contaminated with asbestos dust, the owner or contractor shall provide and pay for appropriate work clothing, which shall not be worn outside the workplace.

(2) Subsection (1) shall be satisfied through the use of disposable clothing consisting of

(a) full body coveralls complete with hood, appropriate footwear and disposable gloves; and

(b) an approved respirator.

(3) Disposable protective clothing shall not be removed from the control area and shall be discarded as asbestos waste as necessary when torn or when the shift has been completed.

(4) Notwithstanding subsection (1), the assistant deputy minister may approve in writing the use of other clothing where the owner or contractor has provided an acceptable program of cleaning and sanitizing and this program provides equivalent protection as outlined in subsection (1).

(5) The handling and cleaning of used work clothing and special protective clothing shall be carried out under controlled conditions to prevent the release of asbestos dust.

(6) The owner or contractor shall be responsible for the cleaning, maintenance and storage of work clothing, special clothing and personal protective equipment.

[Back to Top](#)

Personal hygiene

18. (1) The owner or contractor shall provide facilities for employees exposed to asbestos to wash, take a bath or shower at the workplace.

(2) All employees who enter the work enclosure shall shower before leaving the enclosure.

[Back to Top](#)

Decontamination

19. (1) Decontamination shall be required for all persons leaving the work area after removal has begun.

(2) Work clothes shall be removed in and left in the work area or in a storage room constructed of polyethylene sheeting between the work area and shower room.

(3) Respiratory protection, however, shall be removed only as the individual enters the shower.

(4) After thorough showering the individual may enter the change room, dress and leave the site.

(5) In the case of serious injury to a person in the work area, and in this case only, decontamination procedures may be waived in the interests of obtaining medical aid.

(6) At the end of the job, equipment shall be passed through the decontamination route and be wet cleaned so that there is no visible contamination.

[Back to Top](#)

Cleanup

20. (1) Workers involved in cleanup and onlookers shall use personal protective equipment and respiratory protection.

(2) The owner or contractor shall ensure that areas are thoroughly cleaned and cleanup demonstrated by air sampling before removal of containment.

(3) All polyethylene sheeting, tape, etc. used to construct barriers and used disposal protective equipment and similar shall be sealed in 6 mil polyethylene and handled according to the minister's specification for labelling and disposing of asbestos-containing materials.

(4) The showers shall be dismantled and removed last in order that they may be used by workers engaged in the cleanup procedures.

(5) After completion of the job and gross cleanup of disposable materials, the entire area shall be wet cleaned and repeated as necessary.

[Back to Top](#)

Transport and disposal

21. (1) The owner or contractor shall produce a disposal permit from the minister.

(2) Disposal of asbestos shall conform to the requirements of the minister.

(3) Appropriate measures shall be taken by the owner or contractor to prevent pollution of the general environment by asbestos dust released from the workplace.

[Back to Top](#)

Precautions

22. (1) Every owner or contractor shall take all necessary measures and procedures by means of engineering controls, work practices, hygiene practices and facilities to ensure that the exposure of an employee to airborne asbestos is reduced to the lowest practical level and in any case shall not exceed current threshold limit values as issued by the ACGIH.

(2) Every owner or contractor shall work in compliance with the work practices and hygiene practices of these regulations.

(3) Where respiratory equipment is provided by an owner or contractor and used by an employee, the respiratory equipment shall be appropriate in the circumstances for the type and the concentration of airborne asbestos and shall meet or exceed the requirements set out in section 16.

[Back to Top](#)

Medical monitoring

23. (1) A worker, at the expense of the owner or contractor, may be required to undergo medical examinations as required by the chief occupational medical officer.

(2) The worker submitting to medical supervision shall have

(a) confidentiality of personal and medical information; and

(b) full explanations of purposes and results of the supervision.

(3) Workers shall be informed of the results of their medical examination.

(4) Copies of the worker's medical records shall be made available to the worker or, upon the request of the worker, his or her physician.

[Back to Top](#)

Record of employees

24. (1) The owner or contractor shall establish and maintain an accurate record for each employee.

(2) The record referred to in subsection (1) may contain the following:

(a) physician's report from examinations performed;

(b) detailed work history; and

(c) training records of employee.

(3) The owner or contractor shall ensure that all employee records shall be maintained for a period as may be required by the assistant deputy minister.

[Back to Top](#)

Exemption

25. Where, in the opinion of the minister, circumstances exist making compliance with these regulations or a section of these regulations impractical, the minister may grant an exemption from compliance with these regulations or a section of them, in individual cases where, in the opinion of the minister the exemption is consistent with safe practices.

[Back to Top](#)

Repeal

26. The *Asbestos Abatement Code of Practice*, Consolidated Newfoundland Regulation 1147/96, is repealed.

[Back to Top](#)

Schedule A

Three Day Training

- I.** Introduction to the Course.
- II.** Characteristics of Asbestos/Recognition
 - A. Introduction to asbestos
 - B. Uses and applications
 - C. Primary areas where asbestos containing materials are found
 - D. Exposure factors
 - E. Aerodynamics of asbestos
 - F. Identification of asbestos-containing materials.
- III .** Health Effects of Asbestos Exposure
 - A. History of medical knowledge about asbestos
 - B. Normal respiratory function, anatomy and defense mechanisms
 - C. Diseases associated with asbestos exposure
 - D. Medical surveillance.
- IV.** Respiratory Protection 2.75 hours
 - A. History of respirator usage
 - B. Respirators used for asbestos work
 - 1. Air purifying
 - 2. Powered air purifying (PAPR)
 - 3. Type "C" or supplied air
 - C. Guidelines for use of respiratory protection
 - D. Training in respirator use, maintenance and inspection
 - E. OSHA requirements for an approved respiratory protection program.
- V.** Control Methods.
- VI.** Elements of a Worker Protection Program
 - A. Air monitoring
 - B. Survey techniques for identification of asbestos containing materials

C. Respiratory protection -overview

D. Personal hygiene

E. Decontamination procedures -overview.

VII . Work Procedures for Removal, Repair and Abatement of Asbestos-Containing Materials

A. Outline for proper procedures

1. Setting up the work area
2. Preparing the job
3. Removal of asbestos-containing materials
4. Cleanup
5. Waste disposal
6. Decontamination procedures.

VIII. Regulations

A. Federal agencies and regulations

1. OSHA asbestos standard
2. Employer and employee responsibility in safety and health

B. Local agencies and regulations.

IX. Safety Factors on Asbestos Maintenance and Repair Jobs

A. Ladders and scaffolding

B. Electrical hazards

C. Emergency procedures

D. Heat stress

E. Non-asbestos air contaminants

F. Fire and explosion hazards

G. Slips, trip and falls

H. Confined spaces.

X. Work Practices Practical Experience (hands-on with skill testing).

XI. Review of Key Elements of Course 1/2 hour

A. Job set-up

B. Removal and/or sealing materials

C. Waste disposal

D. Cleanup

E. Decontamination

F. Respirator fit testing

G. Glove bags.

XII. Evaluation

A. Exam.

[Back to Top](#)

Schedule B

One Day Training

Asbestos Production and Uses

Friable and Non-Friable Products

Friable Sprayed Products Used in Buildings

Insulation used on Mechanical Systems

Health Effects -Occupational and Non-Occupational

Regulations

Classifications of Asbestos Work

Worker Protection

Respiratory Protection

The Respirator Program

Protective Clothing

Respirator Fit Testing

Hands-on Training (Glove Bag Methods, Small Enclosure)

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