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| **Section Cover Page** |
|  **Section 02 82 01** **Asbestos Control****2018-01-22 General Requirements** |

Use this Section, as applicable, in conjunction with Section 02 82 05 - Asbestos Containment Procedures, Section 02 82 33 - Asbestos Removal, and Section 02 82 15 - Asbestos Encapsulation.

Edit this Section only in consultation with Infrastructure specialists in asbestos control procedures.

This Technical Specification Section contains:

.1 This Cover Sheet

.2 Data Sheet ‑ General

.3 Specification Section Text:

**1. General**

1.1 Intent

1.2 Related Work Not Provided Under This Contract

1.3 Related Sections

1.4 Reference Documents

1.5 Definitions

* 1. Worker Qualifications
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3.2 Asbestos [Removal] [Encapsulation]

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3.6 Worker Decontamination

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3.8 Final Cleaning

## CONTRACT PLANNING

There are two options available for contracting for asbestos control work in connection with Infrastructure work:

Option 1: Infrastructure contracts for asbestos control work under a single contract with an asbestos control contractor.

Option 2: Infrastructure contracts for asbestos control work as a subcontract under a renovation contract.

Select the contracting option most appropriate for the project and edit this Section to suit the option selected.

## INDUSTRIAL WASTE CLASSIFICATION

Asbestos is classified as a dangerous good and the waste must be transported in accordance with:

.1 Alberta Environment and Parks Guidelines for Disposal of Asbestos Waste

.2 Alberta Environment and Parks User Guide for Waste Managers

.3 Environmental Protection and Enhancement Act (Alberta)

.4 Dangerous Goods Transportation and Handling Act (Alberta) and regulations

.5 Transportation of Dangerous Goods Act, 1992 (Canada)

The owner of the property (i.e., the Province) is considered to be the waste generator. Contact Infrastructure, Technical Resources Branch for more information.

1. General

1.1 INTENT

.1 This Section specifies general requirements common to all asbestos control work. Read this section in conjunction with related Sections that specify requirements for specific procedures and methods for asbestos control.

1.2 RELATED WORK NOT PROVIDED UNDER THIS CONTRACT

SPEC NOTE:  Coordinate this article with Division 01 requirements on user occupancy.

.1 Following related work will be performed by Province's own forces or by user:

.1 moving of removable furniture and equipment from asbestos control area before work begins.

.2 [                                   ].

* 1. RELATED SECTIONS

SPEC NOTE:  Retain only Sections applicable project.

.1 Asbestos Containment Procedures: Section 02 82 05.

.2 Asbestos Encapsulation: Section 02 82 15.

.3 Asbestos Removal: Section 02 82 33.

* 1. REFERENCE DOCUMENTS

.1 Alberta Asbestos Abatement Manual, Current Edition, available online from Alberta Labour.

.2 Alberta User Guide for Waste Managers, available online from Alberta Environment and Parks.

.3 Guidelines for the Disposal of Asbestos Waste, available online from Alberta Environment and Parks.

.3 CAN/CGSB-1.205-03, Sealer for Application to Asbestos-Fibre-Releasing Materials.

.4 CAN/CGSB-43.150-97, Performance Packaging for Transportation of Dangerous Goods.

1.5 DEFINITIONS

.1 Asbestos Control Work:  means asbestos containment procedures, removal or encapsulation, and disposal of asbestos or materials containing asbestos, as specified.

.2 Asbestos Control Area:  means space in which asbestos control work is being performed and to which general access is prohibited.

.3 Asbestos Waste:  means removed contaminant and contaminated materials or products.

.4 Contaminant:  means asbestos material.

.5 Contaminated:  describes products, by-products, or material containing, or affected by, asbestos or removal thereof.

.6 Full Containment Procedures:  means construction of temporary facilities and following of procedures to contain asbestos fibres, as specified in Section 02 82 05.

.7 HEPA Filter:  high efficiency particulate air filter, removing not less than 99.97% of particles measuring 0.3 microns and larger, for powered respirators, vacuums, vacuum trucks and negative air units.

.8 P100 Filter:  high efficiency, oil proof, particulate air filter, removing not less than 99.97% of particles measuring 0.3 microns and larger, for non-powered air purifying respirators.

**1.6 WORKER QUALIFICATIONS**

.1 All workers involved in high-risk asbestos abatement projects must have completed an asbestos abatement course of at least 14 hours in duration and is approved by Alberta Labour. The worker must be in possession of a valid asbestos worker card at all times.

.2 Workers involved in low or moderate-risk asbestos abatement projects do not require an asbestos worker card but should be trained with the following:

.1 health hazards associated with exposure to asbestos.

.2 responsibility of workers, employers, contractors and suppliers under the Occupational Health and Safety Act.

.3 asbestos requirements in Part 4 of the OHS Code.

.4 safe work procedures related to the work.

.5 how to properly wear, use and maintain personal protective equipment that will be used at the work site.

.3 At least one employee who will be performing the work shall have completed a standard first aid course and meet the minimum requirements for first aiders as required by Alberta Occupational Health and Safety Act.

.4 Persons involved in loading, transportation, uploading, and disposal of asbestos waste shall have been trained in accordance with the Dangerous Goods Transportation and Handling Act.

SPEC NOTE:  Contact Infrastructure to determine if paragraphs 1.6.5, 1.6.6 or 1.6.7 are required.

.5 Workers shall attend an asbestos awareness session conducted by the [Province’s own forces] [Environmental Consultant] prior to the start of asbestos control work, to obtain:

.1 information describing the medical effects of asbestos exposure,

.2 information regarding the proper use of respirators and other personal protection equipment, and

.3 instructions as to the proper asbestos removal and disposal procedures for this project.

.6 Non-certified workers such as heavy equipment operators may be used for loading and transporting the asbestos-containing debris to an approved sanitary landfill site. These workers require asbestos awareness and dangerous goods training as specified in this Section.

.7 Workers are required to attend an asbestos awareness session conducted by the [Province’s own forces] [Environmental Consultant] prior to start of asbestos control work. The purpose of this session is to educate workers about the medical effects of asbestos exposure, provide instructions on the proper use of respirators and other personal protection equipment and on proper asbestos removal and disposal procedures for this project.

1.7 SUBMITTALS

SPEC NOTE:  Edit paragraph 1.7.1 to suit project.

.1 Comply with requirements of [this Section and] Division 01. Provide submittals to [Province’s own forces] [Environmental Consultant] for review and approval prior to start of asbestos control work.

.2 Submit copy of test results documenting Dioctyl Phthalate (DOP) testing or its equivalent, of HEPA filtered vacuums and negative air units.

.3 Submit certification that HEPA filtered vacuums required for this contract meet specified HEPA filter designation for component filter assemblies.

.4 Submit disposal procedure for contaminant and contaminated waste.

.5 Submit a copy of "Code of Practice" for the work, required by the Occupational Health and Safety Act.

.6 Submit a copy of worker protection information which will be provided to employees.

.7 Submit plan for air monitoring to ensure use of proper respirators within work area.

.8 Submit proof that Occupational Health and Safety has been notified, a minimum of 72 hours before asbestos control work is to be performed. The OHS Contact Center telephone number is 1-866-415-8690.

.9 Submit proof that all persons involved in the handling, packing, loading, transportation, unloading, and disposal of asbestos waste are trained in accordance with the Dangerous Goods Transportation and Handling Act.

SPEC NOTE:  Use following clause when asbestos control work is part of a larger renovation contract. If asbestos control work is the primary element of the contract, delete this clause and specify all schedule requirements in Division 01.

.10 Provide sub-schedule for asbestos control work.

SPEC NOTE:  Include the following clause only if Section 02 82 05, Asbestos Containment Procedures, is used. If tender documents provide detailed documentation required under Asbestos Control Plan, edit submittal requirements accordingly.

.11 Prior to commencement of work on site, submit an Asbestos Control Plan. Include the following information:

1. Locations of:

.1 asbestos control areas

.2 change rooms

.3 isolation/containment barriers

.4 decontamination facilities

.5 negative air units

.6 exhaust for negative air units

.2 Layout of change rooms.

.3 Sequencing of asbestos related work.

SPEC NOTE:  Include the following clause only if Section 02 82 33, Asbestos Removal, is used.

.12 Prior to start of asbestos removal, submit product data for proposed surfactant.

SPEC NOTE:  Include the following clause only if Section 02 82 15, Asbestos Encapsulation, is used.

.13 Submit product data for proposed encapsulating sealant.

1.8 REGULATORY REQUIREMENTS

.1 Comply with the following legislation and regulations:

.1 Environmental Protection Act (Canada).

.2 Environmental Protection and Enhancement Act (Alberta).

.3 Occupational Health and Safety Act, Regulation and Code (Alberta).

.4 Transportation of Dangerous Goods Act, 1992 (Canada).

.5 Dangerous Goods Transportation and Handling Act (Alberta) and regulations.

.6 Other legislation and regulations which apply to the performance of asbestos control work.

1.9 MONITORING AND INSPECTION BY PROVINCE

.1 [Province’s own forces] [Environmental Consultant] will perform the following:

.1 review contractor’s submittals including "Code of Practice".

.2 measure asbestos fibre levels inside and outside asbestos control area prior to commencement of asbestos control work. Post air results at site.

.3 inspect negative air units and HEPA vacuums prior to commencement of asbestos control work.

.4 monitor air outside asbestos control area and where Glovebag removal method is used. Monitor air prior to, during, and after asbestos control work.

.5 monitor asbestos fibre levels inside asbestos control area prior to removal of barriers.

.2 [Province’s own forces] [Environmental Consultant] engaged to perform air monitoring is authorized to identify deficiencies in the asbestos control work and provide site instructions to ensure compliance with Contract requirements.

.3 In the event that airborne asbestos fibres exceed acceptable level, [Province’s own forces] [Environmental Consultant] may stop work until corrective actions have been taken and airborne fibres return to acceptable level.

.4 [Province’s own forces] [Environmental Consultant] may stop work where he has reasonable cause to believe that:

.1 fibre levels inside asbestos control area are unacceptable, or

.2 work conditions and practice may lead to:

.1 contamination of building with asbestos,

.2 asbestos exposure to building occupants, or

.3 release of asbestos fibres into the environment.

1.10 TESTING AND AIR MONITORING BY CONTRACTOR

.1 Appoint and pay for services of a testing agency to perform Dioctyl Phthalate (DOP) testing or its equivalent on completed installation of negative air units and HEPA vacuums, in accordance with the test procedures outlined in the Alberta Asbestos Abatement Manual (current edition).

.2 Test prior to commencement of asbestos removal.

.3 Use only negative air units and HEPA vacuums tested and inspected as specified.

1.11 AIRBORNE FIBRE LEVELS

.1 In areas outside asbestos control area and where full containment procedures are not required, airborne fibre levels shall not exceed 0.01 fibers per cubic centimeter of air.

.2 In areas inside asbestos control area where full containment procedures are followed including during set up and tear down, airborne fibre levels shall not exceed acceptable limits for type of respirators being used.

1.12 PROTECTION OF PERSONNEL

.1 Provide workers with respirators and hooded disposable coveralls conforming to Occupational Health and Safety Regulations for the airborne asbestos fibre levels that are present during asbestos control work.

.2 Do not permit smoking, eating or drinking in work area.

.3 Provide the following to employees involved in asbestos control work:

.1 written information describing potential health hazards related to exposure to asbestos fibre.

.2 written instructions describing safe work procedures.

.4 Where full containment procedures are not required, do the following:

.1 comply with regulatory requirements.

.2 provide workers with not less than a non-powered pre-fitted half-mask respirator equipped with P100 filters and hooded disposable coveralls. Coveralls shall fit snugly around neck, wrists and ankles.

.3 allow no one in the removal area during asbestos control work unless wearing disposable coveralls and respirator equipped with P100 filters or as required to protect against reported fibre levels.

.5 Provide the following safety equipment for [Province’s own forces] [Environmental Consultant], as required to permit ready and safe access to the work:

.1 disposable coveralls made of material that resists penetration by asbestos fibres.

.2 rubber boots or easily decontaminated footwear.

.3 caps.

.4 eye protection.

.5 gloves.

.6 hard hats.

.7 non-powered half mask respirator equipped with P100 filters (minimum) or as required to protect against reported fibre levels.

2. Products

2.1 MATERIAL AND EQUIPMENT

.1 Amended Water:  water containing a surfactant to reduce water surface tension. Surfactant added at a concentration to provide penetration and wetting of asbestos fibres. Use the following 50% polyoxyethylene ester and 50% polyoxyethylene ether.

.2 Sealer for lock down:  to CAN/CGSB‑1.205‑03, Sealer for Application to Asbestos-Fibre-Releasing Materials, Class A - water-based, for spray application that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.

.3 Vacuums:  HEPA filtered wet/dry type, with accessories adequate to perform removal and cleanup work.

2.2 ASBESTOS DISPOSAL CONTAINERS

.1 Plastic Bags:  to CAN/CGSB-43.150, minimum 150 micrometer thick sheet polyethylene. Bag seams shall be sufficiently strong to resist pressure and shocks that occur under normal conditions of transport. Designed and manufactured to contain a maximum net mass of 50 kg.

.2 Drums:  to CAN/CGSB-43.150, sturdy non‑reusable, steel (1A2), aluminum (1B2), or plastic (1H2), with tight fitting lids.

.3 Sheet Polyethylene: two separate layers, minimum 150 micrometer thick, each layer sealed with water-resistant plastic duct tape.

.4 Label containers with labels stating "CONTAINS ASBESTOS, CANCER HAZARD, AVOID BREATHING DUST".

.5 Duct Tape: Good quality, water resistant plastic type.

2.3 WARNING SIGNS

.1 Provide warning signs which state as follows and provide the name of a contact person on-site:

.1 caution asbestos dust hazard.

.2 avoid breathing dust, wear protective equipment

.3 breathing asbestos duct may cause cancer

.4 entry is prohibited except to authorized persons.

.5 drinking, eating and smoking are prohibited in this area.

.2 Obtain [Province] [Environmental Consultant] approval of warning sign wording, legibility and location.

3. Execution

3.1 PREPARATION

.1 Asbestos control work may commence only after the following have been completed:

.1 existing property, including non-removable equipment and furnishings, surfaces and finishes, have been protected from damage and contamination due to asbestos control work.

.2 HVAC system has been [deactivated] [isolated] and sealed to prevent asbestos fibres from entering the system.

.3 electrical system has been isolated.

.4 barriers are in place.

.5 decontamination facilities are in place and operational.

.6 negative pressure ventilation system has been installed and certified acceptable by testing agency.

.7 warning signs have been placed around perimeter of asbestos control area and at each potential entrance to the area.

.8 [Province’s own forces] [Environmental Consultant] has inspected and approved preparations.

.9 Notice of project has been filed with Workplace Health and Safety and an acceptance has been granted.

**OR**

SPEC NOTE:  Delete above clauses and specify the following if full containment procedures are not specified.

.1 Asbestos control work may commence only after the following have been completed:

.1 existing property, including non-removable equipment and furnishings, surfaces and finishes, have been protected from damage and contamination due to asbestos control work.

.2 barriers are in place and work area has been isolated.

.3 warning signs have been placed around perimeter of asbestos control area and at each potential entrance to the area.

.4 [Province’s own forces] [Environmental Consultant] has inspected and approved preparations.

.5 Notice of project has been filed with Workplace Health and Safety and an acceptance has been granted.

3.2 ASBESTOS [REMOVAL] [ENCAPSULATION]

SPEC NOTE:  Edit this article to suit scope of asbestos control work.

.1 Refer to Section 02 82 33 for asbestos removal requirements.

.2 Refer to Section 02 82 15 for asbestos encapsulation requirements.

3.3 PREPARATION FOR ASBESTOS DISPOSAL

.1 Prepare [contaminant and] contaminated materials for disposal as follows:

.1 place in double bagged plastic asbestos disposal bags or inside disposable drums with tight fitting lids.

.2 wrap bulk materials that do not lend themselves to disposal in plastic bags or drums, in sheet polyethylene. (2 separately sealed layers)

.3 the resulting package must be constructed, filled and closed so that, under normal conditions of handling and transport, there will be no discharge, emission or escape of the dangerous goods form the package or small container that could constitute a danger to public safety.

.2 Transfer asbestos waste containers and normal construction waste from asbestos control area for disposal, in accordance with procedures described in the following documents.

.1 Alberta Asbestos Abatement Manual, Current Edition, available online from Alberta Labour.

.2 Guidelines for the Disposal of Asbestos Waste, available online from Alberta Environment and Parks.

.3 Section 02 82 33 – Asbestos Removal.

.4 Where more than one document addresses an issue, the most stringent requirements shall apply.

.3 Treat contaminated water as asbestos waste.

3.4 DISPOSAL OF NORMAL CONSTRUCTION WASTE

.1 This article applies to materials not readily prepared for asbestos disposal as specified, and being capable of thorough cleaning, for example, bulky mechanical equipment.

.2 Clean materials until free of visible asbestos, wash, and dip in or spray with asbestos sealer.

.3 Dispose of as normal construction waste.

3.5 TRANSPORTATION AND PERMANENT DISPOSAL of ASBESTOS WASTE

.1 Transport asbestos waste in accordance with Alberta and Federal legislation and regulations.

.2 Ensure that all materials are properly packaged and labeled prior to transportation. Each container must be marked in accordance with the Dangerous Goods Transportation and Handling Act showing the shipping name [(Blue or Brown Asbestos)] [(White Asbestos)] and product identification number [(UN2212)] [(UN2590)].

SPEC NOTE:  Blue Asbestos or Brown Asbestos UN2212, White Asbestos UN2590

.3 Transport hazardous waste materials in properly placarded vehicles.

.4 Transport asbestos waste in a manner which will prevent asbestos fibres from becoming airborne.

.5 Each load shall be accompanied by a properly completed non-hazardous waste manifest satisfactory to the authority having jurisdiction.

.6 Dispose of asbestos waste in a supervised, approved sanitary landfill site.

.7 Make arrangements with operator of landfill site in advance to receive asbestos waste material.

.8 In event of leakage or spillage enroute, repackage material before continuing transport to landfill.

.9 If spill, emission or discharge of waste asbestos is in excess of 25 kg (or 25L) from the transport unit, immediately report the incident to the local police and appropriate provincial authority at 1-800-272-9600.

.10 Place asbestos waste containers intact in excavated area. Do not dump or throw containers from truck. Repackage contents of containers that have broken open, in accordance with requirements for preparation for asbestos disposal.

.11 Arrange for asbestos waste to be covered with soil.

.12 Provide the [Province] [Environmental Consultant] with a copy of each waste manifest once asbestos waste has been disposed of at a supervised, approved landfill site.

3.6 WORKER DECONTAMINATION

.1 Workers shall follow decontamination procedures as outlined in the ""Code of Practice" [and as specified].

SPEC NOTE:  Delete remainder of this article if Glovebag removal method is not a Contractor option.

.2 Prior to leaving area where asbestos has been removed by method not requiring full containment, vacuum using HEPA filtered vacuum or wet wipe in coveralls. Dispose of coveralls and wiping rags into polyethylene bags as asbestos waste.

.3 Immediately upon leaving area where asbestos has been removed by method not requiring full containment, perform the following:

.1 Proceed to nearest shower outside work area and, with respirator in place, shower head and face prior to removal of respirator. If a shower is not available, wash head thoroughly, including exterior of respirator, prior to removing respirator.

.2 Dispose of respirator filters as asbestos waste.

3.7 DAILY CLEANING

.1 Progressively containerize contaminant and contaminated material as removal work progresses. Do not permit asbestos waste to accumulate.

.2 Keep contaminant and contaminated material damp to minimize generation of airborne asbestos fibres.

.3 Remove asbestos waste from asbestos control area at least once per day.

.4 Regularly check, clean and replace filters as necessary.

3.8 FINAL CLEANING

.1 Upon completion of asbestos control work, perform the following:

.1 Remove asbestos waste from work site.

.2 Vacuum and wash contaminated tools and equipment and bag in clear 2 mil bags.

.3 Dispose of non‑reusable materials and contaminated materials as asbestos waste.

.4 Clean site to original condition.

.5 Make good any damage resulting from the asbestos control work, to the satisfaction of the [Province] [Environmental Consultant].

**END OF SECTION**