

DEPARTMENT OF NATIONAL DEFENCE

SPECIFICATION

STANDING OFFER AGREEMENT FOR
ASBESTOS/MOULD ABATEMENT IN VARIOUS BUILDINGS

17 WING
WINNIPEG, MANITOBA

JOB NO. L-W115-9900/SOA C358 (13)

DATED: 2012-11-19

<u>SECTION NUMBER</u>	<u>TITLE</u>	<u>PAGES</u>
<u>DIVISION 1 - GENERAL REQUIREMENTS</u>		
Section 01005	General Requirements	4
Section 01410	Testing Laboratory Service for Asbestos Abatement	1
Section 01500	Temporary Facilities	1
Section 01546	Fire Safety Requirements	3
Section 01600	Materials and Equipment	1
Section 01710	Cleaning	1
<u>DIVISION 13 - SPECIAL CONSTRUCTION</u>		
Section 13570	Asbestos/Mould Abatement	16
Section 13571	Asbestos Abatement, PVC Bag Method	6
Section 13576	Asbestos Abatement, Asbestos Cement Products	3

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| <u>1 Description of Work</u> | .1 | Work under this Standing Offer covers the abatement of asbestos/mould from buildings within the 17 Wing area including satellites. |
| | .2 | Exact extent and location of work in accordance with Engineer's instructions with each request for abatement services. |
| <u>2 Work Schedule</u> | .1 | Provide prior to commencing work, schedule showing anticipated progress stages and final completion of work. |
| | .2 | Interim reviews of work progress based on work schedule will be conducted as decided by Engineer and schedule updated by Contractor in conjunction with and to approval of Engineer. |
| | .3 | Work may be requested: <ul style="list-style-type: none">.1 During normal working hours, 7:30 am through 4:00 pm on working days Monday to Friday..2 Outside normal working hours, 4:00 pm to 7:30 am on working days..3 All hours during weekends and holidays. |
| <u>3 Contractor's Use of Site</u> | .1 | Use of Site: <ul style="list-style-type: none">.1 Access directly to and from site subject to:<ul style="list-style-type: none">.1 Traffic regulations established by the Department of National Defence (DND)..2 Security regulations established by DND. |
| | .2 | Use of Site: limited to areas for work and storage as requested by Engineer. |
| | .3 | Do not unreasonably encumber site with materials or equipment. |
| | .4 | Move stored products or equipment which interfere with operations of Engineer or building occupants. |
| | .5 | Obtain and pay for use of additional storage or work areas needed for operation. |
| | .6 | Provide a list of all employees and suppliers, when requested, to the Wing Security and Military Police Officer. |
| <u>4 Codes and Standards</u> | .1 | Perform work in accordance with the latest edition of the National Building Code of Canada (NBC) and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply. |

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| <u>4 Codes and Standards</u>
(cont'd) | .2 | Meet or exceed requirements of contract documents, specified standards, codes and referenced documents. |
| <u>5 Cutting, Fitting and Patching</u> | .1 | Execute cutting, fitting and patching required to make work fit properly. |
| | .2 | Obtain Engineer's approval before cutting, boring or sleeving load-bearing members. |
| | .3 | Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly. |
| | .4 | Fit work airtight to pipes, sleeves, ducts and conduits. |
| <u>6 Existing Services</u> | .1 | Where work involves breaking into or connecting to existing services, carry out work at times directed by governing authorities, with minimum of disturbance to building occupants and vehicular traffic. |
| | .2 | Submit schedule to and obtain approval from Engineer for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties. |
| | .3 | Where unknown services are encountered, immediately advise Engineer and confirm findings in writing. |
| <u>7 Alterations, Additions or Repairs to Existing Building</u> | .1 | Execute work with least possible interference or disturbance to occupants, public and normal use of premises. |
| | .2 | Where security has been reduced by work of Contract, provide temporary means to maintain security. |
| | .3 | Where elevators or dumbwaiters exist in buildings, only those assigned for Contractors use may be used for moving men and material within building. Protect walls of passenger elevators to approval of Engineer before use. Accept liability for damage, safety of equipment and overloading of existing equipment. |
| | .4 | Provide temporary dust screens, barriers, warning signs in locations where renovation and alteration work is adjacent to areas used by public or government staff. |
| <u>8 Overloading</u> | .1 | Ensure no part of the work is subjected to a load which will endanger its safety or will cause permanent disfiguration. |
| <u>9 Post Award Meeting</u> | .1 | After award of SOA, the Contractor shall visit the Service Site Engineer to be given job instructions. |
| <u>10 Invoices</u> | .1 | All invoices submitted for payment shall be accompanied by MSS/DSS 942 (Requisition on SOA). |
| | .2 | Invoices are to include a breakdown as follows: |

- .1 Rates of pay and hours of work for each tradesperson.
 - .2 An itemized list of materials used, by cost, shall be shown on all invoices submitted for payment.
 - .3 Extended total.
 - .4 Where subcontracting is involved a copy of subcontractor's paid invoice shall accompany the invoice against the requisition.
 - .5 Where discount or markup is applicable, please indicate separately.
- .3 Invoices submitted for payment against this SOA that are not properly identified will be returned to the Contractor for proper annotation before certification for payment is made.

11 Unit Prices

- .1 Provide unit prices for the following:
- .1 Minimum call-up price within 30 km radius from 17 Wing \$ _____
 - .2 Extra per km outside the 30 km radius from 17 Wing \$ _____
 - .3 For asbestos removal PVC bag method refer to Section 13571; price shall include supervision, equipment, bagging and disposal of asbestos, overhead and profit:

11 Unit Prices
 (cont'd)

<u>Height of Pipes</u>	<u>Pipe Diameter</u>	<u>Thickness of Insulation</u>	<u>Unit Price Per Meter Length of Pipe</u>	<u>Estimated Quantity</u>
between 0-3m	between 12-100mm	25mm	\$ _____	100m
		50mm	\$ _____	100m
	between 100-200mm	25mm	\$ _____	50m
		50mm	\$ _____	30m
	between 200-300mm	25mm	\$ _____	10m
		50mm	\$ _____	10m
above 300mm	25mm	\$ _____	10m	
	50mm	\$ _____	10m	
between 3-6m	between 12-100mm	25mm	\$ _____	100m
		50mm	\$ _____	100m
	between 100-200mm	25mm	\$ _____	50m
		50mm	\$ _____	50m
	between 200-300mm	25mm	\$ _____	10m
		50mm	\$ _____	10m
	above 300mm	25mm	\$ _____	5m
		50mm	\$ _____	5m

.4 For asbestos/mould (refer to Section 13570): provide unit price per hour for supervisor and labour. This includes erection and dismantling of protective barrier and removal and bagging of asbestos/mould:

	<u>Type 2 Operation</u>	<u>Type 3 Operation</u>	<u>Hours Types 2/3</u>
Price per hour (0800-1600) for Labour	_____	_____	_____
Price per hour (1600-2400) for Labour	_____	_____	_____
Price per hour (0800-1600) for Supervisor	_____	_____	_____
Price per hour (1600-2400) for Supervisor	_____	_____	_____

.5 For cement asbestos shingles (refer to Section 13576): provide unit price per square meter for removal and disposal \$ _____

.6 Materials: at invoice price including federal taxes plus percentage of _____%, but not including provincial taxes. Provincial taxes to be shown separately. \$ _____

1 Appointment
and Payment

- .1 Air monitoring and inspection services are the responsibility of the Engineer.
- .2 Engineer will appoint and pay for consultant inspection and services.

2 Contractor's
Responsibilities

- .1 Furnish labour and facilities to:
 - .1 Provide access to work area for inspection and testing.
 - .2 Provide storage on site for laboratory's exclusive use to store equipment and test samples.
- .2 Notify Engineer sufficiently in advance of operations to allow for assignment of inspectors and scheduling of tests.

1 Power and
Water Supply

- .1 The Department of National Defence (DND) can provide, free of charge, temporary electric power and water for construction purposes.
- .2 Engineer will determine delivery points and quantitative limits. Engineer's written permission is required before any connection is made. Connect to existing power supply in accordance with Canadian Electrical Code.
- .3 Provide, at no cost to DND, all equipment and temporary lines to bring these services to work area.
- .4 Supply of temporary services by DND is subject to DND requirements and may be discontinued by DND site representative at any time without notice, without acceptance of any liability for damages or delay caused by such withdrawal of temporary services.

2 Signs and
Notices

- .1 Safety and Instruction Signs and Notices:
 - .1 Signs and notices for safety and instruction shall be in both official languages. Graphic symbols shall conform to CAN3-Z321-77.
- .2 Maintenance and Disposal of Site Signs:
 - .1 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Engineer.

3 Scaffolding

- .1 Construct and maintain scaffolding in rigid, secure and safe manner.
- .2 Erect scaffolding independent of walls. Remove promptly when no longer required. Refer to Section 01545 - Safety Requirements for Scaffolding.
- .3 Design and construct scaffolding in accordance with CSA S269.2-M87.

4 Removal of
Temporary Facilities

- .1 Remove temporary facilities from site when directed by Engineer.

- 1 Fire Safety Plan .1 Contractors and their personnel shall be familiar with this section and its requirements.
- 2 Fire Department Briefing .1 The Engineer shall coordinate arrangements for the Contractor to be briefed on Fire Safety at their pre-work conference by the Fire Chief before any work is commenced.
- 3 Reporting Fires .1 Know the location of nearest fire alarm box and telephone, including the emergency phone number.
- .2 Report immediately all fire incidents to the Fire Department as follows:
- .1 Activate nearest fire alarm box, or
- .2 Telephone 911 for emergency only.
- .3 Person activating fire alarm box shall remain at the box to direct Fire Department to scene of fire.
- .4 When reporting a fire by telephone, give location of fire, name or number of building and be prepared to verify the location.
- 4 Interior and Exterior Fire Protection and Alarm Systems .1 Fire protection and alarm systems shall not be:
- .1 Obstructed.
- .2 Shut-off.
- .3 Left inactive at the end of a working day or shift without notification and authorization from the Fire Chief or the Fire Chief's representative.
- .2 Fire hydrants, standpipes and hose systems shall not be used for other than fire fighting purposes unless authorized by the Fire Chief.
- 5 Fire Extinguishers .1 The Contractor shall supply fire extinguishers, as scaled by the Fire Chief, necessary to protect, in an emergency, the work in progress and the Contractor's physical plant on site.
- 6 Blockage of Roadways .1 The Fire Chief shall be advised of any work that would impede fire apparatus response. This includes violation of minimum overhead clearance, as prescribed by the Fire Chief, erecting of barricades.
- 7 Smoking Precautions .1 Smoking is not permitted in any or within 5 metres of 17 Wing buildings.

8 Rubbish and
Waste Materials

- .1 Rubbish and waste materials are to be kept to a minimum.
- .2 The burning of rubbish is prohibited.
- .3 Removal: all rubbish shall be removed from the work site at the end of the work day or shift or as directed.

9 Flammable
Liquids

- .1 The handling, storage and use of flammable liquids are to be governed by the current National Fire Code of Canada.
- .2 Flammable liquids such as gasoline, kerosene and naptha may be kept for ready use in quantities not exceeding 45 litres provided they are stored in approved safety cans bearing the Underwriter's Laboratory of Canada or Factory Mutual seal of approval. Storage of quantities of flammable liquids exceeding 45 litres for work purposes, requires the permission of the Fire Chief.
- .3 Transfer of flammable liquids is prohibited within buildings.
- .4 Transfer of flammable liquids shall not be carried out in the vicinity of open flames or any type of heat producing devices.
- .5 Flammable liquids having a flash point below 38°C such as naptha or gasoline shall not be used as solvents or cleaning agents.
- .6 Flammable waste liquids, for disposal, shall be stored in approved containers located in a safe ventilated area. Quantities are to be kept to a minimum and the Fire Department is to be notified when disposal is required.

10 Hazardous
Substances

- .1 If the work entails the use of any toxic or hazardous materials, chemicals and/or explosives, or otherwise creates a hazard to life, safety or health, work shall be in accordance with the National Fire Code of Canada.
- .2 The Fire Chief is to be advised, and a "Hot Work" permit issued in all cases involving welding, burning or the use of blow torches and salamanders, in buildings or facilities. Special precautions are necessary to safeguard life and property from damage by fire or explosives.

10 Hazardous
Substances
(cont'd)

- .3 Whenever work is being carried out in dangerous or hazardous areas involving the use of heat, fire watchers, equipped with sufficient fire extinguishers or special precautions shall be provided. The determination of dangerous or hazardous areas along with the level of precaution necessary for Fire Watch shall be at the discretion of the Fire Chief. Contractors are responsible for providing fire watch service for their work on a scale established and in conjunction with the Fire Chief at the pre-work conference.

11 Questions and/or
Clarification

- .1 Any questions or clarification on Fire Safety in addition to the above requirements shall be directed to and cleared through the Fire Chief.

1 General

- .1 Use new material unless otherwise specified.
- .2 Within seven days of written request by Engineer, submit following information for materials and equipment proposed for supply:
 - .1 name and address of manufacturer.
 - .2 trade name, model and catalogue number.
 - .3 performance, descriptive and test data.
 - .4 manufacturer's installation or application instructions.
- .3 Use products of one manufacturer for material and equipment of same type or classification unless otherwise specified.

2 Manufacturers Instructions

- .1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.
- .2 Notify Engineer in writing of any conflict between these specifications and manufacturers instructions. Engineers will designate which document is to be followed.

3 Delivery and Storage

- .1 Deliver, store and maintain packaged material with manufacturer's seals and labels intact.
- .2 Prevent damage, adulteration and soiling of material during delivery, handling and storage. Immediately remove rejected material from site.
- .3 Store material in accordance with suppliers instructions.

4 Conformance

- .1 When material is specified by standard or performance specifications, upon request of Engineer, obtain from manufacturer an independent testing laboratory report, stating that material or equipment meets or exceeds specified requirements.

1 General

- .1 Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
- .2 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .3 Prevent accumulation of waste which create hazardous conditions.

2 Materials

- .1 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

3 Cleaning During Construction

- .1 Maintain the work, at least on a daily basis, free from accumulations of waste material and debris.

4 Final Cleaning

- .1 In preparation for acceptance of the project on an interim or final certificate of completion perform final cleaning.
- .2 Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials, from interior and exterior finished surfaces including glass and other polished surfaces.
- .3 Clean lighting reflectors, lenses, and other lighting surfaces.
- .4 Broom clean paved surfaces; rake clean other surfaces og grounds.
- .5 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.
- .6 Remove snow and ice from access to building.

PART 1 - GENERAL

1.1 Air
Monitoring

- .1 From commencement of work until completion of cleaning operations air monitoring will be taken by Engineer both inside and outside the work area enclosures in accordance with Health and Welfare Canada recommendations.
- .2 If air monitoring shows that areas outside work area enclosures are contaminated these areas shall be enclosed and cleaned in the same manner as that applicable to work areas.
- .3 The results of air monitoring inside work areas shall be used to establish the type of respirators to be worn.

1.2 Definitions

- .1 HEPA vacuum: High Efficient Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in diameter at 99.97% efficiency.
- .2 Polyethylene sheeting: polyethylene sheeting of type and thickness specified sealed and tape along all edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide a continuous polyethylene membrane to protect underlying surfaces from water damage or damage by sealants, and to prevent escape of asbestos fibres through the sheeting into a clean area.
- .3 Authorized visitor: the Engineer or an approved representative and persons representing regulatory agencies.
- .4 Work areas: where actual removal, encapsulation and enclosure of spray or trowel applied asbestos containing material takes place.
- .5 Negative pressure: a system which extracts air directly from work area, filters such extracted air through a High Efficiency Particulate Air filtering system, and discharges this air directly to exterior of building.
 - .1 This system shall maintain a minimum pressure differential of 5 Pa relative to adjacent work areas, be equipped with an alarm to warn of system failure.
 - .2 Provide instrumentation to monitor and record pressure differences when building is occupied.
- .3 Rated total capacity of units with filters in place shall be sufficient to provide complete air change in work area every 15 minutes.

1.2 Definitions
(cont'd)

- .6 Amended water: water with an non-ionic surfactant wetting agent added to reduce water tension to allow thorough wetting of asbestos fibres.
- .7 Airlock: a system for permitting ingress or egress without permitting air movement between a contaminated area and an uncontaminated area,

typically consisting of two curtained doorways minimum 2 m apart.

- .8 Curtained doorway: an arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed by placing two overlapping sheets of polyethylene over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway. All free edges of polyethylene shall be reinforced with duct tape and the bottom edge shall be weighted to ensure proper closing.
- 1.3 Regulatory Agencies .1 Comply with Federal, Provincial, and local requirements pertaining to asbestos, provided that in any case of conflict among those requirements or with these specifications the more stringent requirement shall apply.
- 1.4 Submittals .1 Before commencing work:
.1 Submit proof satisfactory to Engineer that all employees have had instruction on the hazards of asbestos exposure, on respirator use, on dress, use of showers, entry and exit from work areas, and all aspects of work procedures and protective measures.
.2 The Contractor's superintendent(s) shall have attended an asbestos abatement/mould course of not less than two days duration, approved by the Engineer.
.1 Submit proof of attendance in the form of a certificate. Acceptable courses:
.1 The Association of the Wall and Ceiling Industry (AWCI).
.2 Pinchin and Associates.
.3 Ontario Research Foundation (ORTECH).
.4 Monenco Limited.
- 1.4 Submittals (cont'd) .3 Submit layout of proposed enclosures and decontamination facilities to Engineer for approval.
.4 Submit documentation including test results for encapsulant proposed for use.
.5 Obtain from the appropriate agency and submit to Engineer all necessary permits for transporting and disposal of hazardous waste. Ensure that operator is fully aware of hazardous nature of material and proper methods of disposal. Submit proof satisfactory to Engineer that suitable arrangements have been made to receive and properly dispose of hazardous waste.
.6 Submit to Engineer on a weekly basis completed copies of hazardous waste manifest for every load of hazardous waste removed from site.
- 1.5 Signs .1 Signage: signs in both official languages shall be displayed in all work areas where access to a sealed area is possible. Such signs in upper case Helvetica Medium letters shall read as follows.

"CAUTION MOULD REMOVAL AREA/CAUTION
ASBESTOS HAZARD AREA" (25 mm)
"UNAUTHORIZED ENTRY PROHIBITED" (19 mm)
"WEAR PROTECTIVE EQUIPMENT" (19 mm)

- .2 Container signs: label containers used for the disposal of asbestos as follows:

"CAUTION CONTAINS ASBESTOS FIBRES" (25 mm)
"DO NOT MISHANDLE" (19 mm)

- .1 Clearly label receptors with yellow/black labels.

1.6 Existing Conditions

- .1 Results of tests of asbestos/mould containing materials taken from surfaces within the scope of this project, are available for inspection at the Wing Construction Engineering Officer's (WCEO's) office. These are for general information only and are not necessarily representative of all asbestos/mould-containing materials contained within the scope of this project.

1.7 Worker Protection

- .1 Instructions: before commencing work instruct workers in use of respirators, dress, showers, entry and exit from work areas, and all aspects of work procedures and protective measures.

1.7 Worker Protection (cont'd)

- .2 Respirators: provide workers with personally issued and marked respiratory equipment acceptable to Labour Canada or Provincial Labour Department as suitable for the asbestos/mould exposure in the work area.
- .1 Wet removal: provide positive pressure, full facepiece, powered air purifying respirator's (PAPR) with high efficiency filters.
- .2 No worker, supervisor or authorized visitor may have facial hair which prevents proper contact between respirator facepiece and skin.
- .3 All respiratory equipment used shall be approved and labelled for protection against asbestos fibres and shall meet the design of the National Institute of Occupational Safety and Health (NIOSH) or equivalent criteria.
- .4 If disposable type filters are used provide sufficient filters so that workers can install new filters following disposal of used filters and before re-entering contaminated area.
- .3 Protective Clothing: provide workers with full body disposable type coveralls. Provide other body protection required under applicable safety regulations.
- .4 Each worker shall:
- .1 Remove street clothes in clean change room and put on respirator with new filters or reusable filters that have been tested as satisfactory, clean coveralls and head covers before entering Equipment and Access Rooms or work area. If reusable protective clothing is used each worker shall don respirator only before entering Equipment and Access Rooms where

1.7 Worker
Protection
(cont'd)

- clothing is stored. All street clothes, uncontaminated footwear, towels, and similar uncontaminated articles shall be stored in clean change room.
- .2 Remove bulk contamination from clothing before leaving work area then proceed to Equipment and Access Room and remove all clothing except respirators. Place contaminated worksuits in receptacles for disposal with other asbestos contaminated materials. Leave reusable items except respirator in Equipment and Access Room. Still wearing the respirator proceed naked to the showers. Clean outside of respirator with soap and water while showering; remove respirator; remove filters and wet them and dispose of filters in the container provided for this purpose; and wash and rinse the inside of the respirator. When not in use in the work area, store work footwear in Equipment and Access Room. Upon completion of asbestos abatement, dispose of footwear as contaminated waste or clean thoroughly inside and out using soap and water before removing from work area or from Equipment and Access Room.
 - .3 Following showering and drying off, proceed to clean change room and dress in street clothes at the end of each day's work, or in clean coveralls before eating, smoking, or drinking. If re-entering work area, follow procedures outlined in 1.7.4.1 above.
 - .4 Enter the unloading room from outside dressed in clean coveralls to remove waste containers and equipment from the Holding Room of the Container and Equipment Decontamination Enclosure system. No worker shall use this system as a means to leave or enter the work area.
 - .5 Workers shall not eat, drink, smoke or chew gum or tobacco at the work site except in established clean room. "No smoking within DND buildings". Outside smoking areas were provided.
 - .6 Workers shall be fully protected with respirators and protective clothing during all work which may disturb asbestos containing material including work prior to commencing actual asbestos removal, encapsulation or enclosure.
 - .7 Provide and post in Clean Change Room and in Equipment and Access Rooms the procedures described in 1.7 of this section, in both official languages.

1.8 Visitor
Protection

- .1 Provide protective clothing and approved respirators to authorized visitors to work areas.
- .2 Instruct authorized visitors in the use of protective clothing and respirators.
- .3 Instruct authorized visitors in proper procedures to be followed in entering into and exiting from work area.

PART 2 - PRODUCTS

2.1 Materials

- .1 Polyethylene: minimum 0.15 mm (6 mil) thick unless otherwise specified; in sheet size to minimize joints.
- .2 Rip-proof polyethylene: 0.20 mm (8 mil) fabric made up from 0.13 mm (5 mil) weave and two layers 0.04 mm (1.5 mil) poly laminate: in sheet size to minimize seams and overlaps.
- .3 Polyethylene bags: 0.15 mm (6 mil) thickness, clear or coloured and approved with a method of sealing that will prevent leakage of the asbestos fibres to the atmosphere, ie plastic coat wire ties, plastic "key" lock serrated strips, tape, etc.
- .4 Tape: fibreglass type duct tape suitable for sealing polyethylene under wet conditions using amended water, and dry conditions.
- .5 Sprayer for amended water: any garden reservoir type sprayer or airless spray equipment suitable for applying a bridging matrix capable of producing a mist of fine spray.
- .6 Wetting agent: 50% polyoxyethylene ester and 50% polyethylene ether, or other material approved by Engineer, mixed with water in a concentration to provide adequate penetration.
- .7 Asbestos waste receptors: two separate containers of which one shall consist of 0.15 mm (6 mil) minimum thickness sealable polyethylene bag. Second container may be a second 0.15 mm (6 mil) minimum thickness polyethylene bag rigid sealable container such as a metal or fibre drum. Second container shall be such to prevent any perforating rips or tears in container during filling, transport or disposal. Container must be acceptable to disposal site and Ministry of the Environment.
- .8 All electrical equipment shall meet the requirements of Section 22 "Category 1" of the Canadian Electrical Code C22.1-19-1990 for locations in which excessive moisture is likely to be present.

2.1 Materials
(cont'd)

- .9 Vacuum cleaners: shall be a High Efficiency Particulate Aerosol (HEPA) filter vacuum system equal to Nilfisk GS 82.
- .10 Encapsulant: surface film forming or penetrating type conforming to CGSB 1-GP-205M and approved by the Fire Commissioner of Canada.
- .11 Sprayed fireproofing: ULC labelled and listed asbestos-free cementitious or mineral fibre to provide the degree of fire or thermal protection required by current NBC standards.

- .12 Slow drying sealer: sealer type that remains tacky on surface for minimum eight hours. Standard of acceptance:
 - .1 1-GP-100 or SK-13 adhesive.

PART 3 - EXECUTION

3.1 Preparation

- .1 Work areas:
 - .1 Isolate air handling and ventilation systems to prevent contamination and fibre dispersal to other areas of the building during work phases.
 - .2 Preclean moveable objects contaminated carpet to be disposed within proposed work areas using HEPA vacuum and remove such objects from work areas to a temporary location as directed by Engineer.
 - .3 Preclean fixed casework, plant, and equipment within proposed work areas, using HEPA vacuum and cover with polyethylene sheeting sealed with tape.
 - .4 Clean surfaces in the proposed work area which are to be covered with polyethylene using, where practicable, HEPA vacuum cleaning equipment. If not practicable, use a wet cleaning method.
 - .5 Pump negative pressure system in operation and operate continuously from the time the first polyethylene is installed to seal openings until final completion of the work including final cleanup.
 - .6 Provide a daily basis monitoring of pressure difference between work area and remainder of building using an automatic recording instrument.
 - .7 Seal off all openings such as corridors, doorways, windows, skylights, ducts, grilles and diffusers with polyethylene sheeting sealed with tape.
 - .8 Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Use one layer of rip-proof polyethylene on floors. Cover floors first so that polyethylene extends at least 300 mm up walls then cover walls to overlap floor sheeting.
 - .9 Build decontamination enclosures at all entrances to and exits from work areas. Post warning signs as specified in 1.5.1.
 - .10 After Work area isolation:
 - .1 Remove heating, ventilating and air conditioning filters, pack in polyethylene bags and treat as contaminated asbestos waste.
 - .2 Remove ceiling mounted objects such as lights, partitions other fixtures not sealed off and other objects that interfere with asbestos removal, as directed by Engineer.
 - .3 Do not remove items which require disturbance of asbestos (or ceilings or cladding enclosing asbestos) until full protective measures are in place.

3.1 Preparation
(cont'd)

- .11 Maintain emergency and fire exits from work areas, or establish alternative exits satisfactory to the Wing Fire Chief.
 - .12 Where application of water is required for wetting asbestos-containing materials, shut off electrical power, provide 24 volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical lines and equipment.
 - .13 After preparation of work areas and Decontamination Enclosure Systems remove and dispose of as contaminated waste ceiling panels, tiles and entire suspension system within work areas.
 - .14 After preparation of work areas and Decontamination Enclosure Systems remove plaster ceilings, including lath, furring, channels, hangers, wires, clips, and dispose of as contaminated waste in the waste receptors. Spray ceiling debris and immediate work area with amended water to reduce dust, as work progresses.
- .2 Worker Decontamination Enclosure System:
- .1 Worker Decontamination Enclosure System shall comprise an Equipment and Access Room, a Shower Room, and a Clean Room, as follows:
 - .1 Equipment and Access Room: build an Equipment and Access Room between Shower Room and work areas, with two curtained doorways, one to the Shower Room and one to work areas.
 - .1 Install waste receptors and storage facilities for worker's shoes and any protective clothing to be re-worn in work areas.
 - .2 The Equipment and Access Room shall be large enough to accommodate specified facilities, any other equipment needed, and at least one worker allowing the worker sufficient space to undress comfortably.
 - .2 Shower Room: build a Shower Room between the Clean Room and Equipment and Access Room, with two curtained doorways, one to the Clean Room and one to Equipment and Access Room.
 - .1 Provide one shower for every five workers.
 - .2 Provide a constant supply of hot and cold or warm water.
 - .3 Drains to common sewers are available where directed by Engineer.
 - .4 Provide rigid or high pressure flexible piping and connect to water sources and drains.
 - .5 No water containing fibres other than from showering shall enter the sanitary sewer system.
 - .6 Provide soap, clean towels and appropriate containers for disposal of used respirator filters.

3.1 Preparation
(cont'd)

- .3 Clean Room: build a Clean Room between the Shower Room and clean areas outside of enclosures, with two curtained doorways, one to outside of enclosures and one to Shower Room.
 - .1 Provide lockers or hangers for workers street clothes and personal belongings.
 - .2 Provide storage for clean protective clothing and respiratory equipment.
 - .3 Install a mirror to permit workers to fit respiratory equipment properly.

.3 Drum and Equipment Decontamination Enclosure System:

- .1 Drum and Equipment Decontamination Enclosure System shall comprise a Staging Area within the work area, a Washroom, a Holding Room, and an Unloading Room. The purpose of this system is to provide a means to decontaminate waste containers, scaffolding, material containers, vacuum and spray equipment and other tools and equipment for which the Worker Decontamination Enclosure System is not suitable.

3.1 Preparation
(cont'd)

- .1 Staging Area: designate a Staging Area in the work area for bulk removal of dust and debris from waste containers and equipment, labelling and dealing of waste containers, and temporary storage pending removal to Washroom. Staging Area shall have a curtained doorway to the Container Cleaning Room.
- .2 Container Cleaning Room: build a room between the Staging Area and Holding Room with two curtained doorways, one to the Staging Area and one to the Holding Room. Provide high pressure low volume sprays for washing of drums and equipment. Pump waste water through 5 micrometre filter system before directing into drains or treat as asbestos waste. Provide piping and connect to water sources and drains.
 - .1 Provide equipment for washing of equipment and waste containers.
 - .2 All wash water shall be treated as asbestos contaminated waste.
- .3 Holding Room: build a Holding Room between the Washroom and Unloading Room, with two curtained doorways, one to the Washroom and one to the Unloading Room.
 - .1 The Holding Room shall be of sufficient size to accommodate at least two waste containers and the largest item of equipment used.
- .4 Unloading Room: build an Unloading Room between the Holding Room and outside, with two curtained doorways, one to the Holding Room and one to the outside.

.4 Construction of Decontamination Enclosures:

- .1 Build suitable framing for enclosures (or use existing rooms where convenient) and line with polyethylene sheeting sealed with tape. Use

3.1 Preparation
(cont'd)

- one (1) layer of rip-proof polyethylene on floors.
- .2 Build curtained doorways between enclosures so that when people move through or when waste containers and equipment are moved through a doorway, one of the two closures comprising the doorway always remains closed.
- .5 Separation of Work Areas from Occupied Areas:
- .1 Separate parts of the building required to remain in use, as directed by Engineer, from parts of the building used for asbestos abatement by means of an airtight barrier system constructed as follows:
- .1 Build suitable floor to ceiling wood or metal stud framing, cover with polyethylene sheeting sealed with tape, and apply 9 mm minimum thick plywood.
- .2 Seal all joints between plywood sheets and between plywood and adjacent materials with surface film forming type sealer, to create an airtight barrier.
- .3 Cover plywood barrier with polyethylene sealed with tape, as specified for work.
- .4 Install barrier to sprayed surface or above suspended ceiling using full protective procedures, amended water and HEPA vacuum. Remove ceiling tile, grids or other obstructions around perimeter of asbestos work area to allow access to deck. Saturate and remove a line of asbestos from deck and beams to allow polyethylene sheeting to be fastened to deck. Each of two sheets forming wall of enclosure shall be fastened separately to deck using tape, spray adhesive, rapid setting foam or other suitable method. Provide suitable framing to support polyethylene.
- .6 Maintenance of Enclosures:
- .1 Maintain enclosures in tidy conditions.
- .2 Ensure that barriers and polyethylene linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.
- .3 Visually inspect enclosures at the beginning of each working period.
- .4 Use smoke methods to test effectiveness of barriers when directed by Engineer.
- .7 Asbestos removal, encapsulation and enclosure work shall not commence until:
- .1 All notifications and other preparatory steps have been completed.
- .2 Work areas and decontamination enclosures (and parts of the building required to remain in use) are effectively segregated.
- .3 Tools, equipment and materials waste containers are on hand.

- .4 Arrangements have been made for building security.
- .5 Warning signs specified in 1.5.1 are displayed where access to contaminated areas is possible.
- .6 Arrangements have been made for disposal of waste.

3.2 Asbestos Removal

- .1 Before removing asbestos:
 - .1 Prepare site.
 - .2 Spray sprayed or trowelled asbestos material with water containing the specified wetting agent, using airless spray equipment. Saturate the asbestos material sufficiently to wet it to the substrate without causing excess dripping. Spray the asbestos material repeatedly during work process to maintain saturation and to minimize asbestos fibre dispersion.
- .2 Remove the saturated asbestos material in small sections. Do not allow saturated asbestos to dry out. As it is being removed pack the material in asbestos waste receptors.
- .3 Remove all asbestos containing pipe installation in layers, while maintaining all exposed surfaces of insulation or lagging in a wet condition.
 - .1 Full saturation of insulation will not be required if material is immediately bagged and not allowed to drop to the floor.
- .4 Seal ends of pipe insulation at perimeters of work area with heavy coat of sealer.
- .5 Seal filled waste receptors. Remove from immediate working area to Staging Area. Clean external surfaces thoroughly again by wet sponging before moving to container cleaning room. Wash waste receptors thoroughly in decontamination Container Cleaner Room or place in clean container and store in holding room pending removal to Unloading Room and outside. Ensure that waste receptors are removed from the Holding Room by workers who have entered from uncontaminated areas dressed in clean coveralls.

3.2 Asbestos Removal
(cont'd)

- .6 After completion of stripping work, all surfaces from which asbestos has been removed shall be wire brushed and wet-sponged to remove all visible material. During this work the surfaces shall be kept wet.
- .7 Where Engineer decides complete removal of asbestos containing materials is impossible due to obstructions such as structural members or major service elements, (or because asbestos-containing material was originally applied to an asphaltic coating) and provides a written direction, encapsulate the material as follows:
 - .1 Apply surface film forming type encapsulant to provide 0.635 mm minimum dry film thickness over sprayed asbestos surfaces. Apply using airless spray equipment to avoid blowing off

- fibres. Use different colour for each coat. Use colour (as selected by) Engineer for final coat.
- .2 Apply penetrating type encapsulant to penetrate existing sprayed asbestos surfaces to uniform depth of 25 mm minimum.
 - .3 Apply penetrating type encapsulant to penetrate existing sprayed asbestos surfaces uniformly to substrate.
- .8 After wire brushing and wet sponging to remove visible asbestos, and after sealing asbestos-containing material impossible to remove, wet clean the entire work area including the Equipment and Access Room, and equipment used in the process.
- .1 Floor and wall surfaces, ducts and similar items not covered with polyethylene sheeting must be completely wet cleaned.
 - .2 Following a further inspection and written acceptance, apply a heavy coat of slow drying sealer to all surfaces from which asbestos has been removed.
 - .3 Apply a thinned coat (sufficient to coat all surfaces) to other surfaces in the asbestos work area including all polyethylene and surfaces scheduled for demolition.
 - .4 Allow a minimum of 12 hours for fibre settling with no disturbance of asbestos work area.
 - .1 Operate negative air units during settling period.
- 3.3 Asbestos Encapsulation
- .1 Before encapsulating asbestos:
- .1 Prepare site.
 - .2 Vacuum surfaces in work areas (except those to be encapsulated) using HEPA vacuum to remove all loose debris and dust particles.
 - .3 Repair damaged and missing areas of existing sprayed asbestos to obtain a suitable base for encapsulant and to restore continuity of fireproofing. Use the specified asbestos-free fireproofing material. Prepare surfaces and apply fire proofing in accordance with manufacturer's printed instructions.
 - .4 Remove loose asbestos and pack in waste receptors for disposal.
 - .5 Remove waste receptors from immediate work area to Staging Area, wash waste containers thoroughly in container cleaning room or place in clean container and store in Holding Room pending removal to Unloading Room and outside. Ensure that waste containers are removed from holding areas by workers who have entered from uncontaminated areas dressed in clean coveralls.
- .2 Apply surface film forming type sealer to provide 0.635 mm minimum dry film thickness over sprayed asbestos surfaces. Apply using airless spray equipment to avoid blowing off fibres. Use a different colour for each coat. Use colour (as selected by Engineer) for final coat.
- .3 Apply penetrating type encapsulant to penetrate existing sprayed asbestos surfaces to uniform depth of 25 mm minimum.
- 3.3 Asbestos Encapsulation
(cont'd)

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- .4 Apply penetrating type encapsulant to penetrate existing sprayed asbestos surfaces uniformly to substrate.
 - .5 Wet clean the entire work area including Equipment and Access Room, and equipment used in the process.
 - .1 Floor and wall surfaces, ducts and similar equipment not covered with polyethylene sheeting must be completely wet cleaned.
 - .2 Following a further inspection and written acceptance, apply a thinned coat (sufficient to coat all surfaces) to all surfaces in the asbestos work area including all polyethylene and surfaces scheduled for demolition.
 - .3 Allow a minimum of 12 hours for fibre settling with no disturbance of asbestos work area.
 - .1 Operate negative air units during settling period.
- 3.4 Asbestos Enclosure
- .1 Before enclosing asbestos:
 - .1 Prepare site.
 - .2 Vacuum all surfaces in work areas, except asbestos surfaces, using HEPA vacuum equipment to remove all loose debris and dust particles.
 - .3 Spray areas to be disturbed while securing hangers and other fixing devices. Use water containing the specified wetting agent. Keep asbestos material damp to prevent release of airborne fibres.
 - .4 Remove loose asbestos and pack in waste receptors for disposal.
 - .5 Remove waste receptors from immediate working area to Staging Area, wash waste containers thoroughly in Decontamination Container Cleaning Room or place in Holding Room pending removal to Unloading Room and outside. Ensure that waste containers are removed from holding areas by workers who have entered from uncontaminated areas dressed in clean coveralls.
 - .2 After installation of hangers and other fixing devices and before enclosing asbestos, repair damaged and missing areas of existing sprayed-on material using the specified asbestos-free fireproofing material. Prepare surfaces and apply fireproofing or thermal insulation in accordance with manufacturer's printed instructions.
 - .3 Enclose asbestos surfaces as follows:
 - .1 Instructions will be discussed at time of call-up.
 - .4 Wet clean the entire work area including Equipment and Access Room, and equipment used in the process.
 - .1 Floor and wall surfaces, ducts and similar items not covered with polyethylene must be completely wet cleaned.
 - .2 Following a further inspection and written acceptance, apply a thinned coat of slow drying sealer to all surfaces in the asbestos
- 3.4 Asbestos Enclosure
(cont'd)

work area including all polyethylene and surfaces scheduled for demolition.

- .3 Allow a minimum of 12 hours for fibre settling with no disturbance of asbestos work area.
 - .1 Operate negative pressure units during settling period.

3.5 Clean Up

- .1 Following cleaning specified previously and when air sampling shows that asbestos levels on both sides of seals do not exceed 0.10 fibres/cc as

3.5 Clean Up
(cont'd)

determined by the Engineer proceed with final cleanup.

- .2 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum all visible asbestos-containing particles observed during cleanup immediately, using HEPA vacuum equipment. HEPA vacuum or wet wash all floors.
- .3 Place polyethylene seals, tape, cleaning material, clothing, and other contaminated waste in waste receptors.
- .4 Work areas, Equipment and Access Room, Container Cleaning Room, Shower Room, and other enclosures that may be contaminated shall be included in the cleanup.
- .5 Sealed drums and all equipment used in the work shall be included in the cleanup and shall be removed from work areas via the Drum and Equipment Decontamination Enclosure System at an appropriate time in the cleaning sequence.
- .6 A final check shall be carried out to ensure that no dust or debris remains on surfaces as a result of dismantling operations and air-monitoring shall be carried out again to ensure that asbestos levels in the building do not exceed 0.10 fibres/cc. Repeat cleaning using HEPA vacuum equipment, or wet cleaning methods where feasible, in conjunction with sampling until levels meet this criteria.
- .7 As work progresses, and to prevent exceeding available storage capacity on site, remove sealed and labelled asbestos waste receptors and dispose of to authorized disposal area in accordance with requirements of disposal authority. Ensure that each shipment of containers transported to dump is accompanied by Contractor's representative who shall ensure that dumping is done in accordance with governing regulations.

3.6 Disposal

- .1 Authority for the final disposal of asbestos waste is the responsibility of Local, Regional, Provincial Ministry of Environment (MOE) representatives.

- .1 Contractor shall contact MOE representative and local disposal site to arrange disposal.
- .2 Under no circumstances will waste asbestos be

3.6 Disposal

disposed of without the agreement and approval

(cont'd)

of the responsible MOE representative and the waste disposal site in writing.

- .2 All waste must be transported by hauler licensed for the transportation of waste containing asbestos by the Provincial Ministry of the Environment.
- .3 Ensure each shipment of containers to dump is accompanied by a representative who will supervise dumping of containers and ensure all guidelines and regulations are followed.
- .4 Cooperate with MOE inspectors and immediately carry out instructions for remedial work at dump, to maintain environment, at no additional cost to the Owner.
- .5 Ensure dump operation is fully aware of hazardous material being dumped and that all equipment operators have been fully briefed in management of asbestos containers after delivery to dump.

3.7 Re-establishment
of Objects and Systems

- .1 When cleanup is complete:
 - .1 Re-establish objects moved to temporary locations in the course of the work, in their proper positions.
 - .2 Resecure mounted objects moved in the course of the work in their former positions.
- .2 Re-establish mechanical and electrical systems in proper working order. Install new filters.
- .3 Repair or replace objects damaged in the course of the work, as directed by Engineer.

PART 1 - GENERAL

- 1.1 Outline of Work .1 Submit a "Scope of Work" defining work procedures and precautions necessary to complete the Asbestos Abatement project for each individual Standing Offer Agreement (SOA) call-up, based on the Engineer's Work Order/requirements.
- 1.2 Regulatory Agencies .1 Comply with Federal, Provincial and local requirements pertaining to asbestos, provided that in any conflict among those requirements or these specifications the more stringent requirements shall apply.
- 1.3 Notification .1 Not later than 10 days before commencing work on this project notify the following in writing.
.1 Regional Director of the Medical Services Branch of Health and Welfare Canada.
.2 Regional Office of Labour Canada.
.3 Provincial Department of Labour.
.4 Disposal Authority.
.5 The Engineer.
.2 When 10 days notification is not possible before job start, verbal notification followed by a written letter (copy to Engineer) will be accepted.
- 1.4 Worker Protection .1 Workers involved with asbestos removal must wear personal protective equipment as follows:
.1 An approved half-mast respirator.
.2 Protective disposable coveralls complete with hood.
.3 Provide other body protection required under applicable safety regulations.
.2 When asbestos removal is proceeding, the workers will be required to wash exposed skin before leaving the work site.
- 1.5 Existing Conditions .1 Results of tests of asbestos-containing materials taken from pipe insulation within the scope of this project are available for inspection at the Wing Construction Engineering Officer's (WCEO's) office.
.1 These are for general information only and are not necessarily representative of all asbestos-containing materials contained within the scope of this project.

PART 2 - PRODUCTS

- 2.1 Material and Equipment .1 PVC Bag: prefabricated, purpose made, 0.25 mm minimum thickness, polyvinyl-chloride bag with integral 0.25 mm thick polyvinyl-chloride gloves.
.1 Bag equipped with a reversible double-pull double throw zipper on top to facilitate installation on pipe and progressive movement along pipe and with straps for sealing ends of bag around pipe.
.2 Once filled bag cannot be re-used and shall be disposed of as contaminated waste.

- .2 Protective clothing: coveralls and hoods, disposable type.
 - .1 Required if glove bag becomes damaged or punctured.
- .3 Respirators: minimum requirement is a non-powered half face respirator acceptable to Labour Canada or Provincial Labour Department with High Efficiency Particulate Aerosol (HEPA) cartridge filter.
 - .1 No worker, supervisor or authorized visitor may have facial hair which prevents proper contact between respirator facepiece and skin.
 - .2 Single use dust respirators are not permitted.
- .4 Signs in both official languages: Helvetica Medium type letters, upper case as follows:
 - "CAUTION, ASBESTOS HAZARD AREA" (25 mm)
 - "UNAUTHORIZED ENTRY PROHIBITED" (19 mm)
 - "WEAR PROTECTIVE EQUIPMENT" (19 mm)
 - "BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM" (7 mm)
- .5 Polyethylene: 0.15 mm (6 mil) thick minimum, in sheet size to minimize joints.
- .6 Sprayers: garden reservoir type, low velocity, capable of producing a mist of fine spray.
- .7 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether or other non-ionic surfactant proved to be effective in aiding wetting of asbestos.
- .8 Waste Receptors: metal or fibre drums with tight lids, or 0.15 mm (6 mil) minimum thickness polyethylene bag.

2.1 Material and Equipment
(cont'd)

- .1 Label receptors in both official languages in Helvetica Medium type letters, upper case as follows:
 - "CAUTION CONTAINS ASBESTOS FIBRES" (25 mm)
 - "DO NOT MISHANDLE" (19 mm)
 - "BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM" (7 mm)
- .2 Waste receptors to be acceptable to waste disposal site and Ministry of the Environment.
- .9 Tape: fibreglass type duct tape, self adhering for wet and dry conditions.
- .10 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipped with a filter system capable of collecting and retaining monodisperse aerosol particles greater than 0.3 microns in diameter or larger.
- .11 Securing straps: for glove bag, reusable nylon straps at least 25 mm (1") wide with metal

tightening buckle for sealing ends of bags around pipe and/or insulation.

- .12 Knife: knife with fully retractable blade for use inside glove bag.
- .13 Slow drying sealer: product shall have flame spread and smoke development ratings both less than 50. Product shall leave no stain when dry.
 - .1 Acceptable material: Borden Polyco 804 (clear) or Double AD TC-55 (clear).

PART 3 - EXECUTION

3.1 Procedures

- .1 Conduct preparation and removal of asbestos after office hours in occupied buildings.
- .2 Cover with polyethylene floor and equipment below and within 4 m of work area. Turn up at walls and tape all joints.
- .3 Shut down air circulation system within work area.
- .4 Instruct workers on necessary safety procedures and protective measures.
- .5 Install signs, as described in 2.1.4, around asbestos removal area.

3.2 Removal

- .1 Isolate asbestos work area with tape barriers, saw horses and other barriers.
- .2 Spray any areas of damaged jacketing with mist of amended water. Tape over damaged area to provide temporary repair.
- .3 Using HEPA vacuum (or wet sponge) clean surfaces of pipes and insulation dust from work area.
- .4 Place any tools necessary to remove insulation in tool pouch. Zip bag onto pipe and seal all openings to pipe with cloth securing strap. For valve bags seal valve cover with wire ties or equivalent.
- .5 Place hands into gloves and use necessary tools to remove insulation. Arrange insulation in bag to obtain full capacity of bag. Roll jacketing carefully to minimize the possibility of ripping or puncturing bag.
- .6 Insert nozzle of spray pump into bag through valve and wash down pipe and interior of bag thoroughly. Use one hand to aid washing process. Wet surface of insulation in lower section of bag and exposed ends of asbestos insulation remaining on pipe by spraying.
- .7 If bag is to be removed from pipe for use on new section of pipe, seal interior plastic closure before removing from pipe. Re-install in new location before opening interior closure.

3.2 Removal
(cont'd)

- .8 If bag is to be removed along pipe, move bag reseat to pipe using double-pull zipper to pass hangers. Continue stripping operation.
- .9 If bag is ripped, cut or opened in any way, cease work and repair with tape before continuing work. If the rip, cut or opening is not easily repaired all workers in area shall put on protective clothing. All spilled material must be cleaned up and removed with a HEPA vacuum.
- .10 To remove bag after completion of stripping, wash top section with tools thoroughly. Place all tools in one gloved hand, pull hand out inverted, twist to create a separate pouch, double tape to seal. Cut between tape and place pouch with tools in next glove bag or into a water bucket, open pouch under water, clean tools and allow to dry.
- .11 Pull 0.15 (6 mil) polyethylene bag over glove bag before removing from pipe. Remove securing straps. Unfasten zipper. Seal top of glove bag while removing from pipe.
- .12 After removal of bag ensure that pipe is free of all residue. If necessary, after removal of each section of asbestos, vacuum all surfaces of pipe, using HEPA filtered vacuum equipment or wipe with wet cloth. Ensure that surfaces are kept free of sludge which after drying could release asbestos dust into atmosphere.
- .13 After asbestos has been removed from pipe, seal all pipe surfaces with 1-GP-100 or with SK 13.
- .14 Place cloths, mops, sponges, rags, wire brushes, disposable filters and protective clothing in double waste bags. Seal bags tightly and dispose as asbestos waste.
- .15 Vacuum all surfaces within work area including waste receptors, reusable equipment used to perform work, footwear and soles of footwear.
- .16 Thoroughly wash respirators, eye protection, hard hats, hands and face.

3.3 Sealing

- .1 Seal with tape or cloth jacketing exposed ends of remaining asbestos insulation.

3.4 Disposal

- .1 Authority for final disposal of asbestos waste is the responsibility of Local, Regional, Provincial Ministry of the Environment (MOE) representatives.
 - .1 Contractor shall contact MOE representative and local disposal site to arrange disposal.
 - .2 Under no circumstances will waste asbestos be disposed of without the agreement and approval of the responsible MOE representative and the waste disposal site in writing.
- .2 All waste must be transported by hauler licensed for the transportation of waste, containing asbestos, by the Provincial Ministry of the Environment.

- .3 Ensure each shipment of containers is accompanied by a representative who will supervise dumping of containers and ensure all guidelines and regulations are followed.

3.4 Disposal
(cont'd)

- .1 Each load requires completion of a hazardous waste manifest under Transport of Dangerous Goods Act 1980.
- .4 Cooperate with Ministry of Environment inspectors and immediately carry out instructions for remedial work at dump to maintain environment, at no additional cost to Owner.
- .5 Ensure dump operation is fully aware of hazardous material being dumped and that all equipment operators have been fully briefed in management of asbestos containers after delivery to site.

PART 1 - GENERAL

- 1.1 Outline of Work .1 Submit a "Scope of Work" defining work procedures and precautions necessary to complete the Asbestos Abatement project for each individual Standing Offer Agreement call-up, based on the Engineer's Work Order/requirements.
- 1.2 Notification .1 Not later than 10 days before commencing work on this project notify the following in writing:
.1 Regional Zone Director of the Medical Services Branch of Health and Welfare Canada.
.2 Regional Office of labour Canada.
.3 Provincial Department of Labour.
.4 Disposal Authority.
.5 The Engineer.
- .2 When 10 days notification is not possible before job start, verbal notification followed by a written letter (copy to Engineer) will be accepted.
- 1.3 Worker Protection .1 Contractor to comply with Provincial asbestos regulations.
- .2 Workers removing or handling asbestos cement products must wear half-mask respirators while removing asbestos material and/or loading asbestos materials into waste containers.

PART 2 - PRODUCTS

- 2.1 Materials .1 Polyethylene: to CAN2-51.22-M77, in 0.15 mm (6 mil) minimum thickness unless otherwise specified.
- .2 Waste receptors: sealed containers of sufficient strength to hold asbestos materials.
.1 Containers to be labelled in both official languages with yellow/black labels with medium Helvetica type upper case letters:
"CAUTION, CONTAINS ASBESTOS FIBRES" (25 mm)
"DO NOT MISHANDLE" (19 mm)
"BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM" (7 mm)
.2 Waste receptor to be acceptable to waste disposal site and Ministry of the Environment.
- 2.1 Materials (cont'd) .3 Respirators: types acceptable to Labour Canada or Provincial Labour Department and suitable for appropriate asbestos exposure.
.1 Minimum requirements is non-powered half-face with HEPA filters.
.2 Single use dust respirators are not permitted.
- .4 HEPA vacuum: High Efficiency Particulate Aerosol filter vacuum with all attachments and fittings. Filter system shall collect 99.97% of aerosol particles 0.3 micrometres or larger.

PART 3 - EXECUTION

3.1 Preparation

- .1 Instruct workers on necessary safety procedures and protective measures.
- .2 Cover surfaces below removal area with polyethylene drop sheets.

3.2 Removal

- .1 Removal of asbestos cement products shall be carried out by wet removal techniques.
- .2 Saturate asbestos with water in advance of any removal.
- .3 Remove wet asbestos in sections. Care is to be taken to minimize breakage of asbestos during removal. Before beginning the next section place the removed asbestos in a waste receptor for disposal.
- .4 Each truck load of asbestos waste is to be covered with polyethylene sheeting or tarpaulin, before transportation to disposal area.
- .5 Clean all broken sections, dust, etc, from substrate and from polyurethane drop sheets and surrounding area with HEPA vacuum or wet cleaning. Dispose of drop sheets as asbestos waste.

3.3 Disposal

- .1 Authority for final disposal of asbestos waste is the responsibility of Local, Regional, Federal and Provincial Ministry of Environment (MOE) representatives.
 - .1 Contractor shall contact MOE representative and local disposal site to arrange disposal.
 - .2 Under no circumstances will waste asbestos be disposed of without the agreement and approval of the responsible MOE representative and the waste disposal site in writing.

3.3 Disposal
(cont'd)

- .2 All waste must be transported by a hauler licensed for the transportation of waste containing asbestos by the Provincial Ministry of the Environment.
- .3 Ensure each shipment of containers to dump is accompanied by a representative who will supervise dumping of containers and ensure all guidelines and regulations are followed.
 - .1 Each load requires completion of hazardous waste manifest under Transport of Dangerous Goods Act 1980.
- .4 Cooperate with Ministry of the Environment inspectors and immediately carry out instructions for remedial work at dump to maintain environment, at no additional cost to Owner.
- .5 Ensure dump operation is fully aware of hazardous material being dumped and that all equipment operators have been fully briefed in management of asbestos containers after delivery to dump.