

Part 1 General**1.1 REFERENCES**

- .1 Canadian Standards Association (CSA International).
 - .1 CSA S350-M1980 (R2003). Code of Practice for Safety in Demolition of Structures.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Before proceeding with demolition of structure or other walls and where required by authority having jurisdiction, submit for review by Departmental Representative a complete set of shoring and underpinning drawings prepared by Qualified Professional Engineer registered or licensed in the Province of Quebec, showing proposed method.

1.3 QUALITY ASSURANCE

- .1 Ensure Work is performed in compliance with CSA S350 and applicable provincial regulations.
- .2 Meetings:
 - .1 Prior to start of Work arrange for site visit with Departmental Representative to examine existing site conditions adjacent to demolition work.
 - .2 Hold project meetings every week.
 - .3 Ensure key personnel including site supervisor, project manager, Contractors and WMC attend.
- .3 Departmental Representative will provide written notification of change to meeting schedule established upon award 24 hours prior to scheduled meeting.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Prior to beginning any On-Site work, submit detailed Waste Reduction Workplan in accordance with Section 01 74 21 - Construction / Demolition Waste Management and Disposal.
- .2 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction / Demolition Waste Management and Disposal.

1.5 EXISTING CONDITIONS

- .1 Review "Designated Substance Report" and take precautions to protect environment.
- .2 Should materials resembling spray or trowel applied asbestos, PCB's, Mould or other designated substance listed as hazardous be encountered in course of deconstruction, stop work, take preventative measures, and notify Departmental

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Representative immediately. Do not proceed until written instructions have been received. Refer to Section 01 35 29.06 - Health and Safety Requirements.

- .3 Structures to be demolished to be based on their condition at time of examination prior to tendering.
- .4 Notify the Departmental Representative before disrupting building access or services, in accordance with Section 01 00 10 – General Instructions.

Part 2 Products**2.1 EQUIPMENT**

- .1 Leave equipment and machinery running only while in use, except where extreme temperatures prohibit shutting down.
- .2 Where possible, use water efficient wetting equipment, trucks or attachments when minimizing dust.
- .3 Demonstrate that tools are being used in manner which allows for salvage of materials in best condition possible.

Part 3 Execution**3.1 PREPARATION**

- .1 Demolitions and removals to be carried out sequentially according to the phasing shown in the Contractor's schedule approved by the Departmental Representative.
- .2 Do Work in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .3 Inspect building with Departmental Representative and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.
- .4 Investigate site and structure to determine dismantling, processing and storage logistics required prior to beginning of Work.
- .5 Obtain necessary permits and approvals. Provide copies to Departmental Representative prior to start of Work on site and within 24 hours of written request.
- .6 Locate and protect utilities. Do not disrupt active or energized utilities traversing premises or designated to remain undisturbed.
- .7 Disconnect, cap, plug or divert, as required, existing utilities within the building where they interfere with the execution of the work, in conformity with the requirements of the authorities having jurisdiction. Mark the location of these and previously capped or plugged services on the site and indicate location (horizontal and vertical) on the record drawings. Support, shore up and maintain pipes and conduits encountered.

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- .8 Immediately notify Departmental Representative and utility company concerned in case of damage to any utility or service, designated to remain in place.

3.2 PROTECTION

- .1 Keep noise, dust, and inconvenience to adjacent properties and occupants to minimum.
- .2 Protect building systems, services and equipment.
- .3 Provide temporary dust screens, covers, railings, supports and other protection as required.
- .4 Prevent debris from blocking streets, and restricting normal site drainage systems.

3.3 SALVAGE FOR RE-INSTALLATION

- .1 Remove items to be reused, and store where approved by Departmental Representative, and re-install under appropriate section of specification.

3.4 HAZARDOUS WASTES

- .1 During construction, immediately notify the Departmental Representative if suspected hazardous substances are encountered. Do not disturb suspected hazardous substances. Await direction from the Departmental Representative.
- .2 Refer to Section 01 14 25 - Designated Substance Report.

3.5 SITE REMOVALS

- .1 Remove items as indicated.

3.6 DISASSEMBLY

- .1 Materials removed are property of Contractor.
- .2 Ensure workers and Contractors are trained to carry out work in accordance with appropriate deconstruction techniques.
- .3 Deconstruct in accordance with CSA S350 and other applicable safety standards.
- .4 Workers must utilize adequate fall protection including certified harness and belay systems where Departmental Representative considers it necessary.

3.7 DEMOLITION

- .1 Remove existing equipment, services, and obstacles where required for refinishing or making good of existing surfaces, and replace as work progresses.
- .2 At end of each day's work, leave Work in safe and stable condition.
- .3 Demolish to minimize dusting. Keep materials wetted as approved by Departmental Representative.

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- .4 Separate from waste stream, material designated for alternate disposal or in condition suitable for reuse and/or recycling.

3.8 PROCESSING

- .1 Designate location for processing of materials which eliminates double handling and provides adequate space to maintain efficient material flow.
- .2 Keep processing area clean and free of excess debris.
- .3 Separate processed materials into organized piles for stockpiling. Provide collection area for materials processed or designated for alternate disposal.

3.9 CUTTING AND CORING OF EXISTING CONCRETE FLOORS

- .1 Perform core drilling of existing concrete slabs as required for the installation of new mechanical and electrical services. Cutting and coring to be performed by contractors specializing in this type of work in occupied facilities.
- .2 Perform operations at times as scheduled during "off hours" and to approval of Departmental Representative. Schedule at times to create least disturbance to occupants. Take precautions to approval of Departmental Representative to protect adjacent areas as well as areas below.
- .3 Perform scan testing of the existing slab prior to undertaking any demolition. Contractor to hire the services of a structural engineer registered in the Province of Quebec to direct core drill locations. Provide 48 hour advance notice of Testing to Departmental Representative and arrange to perform scanning in presence of Departmental Representative. Based on the results of the scan, the contractors Structural Engineer is to provide written confirmation (complete with engineers stamp) of acceptable core drill opening locations (minimizing structural effect on the existing slabs), and obtain the approval of the Departmental Representative.

3.10 FLOOR SURFACE PREPARATION

- .1 Prepare all floor surfaces as follows:
 - .1 Completely remove, down to bare concrete: all existing coatings, laitance, paints, oils, grease, dirt, stains and any unsound concrete from existing concrete floors using a combination of commercial degreasers, alkaline wash, water blasting, hand grinding, shot blasting or wet sand blasting as required for site conditions, and as required in specific spec sections.
 - .2 Remove all remaining residue, dust, dirt, and other debris by vacuuming, wiping with dry, clean cloths.
 - .3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.

3.11 STOCKPILING

- .1 Refer to Section 01 74 21 - Construction / Demolition Waste Management and Disposal for other processing requirements.
- .2 Label stockpiles, indicating material type and quantity.

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- .3 Designate appropriate security resources/measures to prevent vandalism, damage and theft.
- .4 Locate stockpiled materials convenient for use in new construction. Eliminate double handling wherever possible.
- .5 Spread stockpiled material to prevent overloading of the existing slab.

3.12 REMOVAL FROM SITE

- .1 Transport material designated for alternate disposal to approved facilities, or receiving organizations listed in waste reduction workplan and in accordance with applicable regulations. Do not deviate from facilities or receiving organizations listed in waste reduction workplan without prior written authorization from Departmental Representative.
- .2 Dispose of materials not designated for alternate disposal in accordance with applicable regulations. Disposal facilities must be approved of and listed in waste reduction workplan. Do not deviate from disposal facilities listed in waste reduction workplan without prior written authorization from Departmental Representative.

3.13 CLEANING AND RESTORATION

- .1 Keep site clean and organized throughout deconstruction.
- .2 Upon completion of project, remove debris, trim surfaces and leave work site clean.
- .3 Upon completion of project, reinstate areas affected by Work to condition which existed prior to beginning of Work and to match condition of adjacent, undisturbed areas.

END OF SECTION

Part 1 General**1.1 SUMMARY**

- .1 Comply with requirements of this Section (Minimum Precautions) when performing following work with hand tools or a power tool attached to a HEPA dust collection device:
 - .1 Removal or disturbance of non-friable asbestos-containing 12"x12" vinyl floor tiles, black caulking and black tar materials
- .2 Refer to the Specification Section 01 14 25 – Designated Substance Report, for details on asbestos-containing materials

1.2 RELATED SECTIONS

- .1 Section 01 14 25 – Designated Substance Report

1.3 REFERENCES

- .1 Department of Justice Canada (Jus).
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
 - .1 Material Safety Data Sheets (MSDS).
- .3 Transport Canada (TC).
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .4 Quebec Regulation respecting occupational health and safety
 - .1 Québec R.S.Q., Chapter S2.1, r.4, Section 3.23.
 - .2 Québec R.S.Q., Chapter S-2.1, r.13.

1.4 DEFINITIONS

- .1 HEPA vacuum: DOP tested High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .2 Amended Water: water with non-ionic surfactant wetting agent added to reduce surface tension of water to allow thorough wetting of fibres.
- .3 Asbestos-Containing Materials (ACMs): materials that contain 0.1 percent or more asbestos by dry weight, identified under Existing Conditions including fallen materials and settled dust.
- .4 Asbestos Work Area: area where work takes place which will, or may, disturb ACMs.
- .5 Authorized Visitors: Departmental Representative, and representative(s) of regulatory agencies.
- .6 Competent worker: in relation to specific work, means a worker who:
 - .1 Is qualified because of knowledge, training and experience to perform the work.
 - .2 Is familiar with the provincial laws and with the provisions of the regulations that apply to the work.
 - .3 Has knowledge of all potential or actual danger to health or safety in the work.
- .7 Hazardous Material Workplan: A brief report identifying the location and quantities of hazardous materials and the methods that will be used to remove, store, transport and dispose of them.

- .8 Non-Friable Material: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.
- .9 Occupied Area: any area of the building or work site that is outside Asbestos Work Area.
- .10 Polyethylene: rip-proof polyethylene sheeting with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide protection and isolation.
- .11 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Sprayer must have appropriate capacity for work.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit proof satisfactory to the Departmental Representative that suitable arrangements have been made to dispose of asbestos-containing waste in accordance with requirements of authority having jurisdiction.
- .2 Submit Provincial/Territorial and/or local requirements for Notice of Project Form.
- .3 Submit proof of Contractor's Asbestos Liability Insurance.
- .4 Submit to the Departmental Representative necessary permits for transportation and disposal of asbestos-containing waste and proof that asbestos-containing waste has been received and properly disposed.
- .5 Submit proof that all asbestos workers and/or supervisor have received appropriate training and education by a competent person in the hazards of asbestos exposure, good personal hygiene and work practices while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing.
- .6 Submit proof satisfactory to Departmental Representative that employees have appropriate respirator fitting and testing (fit test certificates). Workers must be fit-tested (qualitative as a minimum) with respirator that is personally issued.
- .7 Asbestos abatement section within Hazardous Material Work Plan.

1.6 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial, and local requirements pertaining to asbestos, provided that in case of conflict among these requirements or with these specifications, more stringent requirement applies. Comply with regulations in effect at time Work is performed.
- .2 Health and Safety:

Safety Requirements: worker protection.

- .1 Protective equipment and clothing to be worn by workers while in Asbestos Work Area include:
 - .1 As a minimum, air purifying half-mask respirator with N-100, R-100 or P-100 particulate filter, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction. The respirator to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet. The respirator to be cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker. The respirator to have damaged or deteriorated parts replaced prior to being used by a worker; and, when not in use, to be stored in a convenient, clean and sanitary location. The employer to establish written procedures regarding the

selection, use and care of respirators, and a copy of the procedures to be provided to and reviewed with each worker who is required to wear a respirator. A worker not to be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.

- .2 Disposable-type protective clothing (high-density polyethylene protective clothing (Tyvek or similar, as approved by Departmental Representative) that does not readily retain or permit penetration of asbestos fibres. Protective clothing to be provided by the employer and worn by every worker who enters the work area, and the protective clothing shall consist of a head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing to include suitable footwear, and to be repaired or replaced if torn.
- .2 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.
- .3 Before leaving Asbestos Work Area, the worker can decontaminate his or her protective clothing by using a vacuum equipped with a HEPA filter, or by damp wiping, before removing the protective clothing, or, if the protective clothing will not be reused, place it in a container for dust and waste. The container to be dust tight, suitable for asbestos waste, impervious to asbestos, identified as asbestos waste, cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before removal from the work area, and removed from the work area frequently and at regular intervals.
- .4 Facilities for washing hands and face shall be provided within or close to the Asbestos Work Area.
- .5 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .2 Separate for reuse, and recycling and place in designated containers steel, metal, plastic waste in accordance with Waste Management Plan.
- .3 Place materials defined as hazardous or toxic in designated containers. Location and transportation of all on-site waste containers must be approved by Departmental Representative in writing prior to work.
- .4 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .5 Fold up metal banding, flatten and place in designated area for recycling.
- .6 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of asbestos waste in sealed double thickness 0.15 mm thick bags or leak proof drums. Label containers with appropriate warning labels.
- .7 Provide waste manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial. All waste landfill manifests are to be provided to the Client/Client Representative at the end of the project.

1.8 EXISTING CONDITIONS

- .1 Refer to the Specification Section 01 14 25 – Designated Substance Report for details on materials containing Chrysotile asbestos.
- .2 Quantities of asbestos-containing materials and site conditions are the responsibility of the bidding contractor. Contractors are to verify all site conditions themselves and base their abatement bids upon

their own observations and quantity take-offs. Bidding contractors are to draw their own conclusions with respect to site conditions and/or factors that may affect their work.

- .3 Notify Departmental Representative of asbestos-containing material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material pending instructions from Departmental Representative.

1.9 SCHEDULING

- .1 Hours of Work: perform work involving asbestos abatement located at the Building during hours specified by Departmental Representative. **The work schedule must be approved in writing by the Departmental Representative in advance of work.** Contractor shall be available to work continuously from beginning to end of project.

1.10 PERSONNEL TRAINING

- .1 Before beginning Work, provide Departmental Representative with satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene and work practices, and in use, cleaning, and disposal of respirators and protective clothing.
- .2 Instruction and training related to respirators includes, following minimum requirements:
 - .1 Fitting of equipment.
 - .2 Inspection and maintenance of equipment.
 - .3 Disinfecting of equipment.
 - .4 Limitations of equipment.
- .3 Instruction and training must be provided by a competent, qualified person.

Part 2 Products

2.1 MATERIALS

- .1 Drop Sheets:
 - .1 Polyethylene: 0.15 mm thick.
 - .2 FR polyethylene: 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.
- .2 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with water in a concentration to provide thorough wetting of asbestos-containing material.
- .3 Waste Containers: contain waste in two separate containers.
 - .1 Inner container: 0.15 mm thick sealable polyethylene waste bag.
 - .2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.
 - .3 Labelling requirements: affix preprinted cautionary asbestos warning in both official languages that is visible when ready for removal to disposal site.

Part 3 Execution

3.1 SUPERVISION

- .1 Minimum of one Supervisor for every ten workers is required inside the asbestos work areas at all times.

- .2 Approved Supervisor must remain within Asbestos Work Area during disturbance, removal, or other handling of asbestos-containing materials.

3.2 PROCEDURES

- .1 Before beginning Work, isolate Asbestos Work Area using, at a minimum, preprinted cautionary asbestos warning signs in both official languages that are visible at access routes to Asbestos Work Area.
 - .1 Remove visible dust from surfaces in the work area where dust is likely to be disturbed during course of work.
 - .2 Use HEPA vacuum, or damp cloths where damp cleaning does not create a hazard and is otherwise appropriate.
 - .3 Do not use compressed air to clean up or remove dust from any surface.
- .2 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.
 - .1 Use FR polyethylene drop sheets over flooring such as carpeting that absorbs dust and over flooring in Asbestos Work Area where dust and contamination cannot otherwise be safely contained.
- .3 Wet materials containing asbestos to be cut, ground, abraded, scraped, drilled, or otherwise disturbed unless wetting creates hazard or causes damage.
 - .1 Use garden reservoir type low - velocity fine - mist sprayer.
 - .2 Perform Work to reduce dust creation to lowest levels practicable.
 - .3 Work will be subject to visual inspection.
 - .4 Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.
- .4 Cutting, shaping, grinding, drilling, abrading or otherwise disturbing non-friable asbestos-containing materials shall be executed using non-powered hand-tools only.
- .5 Clean-Up:
 - .1 Frequently during Work and immediately after completion of Work, clean up dust and asbestos-containing waste using HEPA vacuum or by damp mopping.
 - .2 Place dust and asbestos-containing waste in sealed dust-tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste; wet and fold these items to contain dust, then place in plastic bags.
 - .3 Clean exterior of each waste-filled bag using damp cloths or HEPA vacuum and place in second clean waste bag immediately prior to removal from Asbestos Work Area.
 - .4 Seal waste bags and remove from site. Dispose of in accordance with requirements of Provincial and Federal Authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that guidelines and regulations for asbestos disposal are followed.
 - .5 Perform final thorough clean-up of Work areas and adjacent areas affected by Work using HEPA vacuum.

3.3 INSPECTION

- .1 Perform inspection of Asbestos Work Area to confirm compliance with specification and governing authority requirements. Deviation(s) from these requirements that have not been approved in writing by Departmental Representative may result in Work stoppage, at no cost to Owner.
- .2 Departmental Representative may inspect Work at any time during the project for:
 - .1 Adherence to specific procedures and materials.

- .2 Final cleanliness and completion.
- .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.
- .3 When asbestos leakage from Asbestos Work Area has occurred or is likely to occur Departmental Representative may order Work shutdown.
- .4 No additional costs will be allowed by the Contractor for additional labour or materials required to provide specified performance level.

3.4 AIR MONITORING

- .1 From beginning of Work until completion of cleaning operations, the Departmental representative may collect air samples on a daily basis outside of Asbestos Work Area(s).
- .2 If air monitoring shows that areas outside work areas are contaminated, enclose, maintain, and clean these areas in same manner as that applicable to Asbestos Work Area(s)
 - .1 Stop work and clean areas outside of Asbestos Work Areas when Phased Contrast Microscopy measurements exceed 0.05 fibres per cubic centimetre (f/cc) and correct procedures.
 - .2 All required cleaning, re-cleaning, additional air testing and/or inspections will be performed at no extra charge to the Client.
- .3 Ensure that respiratory safety factors for Workers are not exceeded.
- .4 The Departmental Representative may collect clearance air samples following a final visual inspection of the Asbestos Work Area by the Departmental Representative. Samples will be analyzed and compared to applicable regulations.
 - .1 Final air monitoring results must show fibre levels of less than 0.05 fibres per cubic centimetre (f/cc).
 - .2 If air monitoring shows that areas inside the Asbestos Work Area(s) are contaminated; enclose, maintain and clean these areas in same manner as that applicable to Asbestos Work Area at no additional cost to the client.
 - .3 Repeat as necessary until fibre levels are less than 0.05 f/cc
 - .4 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

END OF SECTION