



Highview Elementary School Mechanical Distribution Replacement

Specifications for Asbestos Abatement

Project Location:

1040 Queensdale Avenue East, Hamilton, ON

Prepared for:

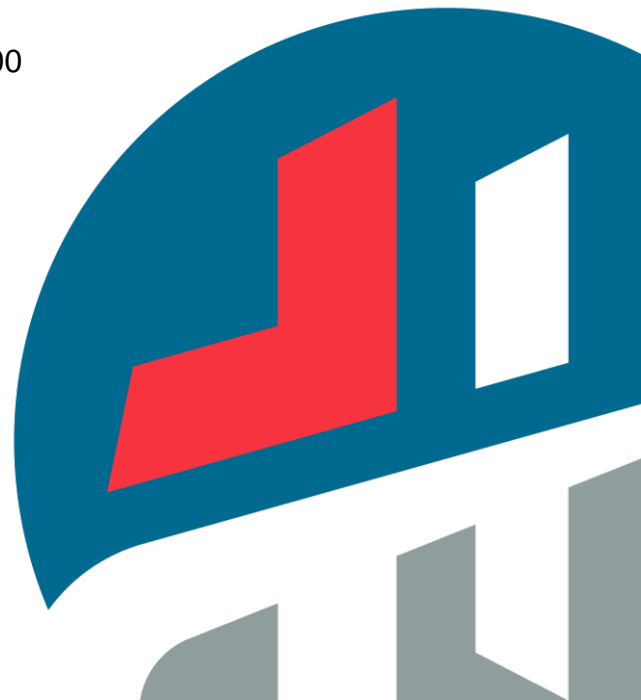
Hamilton-Wentworth District School Board
20 Education Court, Hamilton, ON

Prepared by:

MTE Consultants Inc.
1016 Sutton Drive, Unit A
Burlington, ON L7L 6B8

February 22, 2024

MTE File No.: 38369-200



PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- .1 Read this section in conjunction with all other sections so as to conform to Division 1, and the General Requirements of the project.
- .2 Inform all sub-trades of the presence of Asbestos Containing Materials identified in the documents.
- .3 The Contractor involved directly or indirectly with the removal, handling, management, transportation and disposal of Asbestos Containing Materials and Asbestos Waste in any and all aspects shall take all reasonable precautions, due care and diligence to prevent asbestos from becoming airborne and shall take all reasonable precautions to control and prevent the spread of airborne asbestos in the event of an incident, accidental release or loss of containment. Cost of additional work by the Contractor and/or Consultant to rectify unsatisfactory conditions, shall be charged to the Contractor.
- .4 No allowance will be made for any difficulties encountered or any expenses incurred on account of any conditions of the site or any item existing thereon that is visible or known or can be reasonably anticipated.
- .5 The Contractor shall be prepared to respond throughout the duration of the project in order to repair, encapsulate remove or otherwise manage additional asbestos as required. The abatement contractor shall provide an emergency contact phone number and be on call to provide emergency services.
- .6 The abatement contractor shall control all water migration (including leakage and spillage) from the abatement work area to areas below/adjacent. It is the responsibility of the contractor to protect all items from damage caused by water used in the abatement work area(s). The abatement contractor must immediately mitigate any and all damage to the satisfaction of the owner and Consultant resulting from water used in the abatement work area(s) at their own expense. No allowances shall be made as a result of lost time, resources, materials or equipment.
- .7 It is the Contractor's responsibility to ensure all construction aspects of the project are conducted in accordance with applicable construction safety legislation, regulations and general approved practice. This includes, but is not limited to; all means, methods, techniques, sequences, procedures, safety programs and precautions used.

1.2 DEFINITIONS

- .1 Asbestos Containing Material: Materials that contain 0.5 percent or more asbestos by dry weight.
- .2 Asbestos Waste: is material that contains asbestos in more than a trivial amount or proportion as defined by Ontario Regulation 347 as amended by Ontario Regulation 558/00 and includes the following:
 - .1 Solid or liquid waste that results from the removal of asbestos-containing construction or insulation materials and contains asbestos;
 - .2 Commercial waste and/or domestic waste that contains asbestos;

PROJECT: Highview Elementary School
Mechanical Distribution Replacement Project
Hamilton-Wentworth District School Board

**SECTION 02 82 00
Asbestos Abatement**

- .3 Non-hazardous solid industrial waste that contains asbestos; and
- .4 Materials determined or deemed contaminated with asbestos.
- .3 Authorized Visitors: The Consultant or their representative, Architect, Owner's representatives, and persons representing regulatory agencies.
- .4 Contractor: Contractors or Sub-Contractor performing work included in this specification.
- .5 Consultant: Owner's Representative providing inspection and air monitoring.

MTE Consultants Inc.
1016 Sutton Drive, Unit A, Burlington, Ontario, L7L 6B8
Phone: 905-639-2552 Fax: 905-639-7727
Contact: Gavin Oakes Cell: 905-719-5217

PART 2 – SCOPE OF WORK

2.1 SUMMARY OF MATERIALS

- .1 Refer to the following documents regarding Designated Substances within the work areas. The survey and documentation of Designated Substances is required by Section 30 of the Occupational Health and Safety Act and shall be read in conjunction with these specifications.
 - .1 "*Designated Substance Audit Report – Highveiw Elementary School Mechanical Distribution Replacement*" dated February 22, 2024 prepared by MTE Consultants Inc..
 - .2 Removal and/or disturbance of asbestos-containing materials shall be performed in accordance with Ontario Regulation 278/05 – Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations.
 - .3 Removal and/or disturbance of lead-based and lead-containing materials shall be performed in accordance with the Environmental Abatement Council of Canada's Lead Guideline for Construction, Renovation, Maintenance and Repair (2014)
 - .4 Removal and/or disturbance of mercury-containing materials shall be performed in a manner which maintains the mercury intact, with no on-site crushing. Following removal, mercury-containing materials shall be safely stored on-Site until the Contractor can safely dispose of the materials at a licensed landfill.
 - .5 Removal and/or disturbance of silica-containing materials shall be performed in accordance with the Ministry of Labour's Guideline Silica on Construction Projects.
 - .6 Suspect PCB-containing equipment, including light ballasts, shall be assessed upon removal from service to determine PCB content. If identified as PCB-containing, equipment shall be appropriately stored and disposed of by the Contractor in accordance with SOR 2008-273 - PCB Regulations.
- .2 ACM may be present in concealed locations and become apparent during construction, renovation, alteration, or maintenance activities. Should any suspect ACM be discovered during the course of regular construction, renovation, alteration, or maintenance activities,

work should cease and the materials should not be disturbed. Suspect ACM must be treated as asbestos-containing or sampled and proven to not contain asbestos. Any activities that require disturbance of ACM must be performed in accordance with Ontario Regulation 278/05. It is the responsibility of the constructor to provide supervision and training and undertake due care and diligence in situations where such discoveries can and would occur.

- .3 Upon discovery of suspect or known ACM not identified or referred to in Section 2.0 or the reports referenced, the constructor shall immediately notify, orally and in writing; an inspector at the office of the Ministry of Labour nearest the workplace, the owner/representative, the Contractor and the joint health and safety committee or the health and safety representative, if any, for the workplace. The written notice shall include the following:
 - .1 The name and address of the person giving the notice;
 - .2 The name and address of the owner of the place where the work will be carried out;
 - .3 The municipal address or other description of the place where the work will be carried out sufficient to permit the inspector to locate the place, including the location with respect to the nearest public highway;
 - .4 A description of the work that will be carried out;
 - .5 The starting date of the work that will be carried out; and
 - .6 The name and address of the supervisor in charge of the work.
- .4 No work that is likely to involve handling, dealing with or disturbing or removing the discovered materials shall be done unless it has been determined whether the material is asbestos-containing; or, the work is performed in accordance to Ontario Regulation 278/05 as though the materials were asbestos-containing materials and, in the case of sprayed-on friable material, as though it contained a type of asbestos other than Chrysotile.

2.2 SUMMARY OF MATERIALS

- .1 Where required to complete the scope of the proposed renovations, disturbance of Asbestos-Containing Materials shall be performed as follows, in accordance with Ontario Regulation 278/05:

Location	ACM	Asbestos Operation	Notes
Boiler Room Ceiling	Asbestos Cement Ceiling Panels	Type 1	Removal using non-powered hand tools in conjunction with dust suppression

2.3 SCHEDULING

- .1 The Contractor shall schedule and perform work in accordance with the Contract Time established in the agreement.

2.4 INSPECTION

- .1 From project set-up to completion of clean-up, the Asbestos Abatement Consultant will be present on both the inside and outside of the work area.
- .2 Inspections will be conducted to confirm the Contractor's compliance. Failure to comply with the specified requirements may result in a stoppage of work at no additional cost to the Owner.
- .3 Promptly notify the Consultant of any ACM or potential ACM discovered during the work and not apparent in the audit, specifications or site meeting(s). DO NOT disturb such material until given direction by the Consultant. Assume such material to contain asbestos of a type other than Chrysotile until proven otherwise. Failure to notify the Consultant of ACM prior to removal will result in the dispute of payment of fees for any extra work performed.
- .4 The following inspections will be conducted at the Owner's cost. Provide Consultant with minimum of 24 Hours verbal notice:
 - .1 Pre Start Inspection: conducted after completion of work area set-up and prior to start of contaminated work.
 - .2 Contaminated Work Inspections: inspections and routine monitoring of the abatement will be conducted for the duration of the work.
 - .3 Final Inspection: conducted after removal of all ACM, and application of lockdown agent to confirm cleanliness. Additional labour or materials expended by the Asbestos Abatement Contractor to provide satisfactory performance to the level specified shall be at no additional cost.

2.5 SUBMITTALS

- .1 Submit to the Consultant upon request:
 - .1 AAW and AAS certification and relevant training for all workers/supervisors on-site and involved in the project.
 - .2 Names, credentials and contact information of Site superintendent and shift supervisors.
 - .3 All necessary permits, certificates, and documents for all aspects of the work to be completed.
 - .4 Ministry of Labour Notice of Project if applicable.
 - .5 Certificate of Approval for transportation of asbestos waste.
 - .6 Negative air unit performance leak tests.

- .7 HEPA/P100 filtered vacuum performance leak tests.
- .8 Any and all proposed changes, alterations, deviations intended to be made in scope, procedures and/or measures from these specifications or associated regulations, guidelines and standards.
- .2 The contractor shall have all asbestos waste transported under a current and valid Certificate of Approval or Provisional Certificate of Approval that specifically authorizes the transportation of asbestos waste in bulk. A copy of the Certificate of Approval will be maintained on-site and within the transport vehicle(s) and will be provided to the Consultant upon request.

2.6 PERMITS AND REGULATIONS

- .1 Comply with all federal, provincial and local requirements, Regulations and Acts as well as client/owner corporate policies and procedures pertaining to asbestos and health and safety, provided that in any case of conflict among these requirements or with these specifications the more stringent requirements shall apply.
- .2 Comply will all aspects of the Occupational Health and Safety Act Revised Statues of Ontario, 2005.
- .3 Comply with Ontario Regulation 278/05 "Asbestos on Construction Projects and in Buildings and Repair Operations", made under the Occupational Health and Safety Act.
- .4 Comply with "Handling, Transportation and Disposal of Asbestos Waste' in accordance with Ontario Regulation 347 as amended by Ontario Regulation 558/00, under the Environmental Protection Act (General-Waste Management), June 1992.
- .5 Before varying a measure or procedure described in Ontario Regulation 278/05, or these specifications, the contractor/constructor must ensure that the varied measure(s) and/or procedure(s), affords protection for the health and safety of workers and building occupants that is at least equal to the protection that would be provided by complying with Ontario Regulation 278/05. Written notice of the varied measure(s) and/or procedure(s) shall be given in advance to the joint health and safety committee and safety representative, if any, for the workplace. Such notice shall also be provided to the Consultant.

2.7 INSTRUCTION AND TRAINING

- .1 It shall be the responsibility of the Constructor to inform all workers involved in this project of the hazards in regard to the work to be performed and ensure appropriate training has been provided to all workers.
- .2 Every worker shall be properly trained in accordance with Section 19 of Ontario Regulation 278/05 in the removal/management of asbestos as a Type 1, Type 2 and Type 3 Operation and have had instruction and training in:
 - .1 Asbestos awareness;
 - .2 The hazards of asbestos exposure;
 - .3 Personal hygiene and work practices;
 - .4 The use, cleaning, maintenance, selection and disposal of respirators and

- protective clothing; and
- .5 The measures and procedures prescribed by Ontario Regulation 278/05.
- .3 Instruction and training related to personal protective equipment and hygiene shall include but shall not necessarily be limited to:
 - .1 Limitations of the equipment;
 - .2 Inspection and maintenance of the equipment;
 - .3 Fitting of the equipment; and
 - .4 Disinfecting and decontamination of the equipment.
- .4 The abatement contractor shall ensure that every worker/supervisor involved in a Type 3 operation meets the training and certification requirements of Section 20 of Ontario Regulation 278/05.

2.8 WORKER PROTECTION

- .1 All personal protective equipment shall be used and maintained in accordance to the manufactures specifications and/or federal, provincial, local regulations and Acts and any corporate policies and procedures.
- .2 All Personal protective equipment shall be of a nature that can be readily and effectively decontaminated or shall be of a disposable type.
- .3 Damaged, deteriorated or defective personal protective equipment shall be repaired or replaced immediately and the worker shall not continue with their duties until such damages, deterioration or defects have been corrected.
- .4 All personal protective equipment shall be durable enough and otherwise suitable to withstand the nature of the work being performed and the environmental conditions present within the work area(s).
- .5 The contractor shall provide all workers with personally issued respirators suitable for protection against asbestos and acceptable to the Ministry of Labour.
- .6 It shall be the responsibility of the contractor/constructor to ensure that all procedures for the use of respiratory equipment in accordance with Ontario Regulation 278/05 and manufacturers requirements are complied with. This shall include but shall not necessarily be limited to:
 - .1 The worker being physically able to perform the required duties while wearing the respirator;
 - .2 Respirators must be fit checked by qualitative or quantitative fit testing. Instruction must be provided as defined by the Occupational Health and safety Act;
 - .3 Air purifying respirators will be equipped with Ministry of Labour and NIOSH approved N 100, P 100, R 100 or HEPA hard exterior cassette style filters and shall be fitted so that an effective seal exists between the respirator and the workers face;

- .4 Supplied air respirators will have supply air meet the Canadian Standards Association (CSA) standard Z180.1-00, Compressed Breathing Air and Systems (March 2000);
 - .5 Cleaning and disinfecting of respirator(s) after each use or more often if needed;
 - .6 Inspection of respirator(s) and/or respiratory equipment before each use;
 - .7 The proper storage in a clean, dry and sanitary location when respirator(s) are not in use; and
 - .8 The development of written procedures regarding selection, use and care of respirators.
- .7 Protective Clothing: The contractor shall provide every worker who enters the work area with disposable coveralls and gloves which:
- .1 Shall be made of a material that does not readily retain nor permit the penetration of asbestos fibres;
 - .2 Shall consist of head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garment and skin under the protective clothing;
 - .3 Shall include suitable footwear; and
 - .4 Shall be repaired or replaced if torn or damaged.
- .8 The contractor shall provide worker(s) with Canadian Standards Association approved head, hearing and foot protection for the work being performed and as required by applicable construction safety regulations.

2.9 AUTHORIZED VISITOR PROTECTION

- .1 The contractor shall provide all prescribed personal protective equipment to authorized visitors to the work area(s).
- .2 Ensure authorized visitors have received required training prior to entry to the work areas.
- .3 Instruct authorized visitors in all relevant procedures to be followed while in and around the work area(s).

PART 3 - APPROVED PRODUCTS

3.1 MATERIALS AND EQUIPMENT

- .1 Amended Water: Water with a surfactant agent added to reduce water tension for thorough wetting of fibres.
- .2 Decontamination Shower: For the purpose of worker decontamination, a portable self-contained shower equipped with the following shall be utilized:
 - .1 Hot and cold water connections;

- .2 Interior hot and cold fixtures that can be controlled by the person using the shower; or provide a constant water temperature of not less the 40 Celsius but not greater 50 Celsius;
- .3 A containment basin of sufficient capacity to collect and contain the quantity of water required for at least one worker to properly decontaminate; and
- .4 Shall be supplied with soap and clean towels.
- .3 Drop Sheets: Fire retardant Polyethylene: 0.15mm (6mil) minimum thickness or Fire retardant Fibre Reinforced (FR) polyethylene: 0.15mm (6mil) minimum thickness. New Materials Only.
- .4 Exhausted Ducting: For use with Negative Air Unit(s) shall be flexible reinforced heavy duty type duct and be free of tears, punctures and damage and be otherwise suitable for the conditions of the work area(s). The cross sectional area of the ducting shall be maintained during the operation of the Negative Air Unit(s). And reasonable care shall be taken to ensure the ducting does not become damaged.
- .5 Micronic Water Filter: Shall be used to filter contaminated water that is to be discharged to local sanitary sewers. Contaminated water includes but is not necessarily limited to wash down water and decontamination shower water. The filter shall be equipped with a secondary 5 micrometer filter. As an alternative to filtration, contaminated water may be collected in appropriate waste containers for off-site disposal.
- .6 Negative Air Units: Shall be equipped with HEPA/P100 filters and shall have performance leak testing to verify efficiency of filters. Copies of filter tests shall be provided to the consultant upon request.
- .7 Power Tools: Used in the cutting, grinding, drilling, abrading, sanding, vibrating or removal of Asbestos Containing Material, as a Type 2 Operation, shall be equipped with an effective dust collection device with a HEPA/P100 filtration system capable of capturing all debris and dust generated by the tool. All tools and assemblies of dust collection and filtration equipment will be subject to approval and testing by the Consultant as seen fit prior to use.
- .8 Pressure Differential Measuring Device: Shall be capable of measuring pressure differential of 0.02 inches of water column and shall otherwise measure pressure differential in an appropriate range and interval. The device shall be dedicated to the site/work area, properly calibrated, installed and maintained throughout the duration of work to measure pressure differential between the enclosed removal area and the occupied area and shall be acceptable to the consultant. Daily records shall be kept by the contractor, on site, and made available to the consultant.
- .9 Sealant: A suitable water based post-removal sealer appropriate for the lock-down and sealing of asbestos fibres to polyethylene sheeting and cleaned substrate.
- .10 Sprayer(s): Shall be capable of delivering low velocity mist pattern spray of Amended water or sealant. Sprayers may be hand held reservoir type or powered airless units.
- .11 Surfactant: A commercial or industrial agent that when added to potable water reduces surface tension.
- .12 Tape: Shall be able to create and maintain a suitable seal on polyethylene and other

materials within the work area under both wet and dry conditions and ambient temperatures for the duration of the work being performed and shall otherwise be suitable for the work being performed.

- .13 Waste Containers: Waste shall be contained in two overlying dust tight containers impervious to asbestos fibres. The outer container shall be a minimum of 0.15mm (6mil.) thick sealable polyethylene waste bag.
 - .1 Should the waste material include sharp objects/materials, the inner container shall be a sealable metal, cardboard, fibre or plastic type suitable to resist puncturing of the containers;
 - .2 Containers shall be cleaned with a damp cloth or vacuum equipped with a HEPA filter immediately before being removed from the work area;
 - .3 Outer waste containers shall have a pre-printed cautionary asbestos warning identifying it as asbestos waste in both official languages clearly visible and legible in a colour which contrasts with the background on which it is printed; and,
 - .4 Be otherwise suited for the waste being contained.
- .14 Vacuums: Shall be equipped with HEPA/P100 filters and shall have performance leak testing to verify efficiency of filters. Copies of filter tests shall be provided to the consultant upon request.

3.2 SIGNAGE AND PLACARDS

- .1 Before beginning work, post a sufficient number of signs at each entrance/exit to the work area(s) warning of asbestos hazards and restricting access to authorized persons wearing personal protective equipment.
- .2 On both sides of all containers and vehicles used in the transport of asbestos waste in large easily legible letters of a minimum of ten centimetres (10cm) in height which contrast in colour with the background of the container or vehicle the following words shall be clearly displayed:
 - .1 CAUTION: CONTAINED ASBESTOS FIBRES; Avoid Creating Dust and Spillage; and,
 - .2 Asbestos May be Harmful to Your Health; Wear Approved Protective Equipment.

PART 4 - EXECUTION

4.1 GENERAL REQUIREMENTS – ALL PROCEDURES

- .1 Before beginning work, post at each entrance/exit to the work area(s) a sufficient number of signs warning of asbestos hazards and restricting access to authorized persons wearing personal protective equipment.
- .2 Eating, drinking, chewing or smoking shall not be permitted in the work area.
- .3 Where wet removals are to take place de-energize and disable with proper lock-out tag-out procedures electrical systems.

- .4 Temporary electrical distribution systems equipped with Ground Fault Circuit Interrupters (GFCI) shall be supplied and used by the Contractor during wet removals.
- .5 Remove all items from the work area(s). If items are affixed or otherwise cannot be removed from the work area(s), ensure that they are pre-cleaned using a HEPA/P100 filtered vacuum or damp wiping and completely covered and sealed with polyethylene sheeting and otherwise adequately protected.
- .6 Before commencing with work, disable and seal all ventilation to and from the work area and ensure ventilation remains disabled throughout the duration of activities. Seal any and all openings within the work area(s).
- .7 Removal of Asbestos Containing Materials shall commence only after set-up is complete.
- .8 Frequently and at regular intervals during the Work and immediately upon completion of the work clean up and place all asbestos dust, debris and waste in approved waste containers.
- .9 Prevent the spread of dust from the Work Area.
- .10 At completion of Work or at the end of the work day, remove from work area(s) all asbestos waste and in accordance with requirements of Ontario Regulations and these specifications dispose of asbestos waste off-site.

4.2 EXECUTION OF TYPE 1 OPERATION

- .1 Set-Up
 - .1 Ensure adequate signage is posted restricting access to the work area to authorized personnel.
 - .2 Prevent the spread of dust from the work area using measures appropriate to the work to be done. Use single layer rip proof polyethylene drop sheets. In areas with carpeted or textured floors which cannot be readily cleaned use double layer rip proof polyethylene over flooring in work area(s).
 - .3 Provide facilities for washing hands and face.
 - .4 Allow for inspection by the Consultant to confirm that set-up is sufficient prior to the start of work.
- .2 Asbestos Removal
 - .1 If a worker requests, the contractor shall supply a respirator in accordance with Ontario Regulation 278/05 Table 2 requirements, suitable for protection against asbestos and protective coveralls and the worker shall wear the respirator and coveralls.
 - .2 Perform removal of ACM in a manner to reduce dust creation to lowest level practicable by:
 - Dust and waste shall not be permitted to fall freely from one work level to another
 - Use of hand tools only for the removal of ACM

- Careful removal of ACM
 - Continual wetting of Asbestos Containing Materials throughout the work
 - Placing removed asbestos waste directly into approved waste containers
- .3 All workers shall proceed to washing facilities and wash hands and face before leaving the work area.
- .3 Clean-Up
- .1 After completion of the removal; perform final thorough cleanup of polyethylene, barriers, drop sheets, tools, equipment, items, work area(s) and adjacent areas using HEPA/P100 filtered vacuum or damp wiping methods. Ensuring work area(s) and all items within the work area(s) are clean of visible asbestos dust, debris and waste. Place and seal asbestos dust debris and waste in approved waste containers.
 - .2 Allow for inspection by Consultant to determine abatement is complete and an acceptable level of cleanliness prior to application of sealant.
 - .3 Wet and fold polyethylene drop sheets and barriers in a manner which contains asbestos dust, debris and waste, place and seal in approved waste containers.
 - .4 If Personal Protective Equipment was requested and used by the worker prior to leaving the work area(s) clean all asbestos dust, debris and waste from clothing and personal protective equipment (PPE). Remove and place disposable PPE in approved waste container.
 - .5 Immediately before their removal from the work area, clean each filled waste container using HEPA/P100 filtered vacuum and place and seal in a secondary clean waste container.

END