



Environmental
Abatement
Council of
Canada

Canadian Chapter of the EIA

Designated Substances and Hazardous Materials Assessments Guideline

September 16th, 2021

Who is EACC and what do you do?

- The Environmental Abatement Council of Canada (EACC) is an organization serving the environmental abatement industry, comprised of contractors, consultants, engineers, suppliers, government officials and others with an interest in the environmental abatement industry. We are the Canadian Chapter of the Environmental Information Association (EIA) in the USA.
- Our mandate is the promotion of the environmental abatement and hazardous materials industry.
- To promote high standards of conduct among our members.
- To collect and disseminate information regarding the management of hazardous materials including regulations from all provinces and territories
- Assist industry sectors by producing peer reviewed industry guidelines on specific topics where regulation do not exist or where additional information is needed

EACC Industry Guidelines

LEAD GUIDELINE

FOR CONSTRUCTION, RENOVATION,
MAINTENANCE OR REPAIR



MOULD ABATEMENT GUIDELINES



VERMICULITE GUIDELINE



CONSTRUCTION WORKER HYGIENE PRACTICES GUIDELINE



The Committee

Representatives from the following firms:

- Premier Environmental
- Maple Environmental
- MTE Consultants
- GDH Limited
- Environmental Services Group
- EMSL Analytical
- WSP Canada
- Paracel Laboratories
- Safetech
- Firstbrook Cassie Anderson
- Priestly Demolition
- Blumetric
- LiUNA Local 508
- Stantec
- ECOH
- Golder – now WSP
- EHS Partnership
- Evelyn Stefov
- Extensive reviews by partners

The Reasons

There were **3 main reasons** that this document was required

- **Protection of the workers**
 - Properly identified materials and locations with consistent reporting will make it easier to protect the workers from the unknowns.
- **Consistency in the Industry**
 - Wide spread reports of inconsistency in report content across the industry, making it difficult for contractors to price projects properly
- **Clarification for building owners on their responsibilities**
 - Many people use these documents as the scope of work for the abatement projects



Intent of the Guideline

- EACC has developed this guideline to bridge the gaps between legislation, industry best practice, the most recent science and client directives
- There is significant variability in the content, scope, methodology, application and quality of these reports across the multiple industry sectors (abatement, construction/renovation, and demolition)
- EACC has developed this document to provide a framework for building owners, architects, engineers, consultants, and contractors to foster consistency in discussing and determining the scope of these assessments



more on the intent of the guideline

- This guideline is intended to be used:
 - By building owners to determine the scope for assessments,
 - By the environmental abatement industry to identify materials requiring abatement,
 - By the construction industry to identify materials requiring special handling/disposal,
 - By design professionals (e.g. architects, engineers, project managers) to inform cost, schedule and disposal.



Limitations of the Guideline

- This document is not a step-by-step guide to preparing an assessment
 - A qualified professional should be retained for that purpose, but this guide will explain the reasons for these assessments and the information the assessment should contain based on the type of project to be undertaken.
 - The information and procedures identified are based on current and relevant legislation, the state of the sciences and practical experience.
- EACC is not responsible for the interpretation or use of the information contained within this document.
 - It is the responsibility of the user to determine whether the information contained herein is appropriate to the user's specific activities.



Limitations of the Guideline Cont'd

- While EACC has attempted to identify and provide procedures for common scenarios where the assessment and reporting of DSHM may be required, not all situations can be anticipated in advance.
- The information contained within this document may not be suitable for all applications, buildings, projects or work and caution must be used in applying the methods and procedures outlined in this document.
- Use your professional judgement and if in doubt, contact a health and safety professional with experience in DSHM.

BORING

Section 3

Disclaimer

- The following sections are EACC's determination of Industry Best Practices and do not represent a legal opinion. The Regulations noted in Section 2 of this document form the framework around the needs and requirements for preparing pre-construction DSHM assessments in the Province of Ontario. It is the readers responsibility to ensure they are complying with all applicable legislation prior to commencing a construction project.
- EACC recognizes the differences between designated substances and hazardous building materials, but has chosen to group them together for worker safety, therefore the term DSHM is used synonymously with Designated Substances throughout the document



Why is this so important?

- These assessments are required by legislation when a project (e.g., construction, demolition, selective demolition, renovation) is planned, with no exemption for recent construction.
- These assessments are not required for ongoing operation and maintenance, but O. Reg. 278/05 does require that an asbestos survey be completed for most buildings.
- Section 30 of the *Occupational Health and Safety Act, R.S.O., 1990, c. O.1* (the Act) requires that an owner determine whether any designated substances are present at the project site and prepare a list of all designated substances identified.
- The list of designated substances must be provided to contractors as part of the tendering information so that they may comply with the Act.



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- **APPENDIX I** COMMON BUILDING MATERIALS CONTAINING DESIGNATED SUBSTANCES



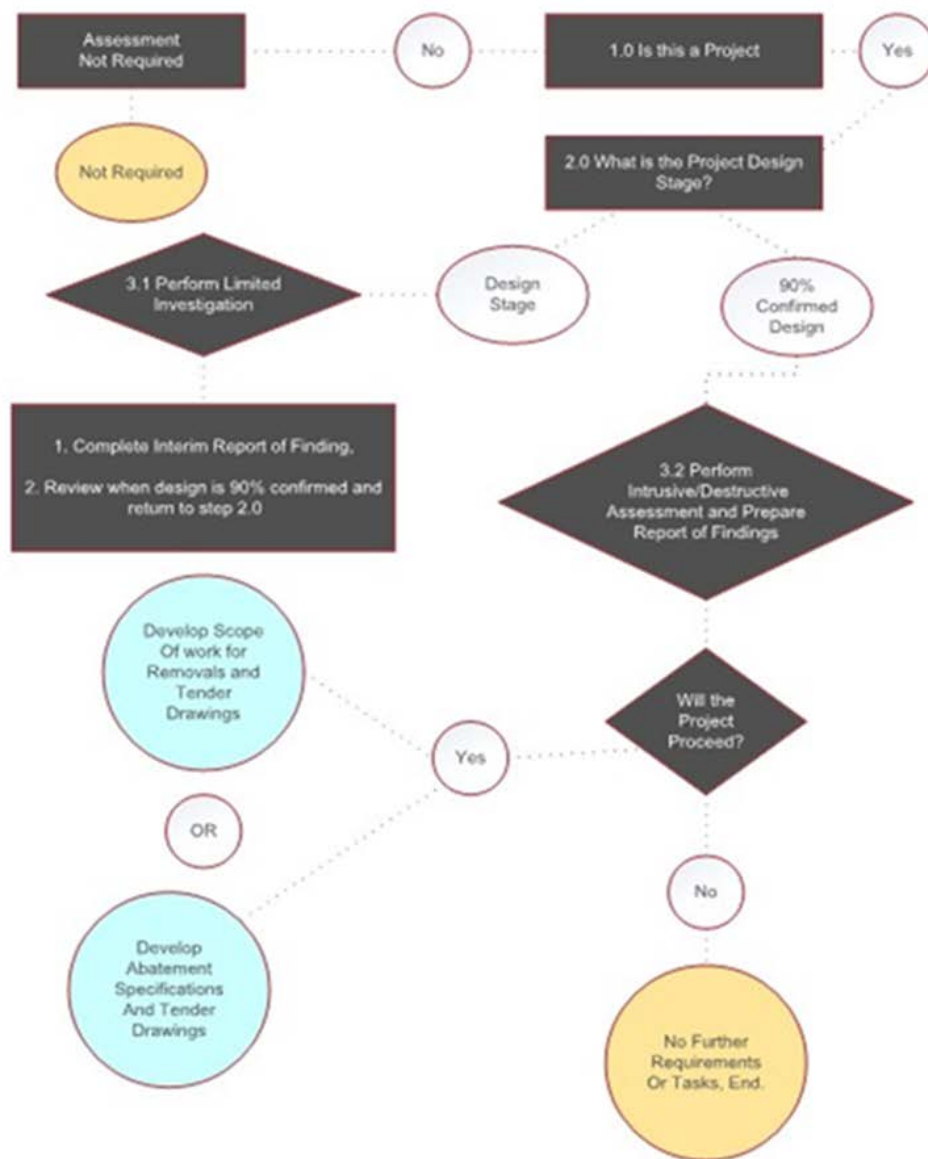
When are these assessments required?

- In order to comply with the requirements of the Ontario Occupational Health and Safety Act (s. 30) and the requirements of the Ontario Regulation 278/05 - Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations (s. 10) an assessment should be performed prior to the start of a project that could disturb building materials that may contain a designated substance.
- The duty to complete the pre-construction assessment is typically placed on the Project Owner who may not necessarily be the property or building owner but may be an agent acting on behalf of them.
- The Project Owner should identify those materials that will be or are likely to be disturbed, handled, or removed as part of a project.
- Project Owners must disclose the list of designated substances present at the project site as part of the tendering process. Constructors must also provide the list to all subcontractors at the time of tender.



When is an Assessment Required

And What Type of Assessment will be completed



* Refer to current Ontario Health and Safety legislation for the definition of "Project".
 ** Manage hazardous materials exposure through applicable health and safety assessments, measures and procedure for work that is not a project.

When is an assessment required?

- Building/Project Owners should understand when a DSHM Survey is required by Regulation.
- Failure to complete an assessment may place workers, building occupants and the public in danger and poses significant liabilities to the Project Owner.



When is an assessment not required?

- An assessment is not required for daily and non-construction projects as other occupational health and safety legislation and mechanisms (e.g. WHMIS, work place exposure assessments, and procedures) are in place to control worker exposure to designated substances and hazardous materials.
- An assessment is not meant to replace or supersede workplace control measures prescribed under OHSA and other regulations.
- An assessment is not required for maintenance projects that will not impact hazardous building materials.



Small Projects

- In many cases a project may be very small in scope and/or short duration work, but an assessment is still required.
- Renovations at newer buildings still require some level of assessment and review for compliance.
- In these types of situations the assessment could be as simple as a letter identifying the designated substances and hazardous materials present.
- Such a letter may include classifications/operations of work or may refer to a simplified safe work procedure.



Large Projects

- Larger projects (e.g. construction, renovation, demolition) will often involve a significant area of a building, an entire building or multiple buildings as part of a single contract.
- In this case a larger DSHM Survey document complete with figures, tables and photographs is appropriate to ensure the information is properly and efficiently conveyed.
- In most cases a project of this magnitude undergo a tender process and will include detailed specifications and construction documentation.



Emergency Work

- When landlords, owners, or contractors are dealing with emergency work (e.g. fire damage, structural integrity concerns, natural disasters) or rapid response work (e.g. flooding, weather damages), initial stages of controlling the work area should begin prior to completing the assessment, provided reasonable measures are put in place to prevent worker exposure.
- Failure to mitigate against further loss (e.g. mould and bacterial amplification, structural damage etc.) can add substantial safety hazards and costs to the project.



Emergency Work

- Early interventions, such as water extraction, carpet removal, and drying activities that will not disturb designated substances should be implemented concurrent with the completion of the assessment.
- If suspected designated substances may be disturbed, a worst-case scenario approach may be adopted (assume everything contains asbestos, lead, mercury), or a project-specific assessment can be completed on an expedited turnaround and using current available data on the building (e.g. date of construction).



What is included in an assessment?

- Defined Scope of Work
 - The DSHM survey scope of work, as well as the limitations of the investigations, should be understood, and agreed to by all parties - prior to commencing with the DSHM survey.
- Records Review
 - Review of available site records shall be undertaken to identify and evaluate potential DSHM
- Interviews
 - If site staff are available to assist, they can be invaluable
- Site Inspections
- Assessment Report



Limitations of some Assessments

- Concealed areas that are not accessible.
- Facility owned or stored items such as furniture, appliances, etc.
- Internal components of electrical or mechanical systems (e.g. wiring, pipe gaskets, boilers, elevator equipment, etc.).
- Materials not associated with building construction, building materials or base building systems.
- Materials that may cause resultant damage to the building if sampled (e.g. roofing materials, caulking, glazing compounds, exterior cladding, ceramic tile grout mortar and adhesive etc.).
- Operations or process materials or products (e.g. chemicals, raw materials, etc.)
- Underground pipes, systems or items.



Pre-Construction Assessments

- Pre-Construction assessments are completed when a project will not require building demolition. This level of investigation will only assess materials that will be specifically disturbed during construction/renovation work.
- The assessment may not require investigations to reach base building structure.
- This assessment will likely be completed at preliminary design – 50% and will be involve non-intrusive or limited intrusive investigation



Pre-Demolition Assessments

- Pre-Demolition assessments are completed when a building or structure will be demolished and removed from the site.
- This level of assessment will require the investigation of materials within the building or structure and as such, intrusive investigations will be required for building materials and building systems that could be hidden.
- This assessment may need to be completed in two phases; preliminary design – 50% (non-intrusive/limited intrusive investigations) and final design – 95%, in order to allow for intrusive investigations.



What to Sample?

- Samples of suspect materials should be collected separately from each construction phase (homogeneous areas).
- Samples should be collected from original building components where possible such as perimeter walls, base building systems etc.
- Separate samples should be collected from areas that are suspected or known of being renovated since the time of the original construction.
- Although asbestos regulations restricting the use of asbestos in many building materials in Ontario commenced in 1985, it is widely known that materials containing asbestos were used well beyond this time as materials were weaned through the supply chain as well as the importing of asbestos-containing materials continued well beyond this date.



What to Sample?

- Paints should be sampled for Lead up to installation date of 2005.
- PCB's – based on the date of construction of the building, and assessment for PCB's may be required - end of use dates approaching.
- Mercury – depending on the use of the facility, an assessment for mercury-containing components or coatings may be required.
- Vermiculite – according to procedures in EACC Vermiculite Guideline – special attention to exterior block walls.



Demolition

- End use of facility/site must be considered prior to undertaking survey so proper survey design is considered (eg. knock down to grade, structural gut, return to greenfield/full site rehabilitation)
- For industrial sites all current and historic processes must be known and understood prior to scoping hazardous materials portion of the survey (eg. history of industrial chemical use and processes)
- Consideration of limitations discussed below must be clearly reported up front
- Assumptions should be limited, as few as possible. May not be possible depending on structural integrity of building.
- All other assumptions should be validated with using cost benefit analysis (eg. if it creates and unknown for bidder than resolve prior to tender close)



Demolition Cont'd

- There may be constraints that limit access for testing of materials during project design phase such as occupants, hazardous operations/equipment/live utilities that prevent access. All potential materials noted but not tested should be verified prior to demolition or treated as containing.
- The final testing should be co-ordinated with the owner prior to allowing contractors to begin work, but contracts can be structured to allow post-tender testing .
- Structural limitations- any time the structure is compromised for any reason a structural review should be conducted prior to entry.
- If an engineer determines that a structure is unsafe to enter, a cost benefit analysis should be conducted with respect to performing a shoring/bracing make safe process versus demolishing and presuming all suspect building materials contain hazardous materials.



Demolition other considerations

- Structural stability – assessment required?
- Sub-Surface conditions
- Waste Streams
- Tanks and pipes evacuated
 - If removal is anticipated then identification of pipe and tank contents should be included.



Waste

- Waste should be classified before it is removed from the site
- Waste generated from asbestos abatement operations is asbestos waste and should be handled as such
- Samples of the representative waste stream should be recovered and subjected to the Toxicity Characteristic Leaching Procedure (TCLP) to determine the appropriate disposal criteria. In many instances this cannot be conducted by the ENV consultant during the DSHM assessment as they do not know how the waste will be processed.



Reporting – Limited Scope projects

- For an assessment of limited scope, a letter report may be prepared.
- The report should include a description of the scope of work, any historical documentation reviewed or interviews conducted, definition of the project area, and results of sampling and inspection.
- The letter may provide recommendations for immediate activities to address DSHM or for further investigation

Reporting Full Scope projects

- Title Page
- Executive Summary
- Table of Contents
- Introduction
- Scope of Work/Methodology
- Site Overview
- Discussions/Findings/Recommendations
- Limitations
- Appendices



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