Background: This guideline has been revised to clarify the two stages of an asbestos risk assessment and to highlight related regulatory requirements.

G6.6-1 Risk assessment
Issued August 1999; Preliminary Revision June 4, 2009

Regulatory excerpt
Section 6.6 of the *OHS Regulation* ("*Regulation*") states:

Assessment and classification

(1) The employer must ensure that a risk assessment is conducted by a qualified person on asbestos-containing material identified in the inventory, with due regard for the condition of the material, its friability, accessibility and likelihood of damage, and the potential for fibre release and exposure of workers.

(2) The employer must ensure that a risk assessment has been conducted before any demolition, alteration, or repair of machinery, equipment, or structures where asbestos may be disturbed.

(3) Before work involving asbestos takes place the employer must ensure that a qualified person assesses the work activity and classifies it as a low, moderate, or high risk activity.

(4) The qualified person referenced in subsections (1) and (3) must be an occupational health and safety professional with experience in the practice of occupational hygiene as it relates to asbestos management.

Purpose of guideline
The purpose of this guideline is to explain the two-stage process involved in an asbestos risk assessment. This guideline also provides information regarding the requirement to conduct an asbestos risk assessment prior to any demolition, alteration or repair of machinery, equipment or structures.

Requirement to conduct an asbestos risk assessment
As required by section 6.4 of the *Regulation*, an inventory of all asbestos-containing materials must be prepared and kept current. Under section 6.6(1), a risk assessment must be conducted by a qualified person on asbestos-containing material identified in the inventory. Assessment of the risk to workers from asbestos materials either used or present in the workplace relies on a two-stage process. The goal of this process is to prioritize materials for abatement control and to assist in selecting appropriate control options.

Risk assessment process – stage 1
The first stage of an asbestos risk assessment involves evaluating parameters that are indicative of the likelihood of worker exposure. The parameters most commonly looked at include:

<u>Accessibility</u>
How easily will the asbestos fibres become airborne because of architectural design, location and occupant activities? Are the fibres

- Totally enclosed, such as behind a fixed ceiling? If so, there is a minimal risk of exposure
- Inaccessible, such as beyond the reach of the public? If so, there is a low risk of exposure
- Accessible in a low activity area? If so, there is a moderate risk of exposure
- Accessible in a high activity area, such as a hallway or stairway? If so, there is a high risk of exposure

Condition

- Based on a visual examination, what is the existing state of the material?
- Is the material in good condition, showing no apparent damage at all? If so, there is a minimal risk of exposure.
- Does the material have mild damage? If so, there is a low risk of exposure.
- Does the material have moderate damage? If so, there is a moderate risk of exposure.
- Does the material have severe damage? For example, are areas missing, hanging loose, or water-damaged? If so, there is a high risk of exposure.

Friability

- To what extent can the material be broken apart if a person or object makes contact with it?
- Is the material firmly bound? If so, it is not friable and there is a minimal risk of exposure.
- Is the material slightly friable? If so, there is a low risk of exposure.
- Is the material moderately friable? If so, there is a moderate risk of exposure.
- Does the material break apart easily? If so, it is very friable and there is a high risk of exposure.

Presence in return air plenum

- Is the asbestos-containing material present in the air moving system?

Percentage of asbestos

- What is the percentage of asbestos contained in the material?

Other parameters that may be examined include the extent of water damage, the exposed surface area of friable material, activity and movement (such as air movement, building vibration from machinery or other sources, and activity levels of workers).

Risk assessment process – stage 2

During the second stage of the risk assessment process, each parameter is assigned a "score" to indicate the potential for exposure. These scores are then combined to derive an overall risk factor that is used to prioritize the control and abatement options to be implemented. Different approaches are used to assign scores to the parameters and to combine the scores into one overall risk factor.

Some examples are briefly described below.

- A numerical rating scale is used in a system developed by the US Environmental Protection Agency (for example "0" or "1" is assigned to parameters for which there is a low potential of exposure, "4" is assigned to those for which the potential of exposure is high). These scores are then combined using a

mathematical formula. The range into which the overall score falls will determine what remedial action is recommended (for example, if the overall score is in the range of 5-9, then the recommended action is to review in two to three years).

- A numerical rating scale need not be used. An alternative system, described in an Alberta Occupational Health and Safety publication, "Asbestos Control – Sprayed on Applications", published in 1990, categorizes the parameters on the basis of high, medium or low potential for exposure. The need for control is determined by consulting a decision table. For example, in situations where there is no asbestos in the return air plenum and the material contains less than 20% asbestos, there is no need for immediate control, unless two parameters have been assigned a high potential of exposure or three parameters have been assigned a medium potential of exposure.

Risk assessment before demolition, alteration or repair

Section 6.6(2) requires that a risk assessment be conducted "before any demolition, alteration, or repair of machinery, equipment, or structures where asbestos may be disturbed." This obligation is related to the requirements in section 20.112 of the *Regulation* dealing with hazardous materials on demolition or salvage of equipment, buildings, etc. before work begins. Please refer to OHS Guideline G20.112 for further information.

Further information

Further details about asbestos management are provided in the WorkSafeBC manual Safe Work Practices for Handling Asbestos.