OSHA Work Practices and Engineering Controls/OSHA Methods

All automotive brake and clutch repair facilities in the United States must comply with the OSHA asbestos standard The proper use of engineering controls and work practices by properly trained employees working on automotive brakes and clutches will reduce their asbestos exposure below the permissible exposure level of 0.1 fiber per cubic centimeter of air, expressed as an 8-hour time-weighted average. Respiratory protection is not required during bra and clutch jobs where the control methods described below are used.

The two preferred OSHA methods to control asbestos dust during brake and clutch repair and service are: (1) a negative pressure enclosure/HEPA (high-efficiency particulate air) vacuum system, and (2) the low pressure/wet cleaning method. The employer may use other methods (in conjunction with written procedures), to reduce exposu to levels equivalent to the negative pressure enclosure/HEPA vacuum system. For facilities that inspect, disassembl reassemble and/or repair five or fewer brake or clutch jobs per week, the wet method (described in paragraph D of Appendix F) can be used. The spray can/solvent system method can be used as an alternative preferred method si it meets the equivalency criterion of the negative pressure enclosure/HEPA vacuum system method. Proper training essential to ensure that employees use the methods in an effective manner.

Negative pressure enclosure/HEPA vacuum system method

The negative pressure enclosure/HEPA vacuum system method includes the following steps:

1. Enclose the brake or clutch assembly to prevent release of asbestos fibers into the employee's breathing zon during brake or clutch inspection, disassembly, repair, and reassembly operations. Use a transparent enclosu with impermeable sleeves.
2. Seal the enclosure tightly and thoroughly, inspect for leaks before beginning work.
3. The enclosure must be transparent so that the employee can clearly see the operation during brake or clutch inspection, disassembly, repair, and reassembly. The enclosure must also have impermeable sleeves to allow the employee to handle the brake and clutch assembly without penetrating the enclosure. The integrity of th sleeves and ports must be inspected before work begins.
4. Use a HEPA-filtered vacuum to keep the enclosure under negative pressure throughout the operation. Compressed air may be used to remove asbestos fibers or particles from the enclosure.
5. Use the HEPA-filtered vacuum first to loosen asbestos residue from the brake and clutch parts, then evacuat the loosened material from the enclosure into a vacuum filter.
6. When the vacuum filter is full, spray it with a fine mist of water before removing it. Immediately place it in a labeled, impermeable container and dispose of it as asbestos waste in accordance with federal, state, and loc regulations and in compliance with 1910.1001(k)(6). The label must include the following information: "DANGER, CONTAINS ASBESTOS FIBERS, AVOID CREATING DUST, CANCER AND LUNG DISEASE HAZARD."
7. Immediately clean spills or releases of asbestos containing waste material from inside the enclosure or vacuu hose or filter. Properly dispose of waste as asbestos waste.

Vacuum enclosure units should be large enough to fully enclose and remove the brake drum with enough room for hammering if the drums are difficult to remove because of wear, rust, or other reasons. Enclosure systems should have good interior lighting to illuminate the work area. The enclosure should completely enclose the brake drum, a form a tight seal behind the backing plate. Air guns should never be aimed towards the seal as this may reduce or eliminate its protective ability. After cleaning with compressed air, the inside surfaces of the enclosure should be HI vacuumed to keep the inside clean and maintain visibility. Each brake component should be vacuumed as it is removed and the backing plate should be vacuumed after all the components have been removed. Rags used to wi or clean used brake parts, should not be used to wipe hands. Mechanics should wear an appropriate NIOSH-approv respirator for asbestos when changing vacuum unit filters.

Low pressure/wet cleaning method

The **low pressure/wet cleaning method** involves the following steps:

1. Position a catch basin under the brake assembly to avoid splashes and spills.
2. Gently flood the brake assembly with water containing an organic solvent or wetting agent to prevent asbest containing brake dust from becoming airborne.
3. For drum brakes, ensure that the water solution flows between the brake drum and the brake support before removing the brake drum.
4. After removing the brake drum, thoroughly wet the wheel hub and back of the brake assembly with the wate solution to suppress dust.