

Maintenance, inspection and testing of H-Class vacuum cleaners

The best way to clean up asbestos contaminated dust and small pieces of debris is by using an H-class industrial vacuum followed by a wet-wipe of any surfaces. It is important that these vacuums are regularly maintained, inspected and tested.

What standards apply?

Vacuum cleaners used for asbestos need to comply with the Class H requirements in *AS/NZS 60335.2.69 Particular requirements for wet and dry vacuum cleaners, including power brush, for industrial and commercial use* or its international equivalents (e.g. International Standard IEC 60335-2-69).

HEPA filters used in H-Class vacuums need to comply with *AS 4260-1997 High efficiency particulate air (HEPA) filters – Classification, construction and performance* or its international equivalent.

H-Class vacuum cleaners built to AS/NZS 60335.2.69 are designed to comply with strict filtration efficiencies (99.995 per cent efficient).

The vacuum cleaner must display the high hazard (H) class symbol (see figure 1), the model type, manufacturer's name and trademark.

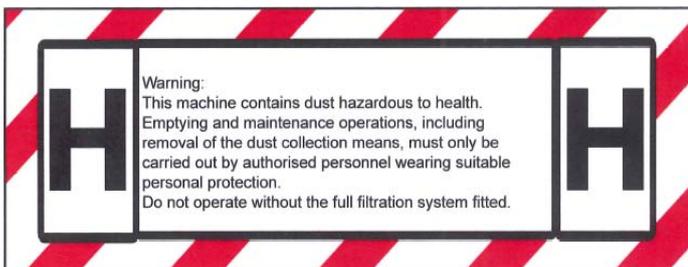


Figure 1 - H-Class warning label

Note: domestic vacuum cleaners or vacuum cleaners with an “L” or “M” class symbol are not safe for use with asbestos.

Examples of compliant and non-compliant H-Class vacuums are shown in figure 2.

Maintenance, inspection and testing

H-Class vacuum cleaners must be maintained, inspected and tested by a competent person either:

- in accordance with the manufacturer's recommendations
- in accordance with a competent person's recommendations, if there are no recommendations by the manufacturer.

A competent person is someone who has the knowledge and skills acquired through training, qualification or experience in order to carry out the task.

Manufacturers of well-known brands of H-Class vacuum cleaners recommend the appliance's dust filtration efficiency should be tested at least annually.

Frequency of testing

The standard states:

- an inspection needs to be performed at least annually to inspect the filters for damage, check the air tightness of the appliance and ensure the proper function of the control mechanism
- the appliance's filter efficiency should be tested at least annually by a method described in section AA.22.201.2 of the standard.

Inspection and test method

Section AA.22.201.2A of the standard outlines the Dispersed Oil Particulate (DOP) test as the method to ensure the HEPA filter and the seals inside the appliance are containing asbestos dust at 99.995 per cent efficiency.

Before testing, the technician will inspect the vacuum cleaner for damage to gaskets/seals and any visual evidence that the appliance has taken on dust contamination past the HEPA filtration.

VACUUMS THAT DO NOT COMPLY WITH AS/NZ 60335.2.69 Household & Similar Electrical Appliances - Safety Part 2.69: Particular requirements for wet & dry vacuum cleaners, including power brush, for industrial & commercial use)



NILFISK GM80 HAZ DUST



NILFISK GD930S2



NILFISK HDS2000



NILFISK GD1005 & GD1010



NILFISK CFM 127



NILFISK CFM 137

VACUUMS THAT DO COMPLY WITH AS/NZ 60335.2.69 Household & Similar Electrical Appliances - Safety Part 2.69: Particular requirements for wet & dry vacuum cleaners, including power brush, for industrial & commercial use)

The above machines were approved in the past to superseded 1998 standard: AS/NZ 3544-1988 "Industrial Vacuum Cleaners for Particulates Hazardous to Health". This standard lapsed in 2003 and was superseded by the adoption of the current IEC standard: AS/NZ 60335.2.69 "Household & Similar Electrical Appliances - Safety - Part 2-69" Nilfisk and Nilfisk-CFM have not imported, assembled or sold the above models for "H Class" use for many years, which is evidence of the fact that they do not comply.



NUMATIC HZQ200



NUMATIC HZQ350



NUMATIC HZQ570



NUMATIC HZQ750-2



NILFISK IVB3H



NILFISK IVB5H



NILFISK IVB7H



KERRICK PULSAR429



KERRICK PULSAR515



NILFISK-CFM S2H



NILFISK-CFM S3H

Figure 2 Examples of compliant and non-compliant H-Class vacuums. Image reproduced with permission from Assured Equipment Services Pty Ltd.

DOP testing may not be carried out if there is evidence of damage to the vacuum cleaner. If damage to the vacuum cleaner is significant, the technician may conclude the appliance should no longer be used for hazardous dust because of the risk of hazardous dust being emitted into the air of the work area.

Examples of how vacuum cleaners can be damaged include:

- improper use such as cleaning up dust from heavy concrete grinding or use in other in highly dusty environments.
- misuse or damage, for example, from
 - being dropped
 - knocked around during transport in vehicles
 - tied down too tightly with ratchet straps
 - not replacing inlet or exhaust caps causing contamination on what should be the clean side of the equipment.

Additionally, some H-Class vacuum cleaners using self-ventilating motors (bypass air) may be precluded from DOP testing or servicing because of contamination of asbestos dust outside the HEPA protected zones of the vacuum cleaner.



Figure 3 Damage to the casing of an H-Class vacuum cleaner

What will a WHSQ inspector look for?

Workplace health and safety inspectors will check:

- that an H-Class vacuum cleaner is being used for any vacuuming work to clean up asbestos dust and debris
- the general condition of the vacuum cleaner, including any cracks in the casing or damage to the electrical cabling. *Figure 3* shows picture of damage to the casing.
- for at least a yearly test report for each vacuum cleaner that has a HEPA filtered motor cooling fan, showing the HEPA filter and the seals inside the machine are containing asbestos dust at the 99.995 per cent efficiency requirement, using the DOP test or equivalent as the method.
- maintenance logs for each vacuum cleaner recording:
 - filter changes
 - pre-start inspections
- that procedures are established for general maintenance, including:
 - decontamination of the vacuum cleaner and attachments after use (including wet wiping and vacuuming)
 - storage of vacuum cleaner and attachments after decontamination (for example, placing vacuum and attachments in sealed, labelled containers or bags)
 - disposal (as asbestos waste) of rags and other disposable or single-use items used during decontamination
 - bag and filter removal and disposal (in accordance with the manufacturer's instructions and disposed of as asbestos waste).
- for at least yearly inspection reports for all H-Class vacuum cleaners, showing inspection of the filters for damage, check of the air tightness of the appliance and the proper function of the control mechanism.

Further information

- AS/NZS 60335.2.69 *Household and similar electrical appliances - Safety - Particular requirements for wet and dry vacuum cleaners, including power brush, for commercial use*
- AS 4260-1997 *High efficiency particulate air (HEPA) filters – Classification, construction and performance*
- *Work Health and Safety Regulation 2011*
- *How to Safely Remove Asbestos Code of Practice 2011*

