



Construction Dust and H - type Vacuums

HSE recently announced its “Safer Sites initiative” where one of the key interests is “Exposure to construction dust”.

So what is construction dust?

This is the term to classify dust created on construction sites by a variety of operations.



Applied to surface preparation and removal, materials such as concrete and stone produce dust containing silica when preparing or cutting the surface, gypsum, marble and terrazzo produce lower toxicity dusts and the removal of epoxy, adhesive and elastomeric products and the sanding and refurbishment of softwood and hardwood all present a health hazard.

Construction dust can be minimised in all cases when dust extraction equipment is fitted to the machine or tool selected for the task, thus removing the dust as it is being produced. Exposure to residual particles is avoided by selecting the correct PPE (dust masks, breathing apparatus). Face fit tests must be carried out every 12 months.

Dust extraction has always been an integral part of The Preparation Group’s contracting operations and all equipment we sell is designed to work with our range of industrial vacuums. However, selecting the most effective dust extraction equipment to work in conjunction with your chosen surface preparation machine and ensuring its suitability for the intended task is a complicated process.

So what do you need to know?

- The project size and specification
- Available site power
- The size and capability of the equipment selected for the task
- The material composition
- The volume and density of dust created by the process

also

- Does your operation require a specific filter grade or has an H-type Vacuum been specified? (this is essential when removing materials with any degree of asbestos content)

For all construction projects industrial grade extraction is essential.



What equipment do you need?

For small tools and equipment and light applications a single motor vacuum maybe suitable for the task. However, multiple motor models allow the operator to increase/decrease power and suction and therefore to optimise dust containment or to save energy when the selected operation does not require full operating capacity of the vacuum.

The next consideration must be the size of the 'bin' or bag attachment in which the dust is contained (prior to disposal).

Is the capacity suitable to extract dust produced by the process and large enough to ensure that you can operate plant effectively for the duration of the project? It is not practical to have to continually empty the 'bin' or to seal bags.

For bigger plant, there are large filtration units or heavy duty vacuums, usually powered by 3 phase electric, that contain large volumes of dust and that also benefit from "reverse air pulsation" (a process where a "pulse" is generated through the filtration system to remove the dust more effectively from heavy duty filters and into the dust container).

To further increase a vacuum or filtration unit's collection capacity, a "Pre-separator" maybe connected. This unit is particularly popular with specialist asbestos contractors to avoid handling of material during the removal processes.



The 202DSL P Longopac® bagging system vacuum



The TS750PN 3-phase vacuum

What is the definition of an H-type Vacuum?

There are three main types of filters, L, M and H (low, medium and high). A vacuum must be fitted with an L or M type filter in order to correctly function, but can also be fitted with an additional H grade filter for collecting very fine particle dust and containing asbestos. **A vacuum fitted with an H filter is by definition an H-type Vacuum.**

Dust class of Filter	Suitable for:	Max. penetration value
L	Removal of hazardous, dry, non-flammable dust with OEL* of greater than 1mg/m ³	1%
M	Removal of hazardous, dry, non-flammable dust with OEL* of greater than 0.1mg/m ³	0.1%
H	Removal of hazardous, dry, non-flammable dust, carcinogenic dust and asbestos with OEL* of greater than 0.1mg/m ³	0.005%

*OEL – Occupational exposure limit



The Preparation Group's industrial vacuums can all be H-type Vacuums when they are fitted with the correct filter.

How do you know your selected dust extraction unit has the correct filter fitted?

Vacuums fitted with an H grade filter should have an 'H' sticker on them. To double check that one is fitted, take the head off the vacuum to confirm that there are two filters inside (one will be an H filter).



The recognised sticker to denote that it is an 'H-type'

Some contractors don't consider the filter and rely on the manufacturer's guidance; however, in many construction projects clarifying the filter grade capacity and the level of filtration in comparison with the intended process and the level or type of dust produced by the process is paramount e.g. L grade filters are only suitable for containment of sand shed particles and the simplest applications.

Finally..

Ultimately the dust extraction unit selected must match the operational output of your chosen tools or equipment. All too often dust contamination is created due to the incorrect selection of extraction equipment; lack of understanding of the motor/suction power and filtration capabilities and an ineffective dust 'bin'/bagging system.