Capture Efficiency of the Alsident® System extraction arms

To ensure that the planned/necessary air volume is extracted, it is recommended to ask for a test report from the installer proving the actual air volume. If the installation includes several extraction arms, you must check with the installer that the right amount of air is available on the number of extraction arms in concurrent use, as planned with the installer.

By following three simple rules you can achieve the best possible efficiency:

1. **Position the hood correctly in relation to the pollution source**
2. **Choose the right hood for the specific type of pollution**
3. **Position the hood as close to the pollution source as possible**

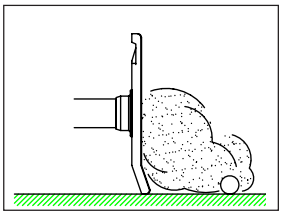
1. Positioning of the hood

The various positions of a hood can be arranged in three groups ways: the vertical (a), the angled (b) and the horizontal (c) position of the opening (see ill.)

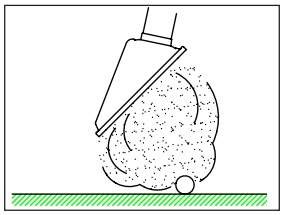
Many users position the opening horizontally which is the less efficient position. It is important to consider the optimal position of the hood before the hood is chosen, because many types of hoods are suitable in various positions.

The dispersion characteristic of the pollution is essential for postitioning of the hood. There are many types of pollution with various dispersion characteristics such as swirling dust, hot steam, soldering fume,heavy and light gasses.

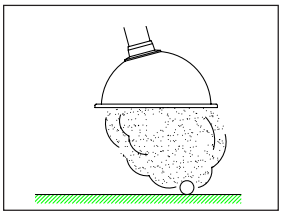
The vertical and the angled positions are in general more efficient than the horizontal position as they both – especially the vertical position – obtain a better capture zone because of the horizontal surface (Coanda-effect). The horizontal position normally less efficient. You will find more information in our test report Capture efficiency which can be downloaded from www.alsident.com under Technical Support.



(a) Vertical position



(b) Angled position



(c) Horizontal position

Example 1: Heavy gas
Heavy gas quietly evaporating will lie on a flat surface/table and disperse over it. In this case, the optimal position is a vertical position of the hood on or close to the table.

Example 2: Warm vapour
However, a warm vapour rises upwards with some velocity. In this example an angled position of the opening above and possibly slightly behind the pollution source is preferable.

Both examples lead to the choice of two different types of hood.

2. Choice of hood

The individual types of hood are suitable for one, often two of the three options. Generally, we recommend the dome hoods as they are well suitable in the angled or horizontal position, whereas the flat screen is better for a vertical or an angled position. Due to the design, the square hood can be placed naturally in all three positions, but obtains the highest efficiency at the vertical and the angled position.

Example 1 (heavy gas) – continued:
Several hoods are suitable for the position with vertical opening. The precise number of these hoods depends on the system (50, 63, 75 or 100). The flat screen is available in all four systems and is designed for a vertical opening and a position on or near to a horizontal surface (table). In this position the flat screen hood creates a draught across the table directing the heavy gas towards the hood.

Example 2 (warm vapour) – continued:
Several hoods are suitable for the angled position of the opening; e.g. the flat screen hood; but with this combination of position and pollution, a dome hood could also be a good choice. The size of the dome hood depends on the size of the pollution source.

3. Distances and cross-flows

The capture efficiency is also influenced by the distance to the pollution source and sorrounding air currents. This means that the closer the hood is placed to the pollution source, the higher efficiency.

It also means that it is advantageous to place the hood in the moving direction of the pollution. For example if a cross-flow in the room e.g. cold air from a window over the table leads the pollution in a certain direction, you place the hood in order to take advantage of the direction and the speed of the pollution (see ill.).