

# High Containment Screens For Downflow Booths



# High Containment Screens

Bringing a new dimension to containment with the HCS range of screens including the all new 4D High Containment Screen. Patented technology unique to Howorth\*.



## High Containment Screens

Howorth's High Containment Screens (HCS) are a simple but effective way of boosting the containment capabilities of any downflow booth. With our new range of screens, Howorth is now able to offer previously unattainable levels of operator protection.

## Principles of a High Containment Screen

Downflow booths are designed to protect the operator from dust rising into the breathing zone. The High Containment Screen (HCS) is fitted into the booth and forms an actual barrier between the operator and the dust source, keeping all dust laden air close to the exhaust grilles of the booth.

## Key Benefits

- Available in a variety of sizes, materials and with optional extras
- Ideal containment solution for a wide range of processes
- Independent testing of Howorth's 4D High Containment Screen has confirmed that OELs as low as  $0.5\mu\text{g}/\text{m}^3$  can be achieved

- Retrofitting capabilities for any downflow booth
- Enhanced operator comfort

## Screen Options

Howorth has developed the concept of High Containment Screens to ensure optimum containment levels and full flexibility of options. As a company that prides itself in being at the forefront of technology, Howorth continually strives to deliver containment solutions which satisfy your ongoing needs:

- 2D screen offering side to side movement
- 3D screen offering side to side, front to back and controlled rotation
- 4D screen offering side to side, front to back, controlled rotation and up and down movement
- 4DM screen using an articulated arm, ideal for booths with low ceiling heights and where gantry type fittings are inhibited

## Optional Extras

- Glove Ports available in various sizes and materials - C/W sleeves and cuffed gloves in Hypalon, Neoprene or Natural Rubber. (Others available on request.)



- Detachable tool shelf
- Various construction material options

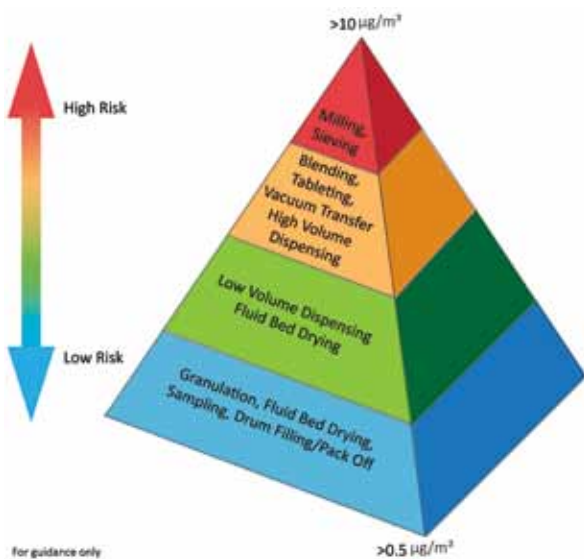
#### 4D High Containment Screen

Howorth's new 4D HCS is our most flexible screen yet and is an ATEX compliant component suitable for installation in any Zone 1/21 IIGD T4 IP65.

Developed in collaboration with existing booth operators, the 4D HCS offers unparalleled levels of operator flexibility, making it the ideal solution for a wide range of processes.

#### Operator Exposure Levels

The pyramid below illustrates the typical processes performed within a downflow booth and the level of exposure risk associated to each activity.



Independent testing of Howorth's 4D High Containment Screen has confirmed that OELs as low as 0.5µg/m<sup>3</sup> can be achieved when operated in conjunction with agreed SOPs. Processes considered to have a higher risk of exposure also benefit from a considerable reduction in OELs.

#### Retrofits and Upgrades

The benefits of our High Containment Screens are not just limited to customers purchasing new booths. Our latest range of screens have been developed specifically to allow them to be fitted within existing booth facilities.

Whether your existing booth is a Howorth unit or supplied from another manufacturer, we are able to offer a complete turnkey retrofit or upgrade service including:

- Site Survey
- Design and Manufacture
- Installation and Commissioning
- Site Acceptance Testing and Validation

#### Ergonomic Benefits

Howorth's High Containment Screens have been designed to enhance the comfort of operators. The screen defines the range of movement and helps to prevent bad practices which may impact on an operators posture.

The reduction in OELs also means that, for operations where an air suit or isolator were previously the only option, a downflow booth combined with a Howorth High Containment Screen is now a viable solution.

### Computational Fluid Dynamics (CFD)

CFD was used extensively in the development of Howorth's 4D High Containment Screen and is an integral part of the product development process.

Computational Fluid Dynamics (CFD), also known as flow visualisation, is a type of computer-aided engineering program that uses numerical methods and algorithms to solve and analyse complex fluid flow problems.

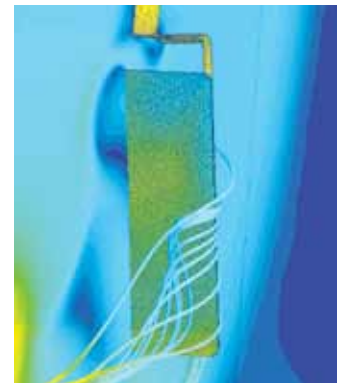
One of the key advantages of CFD is that it enables a variety of possible design solutions to be quickly assessed. The results of which can be visually studied, hence the term flow visualisation.

### Ergonomic Modeling

We offer a full prototyping service, giving our clients the assurance of seeing and working with a full-size mock-up for operational ergonomic assessment prior to the final product being manufactured. This proves invaluable when 'new' machinery has to sit alongside 'old' equipment to create a new production line or enhance levels of safety for compliance reasons.

The 4D High Containment Screen is available for demonstration or testing in our research facility at our UK headquarters.

Contact Howorth today to arrange your no obligation site survey or demonstration.



\* US/European Patents Pending

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