

Downflow Booth Installation for Leading Cosmetics' Company is a Real Beauty

Hosokawa Micron Ltd faced considerable challenges when designing two new downflow booths for the world's leading cosmetics' company, due to space limitations in the existing facility and build restrictions cause by structural steelwork, at the Paris site.



The scope of supply was for one booth suitable for the handling of powders and another, smaller booth suitable for handling solvents.

It was crucial to the customer that all designs focused particularly on the protection of operational personnel from harmful dusts and fumes and also that products were protected from risk of contamination. In response the booths are designed to offer high levels of operator protection from potentially hazardous dusts and fumes and potential product contamination.

Before commencement of the project a full risk analysis was undertaken which examined all potential risks from the toxicity and flammability of the materials handled and dust exposure limits to the compatibility of materials handled and the explosion risks. Standard operating procedures and the number of people operating within the booths and production areas were also considered in order to ensure the optimum booth design and configuration. Hosokawa Micron's use of computational flow dynamic software allows design engineers to see, right at early design concept stage, how airflows can be affected by placement of objects or people and how they can conflict with other directional airflows.

Said Carl Emsley, Sales Manager, Hosokawa Micron Ltd, 'In order to future proof and deliver flexibility of operation the booths were designed to accommodate a range of tasks dispensary and sampling tasks plus manual and automated materials handling.

Our designs and the finished facility are sympathetic to these demands, offering easy access, well planned and flexible work zones and integrated equipment positioning. The ergonomic design of the booths is enhanced with cooling packages for workplace temperature management to create a more user friendly work environment, ECM filter monitoring, high efficiency fans and LED lighting plus recessed housing for ease of storage and accessibility of tools. The placement of the solvent handling booth also allows for a space saving mezzanine floor above.'

Powder Handling Booth

Hosokawa Micron supplied an 8m wide, recirculation downflow booth, which delivers a conditioned downflow of air from the booth's ceiling inlet plenum pushing any dust downwards and away from the operator's breathing zone. The air is extracted from the booth via low level exhaust grills and through a series of filters prior to recirculation into the booth's working area. Safe change filters accessed from the technical zone at the rear of the booth eliminate exposure of operatives to airborne particulates.

Solvent Handling Booth

The single pass booth operates a vertical airflow, pushing dusts and vapours downwards and away from the operator's breathing zone with air discharged through a fume scrubber to atmosphere ensuring that solvent fume laden air will not be recirculated back into the booth and minimising the risk of explosion associated with solvent fumes.

Hosokawa Micron Ltd engineers worked closely with the customer to establish the optimum system design to ensure the most ergonomic solution capable of delivering operator protection across both booths and the facility. Operations Manager, Mr. Raul, has expressed his satisfaction with both quality and performance of the Hosokawa products.

'Our engineers have worked closely with the customer, listening and responding to the customers' wishes to create an integrated, ergonomic design solution that improves the working environment for personnel and meets the demand for an integrated facility.' comments Carl Emsley, Hosokawa Micron Ltd.

