



## Case Study

# Innovative Solutions for Highly Potent Material Dispensing

How Howorth engineers overcame containment challenges, ATEX compliance and ergonomic considerations to deliver a cutting-edge dispensing Isolator.

## Challenge

The challenge revolved around the dispensing of highly potent materials in pharmaceutical manufacturing, requiring the use of a containment isolator to ensure the correct level of operator and environmental protection.

The complexity escalated with the need for not only a high level of containment but also precision in dispensing due to the materials' high potency.

Adding to this challenge was the requirement to design the isolator for compliance with ATEX Zone 1 classification, all within a confined space, necessitating ergonomic operations for multiple operators of varying heights and physiques.

## Solution

Howorth Engineers, after meticulous design and mock-up reviews, delivered a comprehensive solution.

This included:

- A Multi-Chamber Isolator with distinct compartments like the Pass Box, Loading Chamber, and Dispensing Chamber.
- High Accuracy Weighing Equipment with a secondary display for improved operational control during dispensing.
- An independent weigh scale isolation frame, connecting to a Split Butterfly Valve through a flexible sleeve, ensured precise weigh accuracy.
- The addition of an external raise/lower system, operating independently of the frame assembly, facilitated the docking and undocking of receiving containers.
- An operator platform with raise/lower capabilities, featuring a hinged section for easy container introduction and removal, addressed ergonomic challenges in the space-constrained facility.

## Outcome

The outcome was a sophisticated dispensing isolator that met the stringent requirements.

Howorth Engineers, drawing on their expertise and experience, successfully provided all the necessary functionalities.

The Multi-Chamber Isolator, High Accuracy Weighing Equipment, independent weigh scale isolation frame, and the external raise/lower system collectively delivered a high-quality solution.

The operator platform not only ensured ergonomic operations but also featured innovative design elements to navigate the challenges posed by space constraints.

In the end, Howorth Engineers delivered a complex and high-quality solution tailored to the unique demands of dispensing highly potent materials in pharmaceutical manufacturing.