

CASE STUDY

Manufacturing

Optimized Paint Booth for Roll-On Epoxy Application Line

Sector: Industrial Manufacturing

Project Overview

A manufacturer required a controlled enclosure to support their manufacturing process specifically for rolling epoxy coatings onto metal components as part of an assembly line operation. Unlike traditional spray applications, the roll-on method significantly changes airflow requirements, and they needed a solution precisely engineered to their process rather than a standard spray booth configuration.

The Challenge

- Epoxy is applied by rolling, not spraying and standard spray booth sizing would over-engineer the system
- Proper VOC ventilation required despite reduced airborne particulate generation
- Controlled airflow across the work surface needed to maintain safe conditions
- Integration into a flexible, linear manufacturing space required

The Solution

Duroair designed a 10'H x 20'W x 50'L retractable DuroRoom™ enclosure, paired with a 13,500 CFM exhaust system specifically sized for roll-on epoxy application. Rather than defaulting to spray booth CFM calculations, Duroair's engineering team right-sized the airflow to match the actual contaminant load, delivering a cost-effective, energy-efficient solution. A future upgrade path to 25,000 CFM was also included should Fulcrum transition to spray application.

System Specifications

Enclosure	10'H x 20'W x 50'L DuroRoom™ Retractable
Exhaust System	13,500 CFM sized for roll-on application
Design	Retractable system integrates into linear assembly workflow
Future Upgrade	25,000 CFM AHU recommended if spray application added
Engineering Basis	Airflow calculated for rolling application, not spray

The Result

- ✓ **Right-sized airflow** precisely matched to roll-on epoxy process requirements
- ✓ **Safe VOC ventilation** maintained throughout all production operations
- ✓ **Energy efficiency** improved through avoidance of oversizing
- ✓ **Assembly line integration** seamless enclosure aligned with workflow footprint
- ✓ **Future flexibility** upgrade path to spray application included in design

Why This Project Matters

This installation demonstrates Duroair's ability to:

- Engineer airflow based on actual coating method rather than defaulting to standard spray booth sizing
- Differentiate technically between spray and roll-on application requirements
- Prevent over-engineering and unnecessary capital expenditure for clients
- Deliver retractable solutions that integrate into flexible manufacturing environments

