



Contamination Control Floor Mats in the Newly Built Aerospace Cleanroom at Space Park Leicester



INTRODUCTION

Space Park Leicester is a suite of multidisciplinary laboratories and manufacturing facilities. This unique community has the capability to undertake “end-to-end” space projects, from concept, design, development, and laboratory testing, right through to flight support and in-flight operations.

John Holt, Research Engineer, and Cleanroom Manager was looking for a contamination control solution at floor level for their new purpose-built, ISO 6 hybrid cleanroom.



CHALLENGE

At Space Park Leicester it is imperative that they maintain particle cleanliness to ISO 6 standards, or better, within their cleanroom and keep unwanted particulates out. For this multi-use cleanroom, there is a cross-section anteroom where people and items transfer from a ‘dirtier’ environment (ISO 8) to a ‘cleaner’ environment (ISO 6).

Previously, they had encountered problems with unauthorized personnel stepping onto the ‘clean’ area that had not taken the correct procedures to enter the area. Historically, cleanrooms at Leicester University had implemented the older style (gel type) Dycem mats, which served their needs for well over 22 years.

However, modern needs at Space Park necessitated a mat that would allow heavier wheeled traffic for their payload entry facility prior to the main cleanroom (e.g., for pallet trucks and scissor lift trollies). They looked at the possibility of peel-off mats but decided that they would be too small, would cause problems with wheeled traffic, Electrostatic Discharge (ESD) issues, and contribute to contamination when the mat is changed and the top layer is ‘peeled’ off.





SOLUTION

Good cleanroom management is critical to protecting a product and as the first line of defence, they chose our newest Dycem products. Dycem provided a custom-made flooring solution, transitioning from our WorkZone product in Charcoal to our CleanZone product in Red. This change in colour visually alerts personnel of the change between the 'dirtier' area and the 'clean area'.

Our WorkZone product was specifically designed to withstand heavier wheeled traffic, up to 90kg/cm², making it an ideal solution for the payload entry facility (PEF) into the main room. Dycem was deployed in the anteroom (prior to the main cleanroom complex) to reduce particulates entering the cleanroom



RESULTS

The Dycem system works because it is deployed in the anteroom where people and items transition from a "dirty" environment to a "cleaner" one. Dycem removes debris at the beginning of the system, reducing the risk that smaller particles become aerosolized as people and items move through an increasingly clean system chain.

Using Dycem, in collaboration with other cleanroom management practices protects the cleanroom at Space Park Leicester from unwanted particulates entering and avoids contaminating products.



ABOUT SPACE PARK LEICESTER

Built upon the heritage and space-science excellence of the University of Leicester, Space Park Leicester is a collaborative community of industry, academics, and students working together to drive growth in space and space-enabled sectors.



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“Dycem staff are efficient, knowledgeable and understand the needs of the customer.”

—John Holt, Research Engineer
Space Park Leicester

