



**ANILA COMISARIO**

**QUALITY ASSURANCE DEPARTMENT**

**REQUEST FOR ACTION  
ANALYSIS REPORT**

**REQUEST NUMBER** : NA

**DATE OF ISSUE** : July 20, 2023

**REQUESTING UNIT** : Production Department / MCCI Top Management

**RE** : Dycem Contamination Control Flooring Mat

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**OBJECTIVE**

- To validate if the Dycem Contamination Control Flooring can minimize foot and wheel borne infection from entering a controlled or particular area
- To determine the performance and effectivity of Dycem Contamination Control Flooring if microbial counts are reduced and its long-lasting outcome

**DEFINITION**

Dycem CleanZone is a high performance, antimicrobial mat or flooring suitable for pedestrian flows and light wheeled traffic. Scientifically tested, it is proven to be the most effective way of controlling all forms of foot, wheel and airborne contamination from entering critical areas

Dycem Contamination Control Flooring is manufactured from a proprietary blend of specially formulated polymeric compounds. Dycem Contamination Control Flooring solutions are manufactured with Biomaster (a silver antimicrobial) as an integral ingredient, providing effective and lasting antimicrobial protection. Biomaster has been tested for MRSA, E. coli, Salmonella, Listeria, Campylobacter plus up to 50 other micro-organisms to inhibit growth by 99.99%. The properties of the Dycem materials and the layer process technology used, produce a material with very optically smooth and flexible surface. It is printed substrate with adhesive backing and standard print red text and graphic with white background. Bespoke artwork and sizing available. CleanZone is available in range of attractive designs and will continue to look good between cleaning. It has the flexibility to be installed in a variety of custom sized and shaped areas and can be combined with a number of different edging options.

## WHERE TO USE CLEANZONE

- All pedestrian entrances to critical areas to prevent ingress of contamination
- All pedestrian exits to prevent contamination leaving the critical area
- Inside airlocks, gowning rooms, and air showers to control and retain contamination
- In hallways to prevent cross contamination
- Inside the critical area adjacent to critical products and processes

## KEY FEATURES

- Can be installed as a standard mat or fully customized for areas that are complex in shape and construction
- Ideal for inlaid or wall-to-wall flooring installations
- Available in range of colors for color-coding critical locations and providing clear demarcation between clean and dirty areas
- Product life expectancy of 3-5 years (if maintained correctly as per manufacturer's instructions)
- Protected by a standard 12-month warranty from date of installation.

## KEY BENEFITS

- Reduced floor (up to 99.99%) and air particulate (up to 75%) counts in controlled or critical areas
- Long-lasting, cost-effective solution compared with peel-off mats and other alternatives
- Reduced microbial counts due to Biomaster, a high performance anti-microbial additive in all Dycem products
- Easy to clean, maintain and incorporate into existing Standard Operating Procedures (SOP's). It is recommended that the product be wiped with an approved cleaning agent.

## ENVIRONMENT

Dycem is a world leading manufacturer and supplier of contamination control floor coverings. Flooring products are solely manufactured in the UK at Bristol site. Environmental issues are of fundamental importance to a successful and responsible business strategy and strive to develop new and existing products with sustainability in mind, never compromising on value of performance.

## RECYCLING

- Dycem products are 100% recyclable at no charge at the end of their working life and can be recycled into less critical applications
- All Dycem products are washable & re-usable systems. This means less wastage and a reduced carbon footprint.

## HEALTH & SAFETY

Dycem polymeric flooring is widely used in pharmaceutical, biomedical, automotive, food and healthcare industries. Dycem uses high grade raw materials to produce its floor coverings to standards that exceed all prescribed health and safety requirements.

- Safe raw materials: no heavy metals, no solvent-based inks, no phthalates and components rated as carcinogenic, no formaldehydes, no PCP
- Non-toxic, no silicon, latex or DOP outgassing
- There are no known hazardous components above regulatory thresholds in this product
- Dycem materials are compliant with both REACH and the state of California Proposition 65 legislation

## DYCEM SOLUTIONS IN THE FOOD INDUSTRY

Dycem Contamination Control solutions support the strict microbial needs of the Food Industry, whilst offering a flexible disinfection routine to benefit contamination control in food manufacturing environments.

Sheered with Biomaster, which is added to solutions during manufacture and does not weaken dependent on use. Providing a long-lasting effectiveness against microbial growth

Dycem Mats are customizable in both size and color, so you can maximize your protection whilst also assigning a color to each of your areas that need help with control.

Our solutions are a long lasting, cost-effective alternative to peel-off tacky mats. Allowing you to clean contamination off the surface, rather than tearing away plastic sheets and in the process, throwing contamination back into the atmosphere of the environment you are trying to monitor.

Dycem complies with national and international legislation relating to the protection of human health and the environment from the use of chemicals. We strictly monitor our supply chain to ensure chemicals on the list of substances of very high concern are not present in our products.

Using Dycem's naturally tacky mats for decontamination, is the must have solution for controlling contaminants. Giving you a proven, specialist way of contaminants being kept under control.

Offering world-leading and proven contamination control solution for the demanding food industry and ensuring up to 99.99% contamination control in your food manufacturing environments.

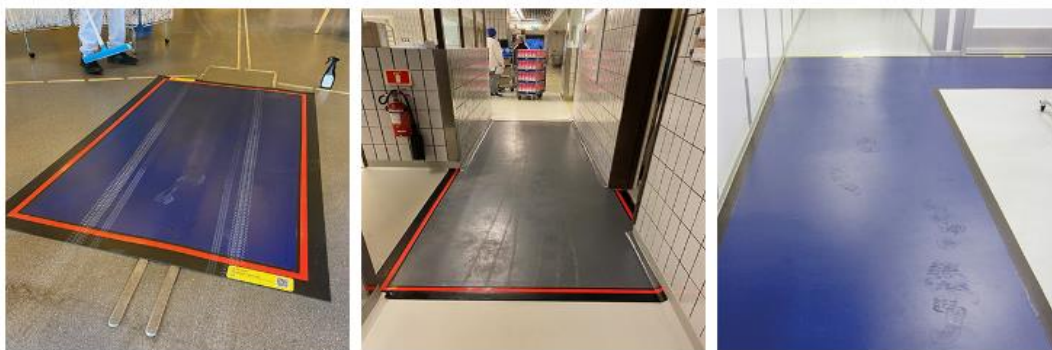
#### RECOMMENDED AREAS TO MAKE THE MOST OUT OF YOUR DYCEM CONTAMINATION CONTROL FLOOR MAT

- Pedestrian Hygiene Stations
- Finished Goods Storage
- Primary Packaging/Assembly
- Communal Entry/Exits to Production
- Hi-Care Zone Entries
- Kitchens/Catering Facilities

#### SOME FOOD COMPANIES WHO USE DYCEM SOLUTIONS



#### CASE STUDY



#### A MAJOR FOOD PACKAGING COMPANY

The focus of the major food company which serves in 62 countries, with 145 manufacturing facilities, 56 research laboratories and approximately 25,000 employees. is for food packaging solutions, bubble wrap brand cushioning and cleaning/hygiene solutions. Dycem was tasked to help one of their manufacturing sites in reducing the amount of foot and wheel-borne contamination from entering critical production areas.

Therefore Dycem CZ01 CleanZone was installed in changing areas and CZ02 WorkZone in their airlock areas. The results have been promising, with a planned expansion of Dycem at other sites in the near future.

## METHODOLOGY

1. Swabbing the outsole part of white boots of personnels from 3 different areas: Kitchen, Preparation and Packaging Area after frisking of assigned Security personnel before passing thru Dycem Contamination Control flooring
2. Swabbing the outsole part of the white boots of 3 personnels form 3 different areas: Kitchen, Preparation and Packaging Area after passing thru Dycem Contamination Control flooring entering the Gowning Area
3. Swabbing the steer wheels of manual pallet jacklift before passing thru Dycem Contamination Control flooring
4. Swabbing the steer wheels of manual pallet jacklift after passing thru Dycem Contamination Control flooring
5. Swabbing the load wheels of push cart, left side before passing thru Dycem Contamination Control flooring
6. Swabbing the load wheels of push cart after passing thru Dycem Contamination Control flooring
7. Swabbing the Dycem Cleanzone Contamination Control flooring after wiping by an approved cleaning agent (2 mL of Liquid Hand soap diluted in 250 mL water) with the use of Squeegee mop
8. Swabbing the Dycem Cleanzone Contamination Control flooring after 1 hour since wiping activity.
9. Swabbing the Dycem Cleanzone Contamination Control flooring after 3 hours since wiping activity

## RESULTS OF ANALYSIS

Table 1. White boots swab test before and after passing through Dycem Contamination Control Flooring (CCF)

Parameters	Personnel before passing thru DYCEM CCF			Personnel after passing thru DYCEM CCF			% KILL RATE		
	KITCHEN	PACKAGING	PREPARATION	KITCHEN	PACKAGING	PREPARATION	KITCHEN	PACKAGING	PREPARATION
Aerobic Plate Count (CFU/g)	14,090	11,970	15,330	3,150	4,210	4,570	77.64	64.83	70.19
Coliform (CFU/g)	10,000	1,870	10,030	380	110	420	96.20	94.11	95.81
<i>Escherichia coli</i> (CFU/g)	260	140	20	<10	<10	<10	100	100	100
Yeast (CFU/g)	80	60	70	<10	<10	<10	100	100	100
Molds (CFU/g)	31,500	2,630	1,050	740	350	270	97.65	86.69	74.29

Table 2. Pallet Jack Lift Steer Wheel swab test before and after passing through Dycem Contamination Control Flooring (CCF)

Parameters	Steer Wheel - Pallet Jack Lift		
	Before passing thru Dycem CCF	After passing thru Dycem CCF	% KILL RATE
Aerobic Plate Count (CFU/g)	14,220	4,520	68.21
Coliform (CFU/g)	3,490	170	95.13
<i>Escherichia coli</i> (CFU/g)	290	<10	100
Yeast (CFU/g)	70	<10	100
Molds (CFU/g)	2,590	230	91.12

Table 3. Push Cart Load Wheel swab test before and after passing through Dycem Contamination Control Flooring (CCF)

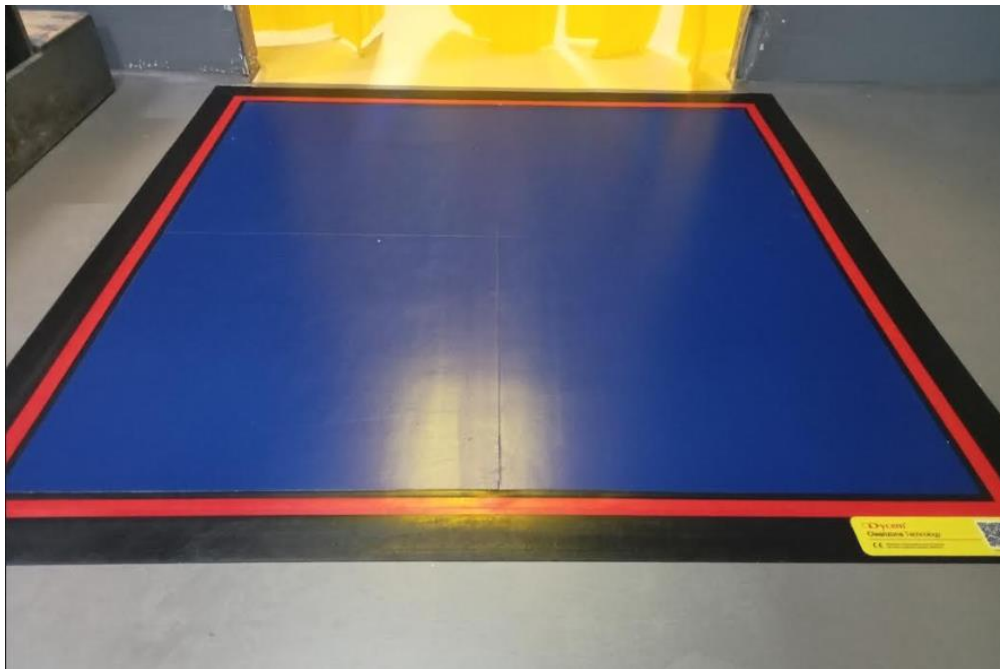
Parameters	Load Wheel - Push Cart		
	Before passing thru Dycem CCF	After passing thru Dycem CCF	% KILL RATE
Aerobic Plate Count (CFU/g)	13,800	4,760	65.51
Coliform (CFU/g)	3,840	240	93.75
<i>Escherichia coli</i> (CFU/g)	190	<10	100
Yeast (CFU/g)	40	<10	100
Molds (CFU/g)	3,080	290	90.58

Table 4. Dycem Contamination Control Flooring Swab test with application of cleaning agent (2mL of Liquid Hand soap diluted in 250 mL water) and wiped using Squeegee mop and after 1 hour and 3 hours of all forms of foot rotation

Parameters	Dycem Contamination Control Flooring		
	w/ application of cleaning agent	After 1 HOUR	After 3 HOURS
Aerobic Plate Count (CFU/g)	640	1,580	4,210
Coliform (CFU/g)	<10	<10	<10
<i>Escherichia coli</i> (CFU/g)	<10	<10	<10
Yeast (CFU/g)	<10	<10	<10
Molds (CFU/g)	10	100	340

#### DOCUMENTATION

Image 1. Dycem Contamination Control Flooring after wiping with a cleaning agent (2 mL of Liquid Hand Soap diluted in 250 mL of water) with the use of Squeegee mop



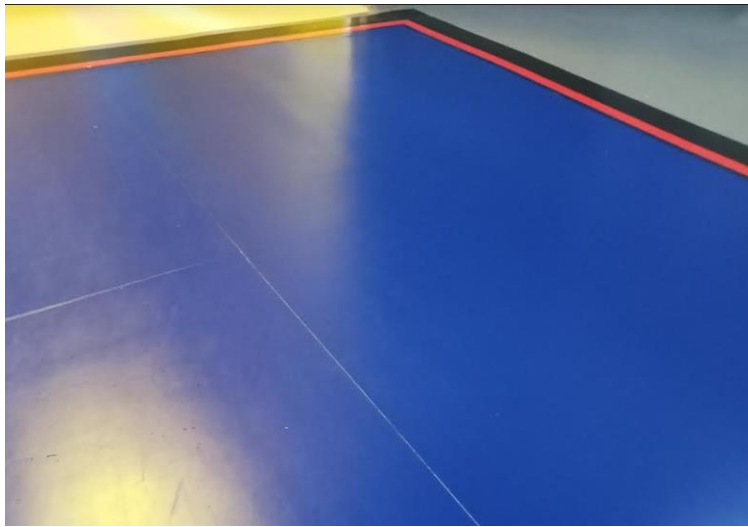


Image 2. Dycem Contamination Control Flooring after 1 hour since last wiped by a cleaning agent (2 mL of Liquid Hand Soap diluted in 250 mL of water) with the use of Squeegee mop



Image 3. Dycem Contamination Control after 3 hours since last wiped by a cleaning agent (2 mL of Liquid Hand Soap diluted in 250 mL of water) with the use of Squeegee mop



Image 4. Scratch noted in the Dycem Contamination Control Flooring due to rotation of jack lifts



### **DISCUSSIONS**

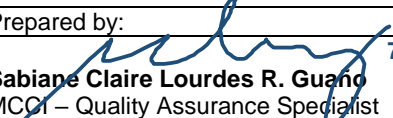

Dycem Contamination Control Flooring was installed before entering MCCI Gowning Area. Samples were gathered and collected to be able to verify if the installed contamination control device is inhibiting particles and microbes from getting into critical areas. Based on the results of analysis, Dycem Contamination Control Flooring reduced floor microbial counts as it can eliminate foot and wheel contamination referring to percentage Kill rate.

### **CONCLUSIONS & RECOMMENDATIONS**

There is a significant reduction of microbial count with the use of Dycem Contamination Control Flooring. Therefore, Dycem Contamination Control Flooring passed QA evaluation as it is effective in trapping foot and lifting wheels carrying pathogens that can contaminate food. The proposed cleaning of foot mat using diluted 2 mL of Liquid Hand Soap in 250 mL of water with the use of Squeegee mop every hour is efficient on the basis of conducted swab test. It is strongly recommended for replacement of foot mat which is currently being used as biosecurity that helps prevent the potential spread of disease.

### **REFERENCE**

- <https://dycem.com/>
- Dycem Cleanzone Contamination Control Flooring Technical Data Sheet
- Dycem Contamination Control Flooring Microbial Environments Brochure
- MCCI Microbiological Data Test Report with special instruction of Swabbing of installed Dycem Cleanzone Contamination Control Flooring

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