In association with:

Innovative Solutions for Infection Control

Soft Play Centre Assessment for Viral and Pathogenic Transport Between Users

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[CONFIDENTIAL]

1. Abstract

A soft play centre was used as a case study to analyse bacterial contamination pre and post decontamination using a handheld airless sprayer and Hybrisans advanced non-alcohol sanitisers. The presence of bacteria and the way that cross-contamination is achieved was considered as a reasonable model for the transport of pathogenic organisms (including Coronavirus) in a system. Hybrisan Surface + Hands Sanitiser was successful in eradicating bacteria and yeast on the service buses tested and a decontamination regime is recommended.

2. Introduction

The client is a soft play centre who are keen to ensure that their children and parents are suitably protected against the potential risk of contracting Coronavirus from within the confines of a soft play area. We at Hybrisan were asked to implement a testing regime to assess the bacterial cleanliness of the soft play equipment between sessions. Testing for virus on surfaces is complex and outside the scope of this trial. However, bacterial presence can be considered as a strong indicator of how pathogens can be transmitted via cross-contamination between users.

- An area of the soft play centre was selected as a test case for assessment

Our approach was to determine key high contact touch points and to assess the bacterial load present at these points pre and post decontamination using Hybrisans polymeric Biocide and a hand held airless sprayer as a delivery mechanism.

3. Aims

The aims of this assessment were to:

- Determine high contact regions between children and the internal superstructure of the soft play equipment
- Use surface dip-slides to assess bacterial load at the high contact points Pre Decontamination.
- Use airless sprayers to treat all high contact point with a view to decontamination and to repeat surface dip-slides to recover any remaining bacterial load.
- Incubate dip-slides and assess variation in bacterial contamination Pre and Post decontamination.
- Evaluate the data collected from the slides to determine levels of decontamination.

4. Methodology

In this case bacteria was used as an indicator for pathogenic cross-contamination as viral detection on a surface was beyond the scope of the analysis.

The procedure used for data collection and analysis was conducted as follows

1. Visual assessment of the soft play equipment to indicate high touch points. Touch points presented in appendix.
2. Surface dip-slides used to recover bacterial load pre treatment
3. A handheld airless sprayer was used to dispense Hybrisan's polymeric biocidal surface treatment.
4. Surface dip-slides used to recover any remaining bacterial load post treatment.

Dip-slides used: BTM2 Surface Dipslides – Nutrient TTC + Malt Extract for the recovery of bacteria, yeasts, moulds and fungi.

All dip-slides were then removed from the test site and incubated in the laboratory at Hybrisan's facility. The slides were then incubated at 30 degrees C for 120 hours to facilitate bacteria, yeast and mould growth.

5. Results and Discussion

5.1. Soft Play Equipment

Sample Point	**Bacterial Load (CFU/cm²)***		**Yeast Load (CFU/cm²)**		**Mould Load**	
	Pre	**Post**	**Pre**	**Post**	**Pre**	**Post**
1	2	0.4	0.4	0.4	None	None
2	20	0.4	12	0.4	None	None
3	12	2	12	2	None	None
4	12	<0.1[1]	10	<0.1	None	None
5	2.5	0.4	2.5	0.4	None	None
6	40	<0.1	12	<0.1	None	None

*Colony Forming Units/cm²

[1] Limit of sensitivity – where there was no growth on the dipslide the minimum reportable CFU/cm² was 0.1 therefore these were reported as <0.1

Analysis of the data collated in the above table showed that:

- There was low bacteria and yeast load from sample point 1 and sample point 5.
- There were slightly higher levels of bacteria and yeast recovered from sample point 2, sample point 3 and sample point 4.
- There were high levels of bacteria and yeast recovered from sample point 6.

The soft play equipment was decontaminated with Hybrisan Surface + Hands through a handheld battery operated Graco airless sprayer.

There was significantly less bacteria and yeast recovered after decontamination. This indicated up to a 99.8% reduction.

6. Recommendations

6.1. General Recommendations

1. The soft play equipment should be cleaned regularly, this includes all porous and non-porous services to ensure there is no dirt, grime or dust settlement.

6.2. Decontamination Recommendations

1. The soft play equipment should be effectively decontaminated using a handheld airless sprayer. This can be conducted after each session using Hybrisan Surface + Hands.
2. Extra attention should be given to high contact areas throughout the day using a compatible product to ensure the residual protection is not deteriorated. This should be done regularly using either Hybrisan Surface + Hands to top up high touch areas with protection throughout the day.
3. The use of Hybrisan Hand + Surface Sanitiser should be encouraged for all users to ensure residual protection is not deteriorated by incompatible products such as alcohol sanitisers.

7. Conclusions

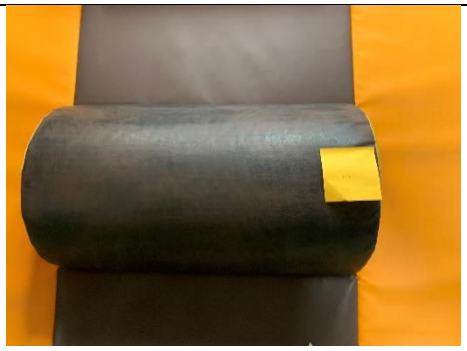
The soft play equipment exhibited bacteria contamination on pre-treated surfaces and showed significant reduction in contamination post treatment. However, the dip-slides used in this analysis have limited sensitivity for a complete understanding of the problem due to the low sensitivity in detection. It is expected with a more thorough analysis higher reductions could be reported. The handheld airless sprayer was suitable for rapid decontamination.

By using a complete range of products ongoing residual protection can be maintained without deterioration due to product incompatibility. The Hybrisan range of sanitisers ensure that protection is passed between all hands and surfaces offering ongoing protection against pathogenic organisms whilst its multi material compatibility ensures surfaces are not damaged or compromised.

8. Appendix 1 – Sample Areas

8.1. Soft Play Equipment

Sample Point	Picture
1	
2	
3	
4	

5	
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