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Report on the Bacteriological Testing of Microfibre Cloths and Mops Utilising the OTEX System

Wash Liquor:

The original test protocol called for wash liquor samples to be analysed.
The liquor test points on the two washing machines are sited on the drain outlets.
Due to the extremely poor site conditions with blocked and back-flowing drains at the commencement of the trial it was agreed that samples of the actual cloths and mops, both before and after laundering, would be removed, refrigerated and submitted for independent microbiological analysis.
To add confidence to this study wash liquor testing was performed under laboratory conditions in a washing machine containing 30 litres of water at ambient temperature.
The water was challenged with at least 10^8 cfu/ml of the target organisms C.dif, MRSA and A.niger. Samples were taken at 1 minute intervals, after 3 minutes there was no viable trace of any test organisms. The OTEX system at QE11 utilises ozone throughout the whole of the 47 minutes. programme.

Samples with No Contamination:

The samples of used microfibre utilities examined in this trial were not challenged. The levels of recovered targets, we believe, reflect the actual levels of contamination due to usage. It is true that on some occasions our tests indicated an absence of target organisms from one or more categories.

Test Protocol:

Diluent for plate counts:
Difco Universal Quenching Agent (DUQA)

Recovery:

A) Multiple 20 gram samples of microfibre utility were stomached for one minute in 180ml of DUQA.
B) Decimal serial dilutions down to 10^8 were prepared.
C) Aliquots of all dilutions were plated out and incubated as per Table 1. below.
D) 100ml DUQA was subjected to membrane filtration and was then examined using the incubation conditions detailed in Table 1. below.
E) Positive and negative controls were employed for all determinations. NCTC or ATCC strains were used at 10^1 and 10^4 levels of inoculation for positive controls.
F) Confirmation and identification strategies are summarised in Table 1.

Note: All protocols are based on UKAS approved methodology conducted under a BS17025 quality system.

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Table 1.

Target Organism	Culture Media	Incubation	I.D. Confirmation
MRSA	**BAIRD PARKER**	**48 HOURS 37°C AEROBIC**	**MORPHOLOGY PROBE**
MRSA	**BIOMERIEUX CHROMOGENIC AGAR**	**24 and 48 HOURS 37°C AEROBIC**	**CHROMOGENIC REACTION PROBE (DNA)**
C.difficile	**CYCLOSERINE AGAR**	**24 and 48 HOURS 35°C ANAEROBIC**	**MICROSCOPY BIOCHEMICAL PROFILE**
YEASTS MOLDS A. Niger	**R.B.C.A. ROSEBENGAL CHLORAMPHENICOL AGAR**	**5 DAYS 25°C**	**MICROSCOPY**

TEST RESULTS:

The test results showing 'after OTEX' and 'after drying' merely indicate that some of the microfibre samples were recovered straight after the wash process and others after washing and then tumble drying.
It is interesting to note that on page 18 of the report the first two results show no growth after the OTEX process but <2.5VSG after tumble drying.

OTEX WASH PROCESS:

Wash Temperature: Ambient
Wash Cycle: 47 minutes (22% less than Thermal Disinfection Cycle)
Detergent Dosage: 40ml (50% less than conventional Thermal Disinfection Cycle)
Ozone Delivery: Continuously throughout the wash cycle.

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