I&I LAUNDRY

Hygiene aspects in industrial and institutional laundry

Relevance:

The hygiene situation in institutions like elderly homes, children's homes or day care centers is frequently in the focus of the public because of increasing outbreaks of infections like Norovirus. As well infections with multiresistant germs are not only prevalent in the hospital environment itself but also in elderly homes or rehab clinics including a long-term care facility.
Textiles can transfer microorganisms from one person to another and are therefore a potential source of infections.
For institutional laundry this can be a challenge. The treatment and process control of hospital associated laundry (highly infected, infected, or eventually infected laundry) is regulated clearly, whereas the treatment of institutional laundry isn't.

Regulations:

DIN EN 14065: *Textiles – biocontamination control system: Risk analysis and biocontamination control system (RABC)*

Recommendations:

1 x per year Hygiene situation should be controlled by internal responsible persons and / or an external institut

- *Biomonitors assess the efficiency of specific washing processes*
- *Water analysis (Total counts, E. coli, Enterococcus sp, coliforms)*
- *Microbial load of the laundry (RODAC-plates) (3 x a year)*

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Biomonitors:

Biomonitors can be used for a quantitative monitoring of textile washing processes. The Robert Koch institute recommends the use of Staphylococcus aureus and Enterococcus faecium Biomonitors. Those two Bacteria belong to risk class 2 and are potentially dangerous for the user. Whereas the HyWa-Check Biomonitors Enterococcus faecium Cernelle (probiotic strain) and Staphylococcus arlettae are harmless risk class 1 members and deliver comparable results in I&I washing processes.

Internal control:

Washing processes can be revalidated and controlled with the HyWa-Check Biomonitors without serving as a biosafety risk for employees or without potentially contaminate the tested washing machine. This can bring a cost advantage and increase the safety in one.

Requirements:

Laundries in health care settings:

- *Microbial reduction of 99.999% (5 log10-reduction) assessed with the Biomonitors.*
- *Process water < 100 CFU/ml, E. coli/coliforms and Enterococcus sp. are not present in the process water*
- *Washed and dry textiles have microbial counts < 20 CFU/dm²*

Laundries in food areas:

- *Microbial reduction of 99.999% (5 log10-reduction) assessed with the Biomonitors.*
- *Process water < 100 CFU/ml, E. coli/coliforms and Enterococcus sp. are not present in the process water*
- *Washed and dry textiles have microbial counts < 50 CFU/dm²*

Hygiene-Package for Laundries:

Control of one washing process: Efficiency of the washing process (microbial reduction), microbial counts in the process water, microbial counts on washed and dried laundry	
Process monitoring of one washing process with Enterococcus faecium and Staphylococcus arlettae (Art. 503, Art. 504): *• 8 Biomonitors per test strain* *• Buffer solutions for the shipment back* *• Analysis of the HyWa-Check Biomonitors at Swissatest*	*600.– Euro / washing process*
Analysis of process water (250 ml sample): *• Total microbial counts (22° C, 36° C), E. coli, Enterococcus sp.*	*130.– Euro / water sample*
Hygiene control of washed and dried laundry: *• 10 contact plates* *• analysis of the contact plates*	*200.– Euro*
Test report	*–*

Total costs of Hygiene Package	***930.– Euro***
First instruction and training (ca. 3h)	*480.– Euro*

First Instruction:

A first instruction and training by Swissatest is recommended for a proper handling and test performance, when the first washing process is tested. Afterwards, the test can be done by the laundry personnel, and the biomonitors, contact plates and water samples can be sent to Swissatest for further analysis.

Consulting:

Swissatest can also provide support in implementing a Hygiene Concept based on a HACCP concept.

Publications:

Amberg, C., Faeh, D. and Frey, F (2010).
Novel Method to Assess the Sanitization Efficacy of Laundry Processes (HyWa-Check).
Poster Presentation AOCS Montreux 2010.

Amberg, C. (2011).
HyWa-Check – Novel Screening tool to assess the process hygiene of household washing cycles.
Presentation at IDC Conference in Düsseldorf, Mai 2011.

Amberg, C. (2011).
Hygiene performance of household washing machines – New protocols to assess process hygiene and biofilm removal.
Presentation at Sepawa Austria in Salzburg, Mai 2011.

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