

## Technical report

**Customer**

***BRENTARENO S.r.l.***

**Location**

ASOLO (TV), VIA E. FERMI 15

**Project:**

**EFFICACY TESTS OF  
SANITATION WITH  
OZONE**

**Data:**

8 Luglio 2016

**Autori:**

Laboratori Fratini S.r.l.

## PREMISE

On June 27, 2016 were conducted tests of felling of microbial loads with sanitizing system developed by Brentareno srl. The tests have seen the inoculum under controlled conditions in various tissue samples and recovery of bacteria from inoculated tissue, exposed and not exposed to the process of sanitizing ..

The tests were conducted at the headquarters Brentareno Via Enrico Fermi 15 in Asolo.

### Preparation of tests

Were first prepared in liquid medium suspension of bacterial strains selected based on the presence of normal human skin (*Staphylococcus*), common pathogens in the environment (*Pseudomonas*, *Candida*) and aerobic spore-forming bacteria (*Bacillus*). The selected strains and the related starting inocula are shown in the following table:

microorganism	Value charging inoculum
ATCC 6538 <i>Staphylococcus aureus</i>	10,0 x 10 <sup>8</sup> ufc/mL
ATCC 9027 <i>Pseudomonas aeruginosa</i>	7,1 x 10 <sup>8</sup> ufc/mL
ATCC 6633 <i>Bacillus subtilis</i>	6,3 x 10 <sup>7</sup> ufc/mL
ATCC 10231 <i>Candida albicans</i>	9,5 x 10 <sup>7</sup> ufc/mL

The inoculum values were determined in laboratory cultures at the same the time of inoculation on the tissues at Brentareno srl:

When determining the parameters have been researched whatever the specific bacteria that total bacterial count.

## PERFORMANCE OF TESTS

Once you set up these bacterial suspensions were inoculated in known volume on the samples supplied by the customer. As said the operation was carried out directly in Brentareno establishment.

The recovery of the surviving bacteria is then effected on the entire sample volume

### Sample 1: Cotton thin

SAMPLES	total microorganisms at 30 ° C	Candida albicans	Pseudomonas aeruginosa	Bacillus subtilis	Staphylococcus aureus	Unit of measure
Untreated samples	186 800 000	9 500 000	71000 000	6 300 000	100 000 000	cfu / sample
Samples after sanitization	460 000	200	620	360 000	20	cfu / sample

### Sample 2: Cotton thick

SAMPLES	total microorganisms at 30 ° C	Candida albicans	Pseudomonas aeruginosa	Bacillus subtilis	Staphylococcus aureus	Unit of measure
Untreated samples	186 800 000	9 500 000	71000 000	6 300 000	100 000 000	cfu / sample
Samples after sanitization	2 000 000	1 500 000	500 000	380 000	40	cfu / sample

### Sample 3: Sponge

SAMPLES	total microorganisms at 30 ° C	Candida albicans	Pseudomonas aeruginosa	Bacillus subtilis	Staphylococcus aureus	Unit of measure
Untreated samples	186 800 000	9 500 000	71000 000	6 300 000	100 000 000	cfu / sample
Samples after sanitization	360 000	1 200	160 000	340 000	< 20	cfu / sample

## KILLING OBTAINED LEVELS

	Percentage of reduction of the processed numerical%		
	thin cotton	thick cotton	sponge
Total microorganisms at 30 °	99,7	98,9	99,8
Candida albicans	99,9	76,2	99,9
Pseudomonas sp	99,9	99,3	99,8
Bacillus subtilis	96,2	96,0	96,4
Staphylococcus aureus	99,9	99,6	99,9

**OPINIONS AND CONSIDERATIONS**

The sanitizing procedure adopted by Brentareno srl. applied to the tests on fabric shows a very high efficiency, bringing the level of security at excellent levels.

In fede,

Dott. Luigi Fratini



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