To

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EXPERT OPINION

In accordance with your written request dated 03.07.1997 we have examined the following 5 surfaces with regard to their disinfectability:

1. FH – Compact Board 13mm F 62 FH
2. FH – Compact Board 13mm F 18 FH
3. P – Max Board 1mm 107 P
4. H – Max Board 1mm E 76 H
5. Polished cut edge of the compact board.

In addition to the usual OP tiles and PVC test pieces, stainless steel tiles were also checked as reference surfaces. The test surfaces were all cut to a size of 5 x 5 cm, and the cut edge to 5 x 1.3 cm.

1. Methodology

The test surfaces were rubbed with 70 % by volume of ethanol prior to starting the tests and dried under the sterile workbench. The surfaces were then contaminated with staphylococcus aureus and escherichia coli at a germ level of approximately 10^9 KBE/ml. To this end, 0.05 ml germ suspension
was applied to each, evenly distributed with sterile glass spatula and allowed to dry for 1 hour at room temperature. 0.2 ml each of the different disinfectants (see below) were applied and rubbed in with sterile glass hoes so that the edges of the dried germ suspension traces were also covered. Contaminated germ carriers treated with water instead of disinfectant (survival check) served as checks.
After a period of application of 1 hour the surviving test germs were reclaimed by shaking out the germ carriers in 10 ml disinhibitory shaking fluid (caseinpepton-sojapepton-bouillon) with an addition of 3.0 % tween 80, 0.3 % lecithin, 0.1 % histidin) with sterile glass balls in sterile Petri dishes. Decimal dilution series were generated from these shaking fluids and deposited on caseinpepton-sojapepton-agar slides.
The test was carried out in triplicate.
After 48 hours of breeding at 37 °C the grown colonies were counted.

The following disinfectants were used (specified in percent by volume):

a. Ethanol 70 %
b. Formalin 1 %
c. Formalin 5 %
d. P-Chlorine-m-Kreson 0.3 %
e. Chloramine T 1 %
f. Chloramine T 5 %
g. Alkybenzyldimethylammoniumchloride 0.1 %

2. Results

The counting results of the culture slides and the calculated log10 values and the log10 reductions are shown in the table 1 - 6.
The examined test surfaces were adequately disinfected, i.e. above 5log stages, with all disinfectants except formalin 1 %. In addition to this, the effect of alkylbenzyldimethyl-ammoniumchloride 0.1 % on the cut edge was also inadequate with the test germ S.aureus.
Apart from a few exceptions the reference surfaces OP-tiles, PVC and stainless steel yielded the same results (in one test, chloramine T – 1 % and p-chlorine –m-kreson 0.3 % reveled an inadequate effect with the test germ E.coli on OP-tiles and PVC respectively).

3. Evaluation

Tested materials **FH- compact board –13mm (F 62 FH), FH- compact Board 13mm (718 FH), P – Max board 1mm (107 P), H- Max board 1mm (E 76 H)** and the **polished cut edge of the compact board** performed equally well disinfectable as OP tiles, PVC test pieces and stainless steel slabs during a disinfectablity test. In accordance with the test results in hand, these materials can be considered as adequately disinfectable for use in medically utilised areas in hospitals. Only the disinfection with 1 % formalin resulted in inadequate yield. However this also applied to the reference test surfaces employed. Moreover, formalin is the only agent that is no longer in popular use in surface disinfectants.

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