

Tests of dressing material Bauer Bandage passed in laboratories of OEČ ÚVN Prague based on order of producer – company BETTAC plus, s.r.o., dated 14.5.2010.

### **Description of tested material**

Sterile square ( 10x10 cm) with active carbon, intended for one use only. Square is made of two plies : contact ply is active carbon fabric, cover ply is non-woven textile. Part of unit package is also absorbent pad ( blanc of fanfolded gauze )

### **Performed tests**

#### *a) Suction ( absorption ) capacity in modelling clinique conditions according to SOP-F02*

Suction capacity in modelling clinique conditions sets quantity of liquid, which sample of dressing pillow absorbs from modelling wound up to total saturation. It describes as weight of absorbed modelling liquid, relative to weight of the sample.

#### *b) Protective effect of dressing against the secondary bacterial contamination acc.to SOP-B02*

Sample of dressing is contaminated from outside with bacteria of tested strain and consequently is step-by-step charged in modelling equipment with described quantity of wether blood the way to let the blood burst through from inside ( contact side ) of sample to outside, contaminated side. Test objective is to find out the period, during which the material protects the penetration of bacteria from contaminated outside into contact side of tested material.

#### *c) Suction ( absorption ) capacity in the water according to SOP - F01*

Suction capacity ( hydrophilie) is the ability of the product to keep absorbed water. It describes by the size stating quantity of water in g, which 1,0g of the fiber or fabric fully saturated with water keeps during 10 minutes draining.

### **TEST RESULTS**

#### *a) Suction capacity in modelling clinique conditions*

First of all, the suction capacity of single squares of active carbon, without enclosed fanfolded gauze.

Material sucked very unevenly and with all three tested samples the suction stopped, when  $\frac{1}{2}$  to  $\frac{2}{3}$  of the surface of the samples were saturated.

During the first tens of minutes, weight dependence of sucked modelling liquid on the period of sucking was almost linear. After cca 60 minutes the sucking started to slow down. After 8 hours samples still slowly saked. For this reason the samples were left in the equipment over the night and the final value of the suction capacity were stated after 24 hours from the test opening.

With all tested samples, cca 80% of the tested liquid was saked during first two hours. During 8 hours from the test opening, cca 90% of the tested liquid was sucked.

**Test results of the suction capacity in modelling clinique conditions :**

Sample No.	Sorpton Capacity ( g/g )	
	In 8 hours	In 24 hours
1	3,6	3,9
2	3,4	3,7
3	3,5	3,7
4	3,7	4,2
5	3,8	4,2
<b>Average</b>	<b>3,6 g/g</b>	<b>3,9 g/g</b>

*b) Protective effect of dressing against the secondary bacterial contamination*

Opening contamination of outside of the samples was several bacterial colonies up to mesoscale contamination ( more then 50 colonies on sample mark ).

Contamination of outside of the sample and relevant penetrating of the tested bacteries through the bloodily sample from contaminated side to contact side was observed by cultivation of marks of outside and contact side. Marks were done in 1, 24, 48 and 72 hours from opening the tests. As it was stated by the cultivation of marks made 24 hours from the opening of test that outside there are not presented any tested bacteries, contaminations was restored after 48 hours from the test opening. This time it was very strong contamination ( over 100 colonies on the sample mark )  
There was no penetration back of the tested bacteries from outside to contact side with any of the samples.

**Results of the Tests of Protective Effect of the dressing against the secondary bacterial contamination :**

Number of colonies on mark of outside and contact side of sample								
Sample no.	1 hour		24 hours		48 hours		72 hours	
	outside	contact	outside	contact	outside	contact	outside	contact
1	28	0	0	0		0	0	0
2	12	0	0	0	more	0	0	0
3	72	0	0	0	then	0	0	0
4	58	0	0	0	100	0	0	0
5	64	0	0	0		0	0	0
6	15	0	0	0		0	0	0
7	42	0	0	0		0	0	0

*c) Suction ( absorption ) capacity in the water*

5 samples of the squares of active carbon ( without fanfolded gauze ) and 5 samples of squares of active carbon including fanfolded gauze were tested.

**Results of the tests**

SAMPLE	Suction capacity ( g/g )	
	<i>Squares without gauze</i>	<i>Squares with gauze</i>
No.		
1	2,4	11,9
2	2,5	11,2
3	2,7	11,6
4	2,2	11,3
5	2,5	11,6
<b>average</b>	<b>2,5 g/g</b>	<b>11,5 g/g</b>

**Conclusion**

- tested samples of the dressing material Bauer Bandage have average suction capacity in modelling clinic conditions 3,9 g/g
- period of protective effect against secondary bacterial contamination is, regarding dressing material Bauer Bandage, 72 hours at minimum
- average hydrophilie of the tested samples of Bauer Bandage without the gauze is 2,5 g/g. Samples including fanfolded gauze have average hydrophilie 11,5 g/g

ing. I. Rumlova  
Head of Laboratory