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Title: **Foam Wound Dressing Testing - Fluid Handling Capacity**

Date: **22 November 2006**

Report No: **06/2283/5**

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Author(s)  
**Paul Fram**

Location  
**Princess of Wales**

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S . M . T . L .

subject: **Foam Wound Dressing Testing - Fluid Handling Capacity**

date: **22 November 2006**

from: **Paul Fram  
Princess of Wales  
Tel: +44-1656-752820**

**Report No: 06/2283/5**

*Test Report*

06/2283/5

**1. Name & Address of Client/Requesting Authority.**

Ed Walton  
Smith & Nephew  
Healthcare Ltd.  
Healthcare House  
Goulton Street  
Hull, HU3 4DJ  
England, UK

Email:ed.walton@smith-nephew.com

**2. Introduction**

The SMTL were requested by the client to perform comparative testing on Smith & Nephew New Allewyn and Competitor A Foam Island Dressings.

**3. Test Product(s)/Sample(s)**

**TABLE 1.** Test Product(s)/Sample(s) tested by SMTL.

<b>Manufacturer</b>	<b>Item</b>	<b>Batch/Lot No</b>	<b>Quantity</b>	<b>Date Received</b>
Smith & Nephew	New Allewyn Adhesive 10x10cm foam dressing	0637/ 66000599	55	04/10/2006
Competitor A	Product A 10x10cm foam island dressing	xxxxx/ xxxxxxxx	50	04/10/2006
Competitor A	Product A 10x10cm foam island dressing	xxxxx/ xxxxxxxx	5	04/10/2006

**NOTE: The test results in this report relate only to the test sample(s) analysed.**

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### 3.1 Departures/Abnormalities of Sample Condition

None.

## 4. Date of Testing

November 2006

## 5. Testing Details

### 5.1 Fluid handling properties

The fluid handling properties of the dressings were examined using SMTL test method TM-65.<sup>(1)</sup>

In this test five samples of each dressing of known weight are applied to Paddington cups (modified Payne cups) to which are added 20 ml of a solution of sodium/calcium chloride containing 142 mmol/litre of sodium ions and 2.5 mmol/litre of calcium ions, here after known as **Solution A**. The cups are weighed and placed in an incubator at 37±2°C together with a tray containing 1kg of freshly regenerated self indicating silica gel for a period of 24 hours. At the end of the test the cups are removed from the incubator, allowed to equilibrate to room temperature and reweighed. From these weighings the loss in weight due to the passage of moisture vapour through the dressing is determined. The base of each cup is then removed and any remaining fluid allowed to drain.† The cup is then reweighed once again and the weight of fluid retained by the dressing calculated by difference. For hydrocolloid dressings, the average of the five results shall be not less than 1.5g/10cm<sup>2</sup>/24Hrs.

This test can be repeated over a period of 48 hours. The average of the five results shall be not less than 2.0g/10cm<sup>2</sup>/24Hrs.

### 5.2 List of SMTL Test Methods Used.

— TM-65 - Fluid Handling Properties of Wound Management Dressings.<sup>(1)</sup>

### 5.3 Deviations/exclusions from, and additions to standard methods.

The following deviations from the SMTL test method TM-65<sup>(1)</sup> were employed to ensure the dressings were tested to the requirements of BS EN 13726-1:2002<sup>(2)</sup>

- The testing was performed in a temperature/humidity controlled incubator to maintain an environment of 37°C (±2°C) and relative humidity below 20%. Therefore, the use of 1kg of silica gel was not required for this testing.
- Weighing was performed on a calibrated analytical balance.
- Following incubation, Paddington cups were allowed to acclimatise at room temperature for 30 minutes prior to weighing.
- Due to the clients requirement for extended testing and the high FHC obtained with one of the dressings over the initial 24hr testing, the fluid amount introduced into the

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† If there is an accumulation of test fluid between two components of the dressing, the inner component must be slit with a scalpel blade to allow free drainage of the entrapped fluid.

paddington cups at the start of the testing was increased from 20ml to 30ml for the 48hr and 72hr tests.

#### **5.4 Standards relevant to the test method.**

— *BS EN 13726-1:2002: Test methods for primary wound dressings. Aspects of absorbency. Section 3.3 Fluid handling capacity (plus moisture vapour transmission rate, liquid in contact)*<sup>(2)</sup>

#### **5.5 Sampling Details**

All samples were selected and supplied by the client.

#### **5.6 Sample Preparation**

As stated in the SMTL test method.

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## 6. Results

The results of the fluid handling testing are summarised in tables 2 to 4.

**TABLE 2.** Fluid handling properties following 24 hours incubation

Dressing	Moisture Vapour Loss (g/10cm <sup>2</sup> )	Absorbency (g/10cm <sup>2</sup> )	Fluid Handling Capacity (g/10cm <sup>2</sup> )
<b>Allevyn Adhesive</b>	12.352 (0.4181)	4.326 (0.0434)	16.678 (0.3995)
<b>Product A</b>	1.672 (0.1069)	3.444 (0.0404)	5.116 (0.1367)

**Note:**

- The results are the mean of 5 determinations
- Figures in brackets denote standard deviations

**TABLE 3.** Fluid handling properties following 48 hours incubation

Dressing	Moisture Vapour Loss (g/10cm <sup>2</sup> )	Absorbency (g/10cm <sup>2</sup> )	Fluid Handling Capacity (g/10cm <sup>2</sup> )
<b>Allevyn Adhesive</b>	24.706 (2.4968)	3.908 (1.0734)	28.614 (1.8624)
<b>Product A</b>	3.194 (0.2073)	3.534 (0.0643)	6.728 (0.2271)

**Note:**

- The results are the mean of 5 determinations
- Figures in brackets denote standard deviations

**TABLE 4.** Fluid handling properties following 72 hours incubation

Dressing	Moisture Vapour Loss (g/10cm <sup>2</sup> )	Absorbency (g/10cm <sup>2</sup> )	Fluid Handling Capacity (g/10cm <sup>2</sup> )
<b>Allevyn Adhesive</b>	29.518 (0.7989)	0.560 (0.7328)	30.078† (0.0722)
<b>Product A</b>	4.558 (0.0476)	3.650 (0.1476)	8.208 (0.1587)

**Note:**

†- **These dressings retained NO fluid at the end of the testing period**

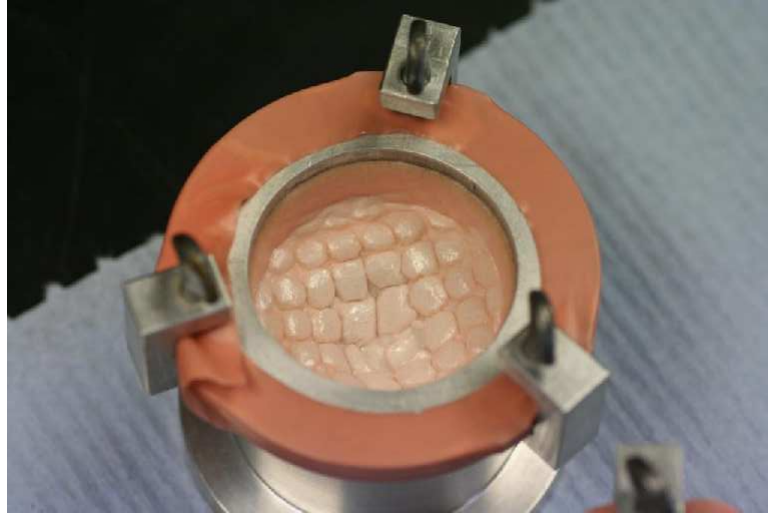
- The results are the mean of 5 determinations
- Figures in brackets denote standard deviations

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**Figure 1.** Outside appearance of Allevyn Adhesive - 72hr testing



**Figure 2.** Inside appearance of Allevyn Adhesive - 72hr testing

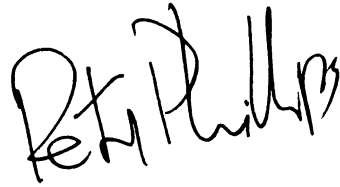


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A handwritten signature in black ink, appearing to read 'Peter Phillips', written in a cursive style.

Authorised by: Peter Phillips  
Acting Director, SMTL  
January 2007

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*References*

1. Surgical Materials Testing Lab., "Fluid Handling Properties of Wound Management Dressings.," TM-65 ().
2. "Test methods for primary wound dressings. Part 1; Aspects of absorbency. Section 3.3 - Fluid Handling Capacity (absorbency plus moisture vapour transmission rate, liquid in contact).," *BS EN 13726-1 Section 3.3*, British Standards Institution, (2002).

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