

# PERFORMANCE CHARACTERISATION OF A REINFORCED HIGH GELLING MOIST WOUND DRESSING

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Advanced Medical Solutions

## Introduction

Exudate can be defined as fluid leaking from a wound. It plays a central role in healing (Romanell *et al*, 2010). Effective exudate management can reduce healing time, reduce exudate related problems such as peri wound skin damage and infection, improve patients' quality of life, reduce dressing change frequency and clinician input, and generally improve healthcare efficiency (Romanell *et al*, 2010).

Exudate management is a challenge for any healthcare team as well as for the patient and despite a number of products being available, many patients still feel that exudate management is a significant problem, particularly for cavity wounds (Jones, 2008). Chronic wounds are prone to higher levels of exudate due to the volume of tissue loss and the potential for increased bacterial burden (Timmons, 2008). Alginate dressings have been available for a number of years and can play a major role in the management of wound exudate for a wide number of wound types.

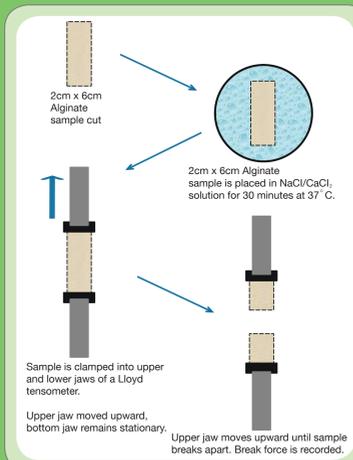
A high gelling alginate dressing has now been developed with improved performance characteristics that will result in reduced dressing change frequency, thus having a dual benefit to both the patient and clinician. The improvements in the dressings' performance have been measured via a number of *in-vitro* laboratory tests to determine what clinical advantages it may potentially offer.

## METHOD

The following assessments have been made on the improved dressing

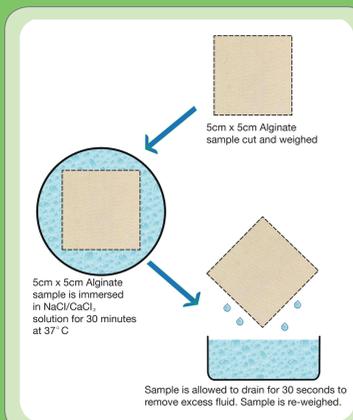
### Wet Tensile Strength:

The wet tensile strength is determined by measuring the force in Newtons required to tear the sample apart. A 2cm x 6cm sample is submerged in excess NaCl/CaCl<sub>2</sub> solution for 30 minutes at 37°C. The sample is clamped into the Lloyd Tensometer and the upper clamp retracts upward, stretching the sample until torn apart. The wet tensile strength is the maximum force obtained prior to sample breakage. The test is repeated a further 9 times to obtain an average.



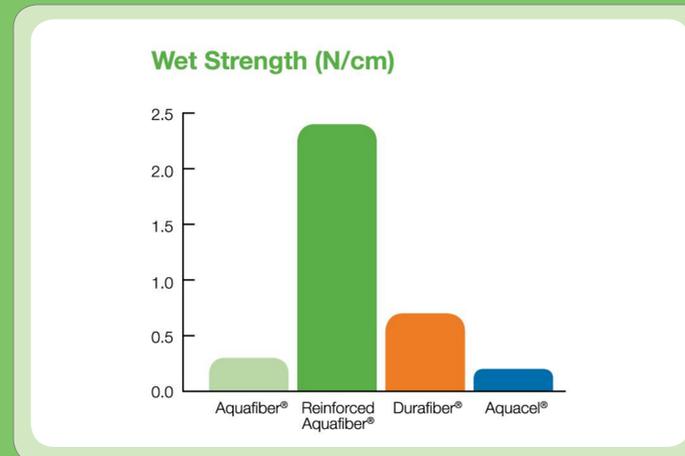
### Absorbency Characteristic:

The absorbency is determined by measuring the ability of the sample to absorb and hold salt solution. A 5cm x 5cm alginate sample is weighed and then immersed in an excess of NaCl/CaCl<sub>2</sub> solution for 30 minutes at 37°C. Forceps are used to suspend the sample out of solution and to drain for 30 seconds. The sample is then re-weighed and the absorbency capacity calculated. The test is repeated a further 9 times to obtain an average (BS EN 13726-1:2002).

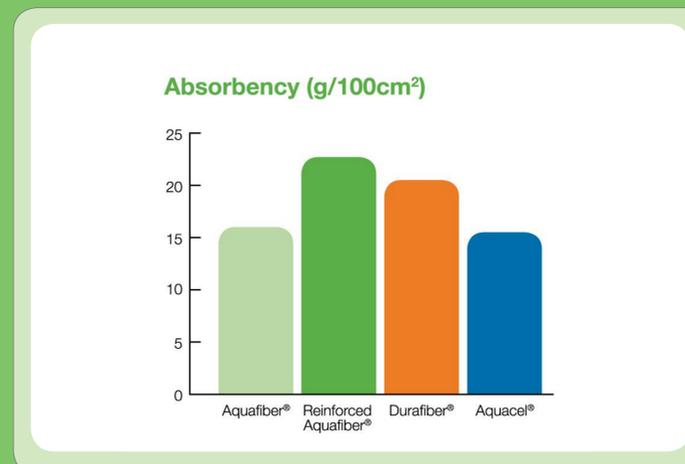


## RESULTS

The data below shows that the improved ActivHeal AquaFiber® is now 8 times stronger than current ActivHeal AquaFiber® when wet.



The data below shows that the improved ActivHeal AquaFiber® is now 40% more absorbent than current ActivHeal AquaFiber®.



## DISCUSSION

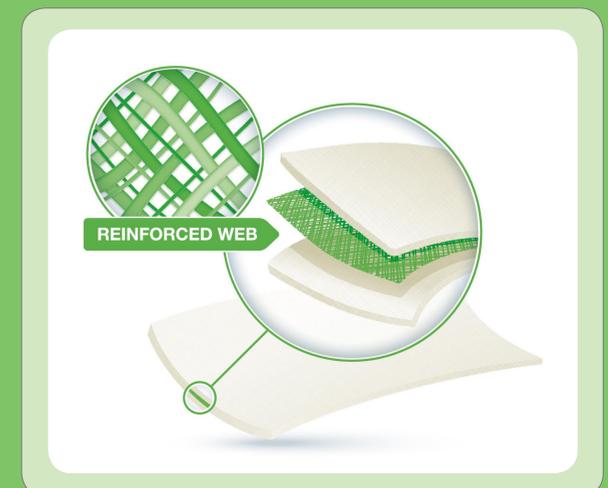
When using dressings designed to absorb exudate, it is important to consider not only the total absorbency but also other attributes that may aid the healing process, e.g. soft conformable gelling characteristics.

Dressings with a high absorbency will, dependant on the level of exudate, extend the wear time and therefore reduce the need for frequent dressing changes and consequently save on nursing time.

Fibrous dressings with a high wet tensile strength will give the clinician greater confidence that the dressing can be removed intact, minimising trauma to the wound.

## CONCLUSION

The *in-vitro* tests show improvements in overall dressing performance, specifically in the areas of absorbency and wet strength, thus providing the clinician and the patient greater confidence that the dressing will absorb more exudate and remain intact for removal.



## REFERENCES

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- BS EN 13726-1:2002. Test methods for primary wound dressings – part 1: Aspects of absorbency (British Standard).

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