Silcare Breathe Cushion

Silcare Breathe was the first laser-drilled, perforated liner available on the prosthetic market. The liners use the same silicone as Blatchford's existing non-perforated liners but feature numerous laser-drilled holes that form channels between the inside and outside of the liner.

The design addresses a problem that is becoming more and more prevalent with the increased use of prosthetic liners; that of excessive sweating. If sweat from the residual limb is trapped against the skin and cannot escape, it can cause numerous problems that can have serious implications for the health and safety of the user. The perforations allow sweat to escape from the skin to the outside the liner, helping to keep the residual limb dry and healthy, and reducing the detrimental effect on the user.

Silcare Breathe Cushion has a rounded distal profile, with perforations continuing all the way to the end. It is used with suspension sleeve, passive vacuum or elevated vacuum suspension systems. Vacuum-based suspensions distribute the load over the whole residual limb, rather than localized areas, and the perforations of Silcare Breathe Cushion allow the vacuum to act directly on the residuum skin surface.

Clinical Outcomes using Sweat Management liners

Improvement in **RESIDUAL LIMB HEALTH**

- Improvements in residual limb health problems and wound healing[1,2]
- Fewer residual skin issues[2]
- Reduction in pain in residual and phantom limb[2]
- Improved heat dissipation compared to other temperature regulation solutions[3]
- Removes sweat from skin interface[1,2,4]
- Perforations do not damage the skin[4]

Improvement in **USER SATISFACTION**

- Patients reported a preference for their perforated liners[1,4]
- Reduces the need to remove prosthesis throughout the day to dry residual limb[4]

Clinical Outcomes using Silicone liners

There are two published literature reviews that discuss different aspects of lower limb prosthetic liner technology[5,6].

- The main purpose of prosthetic liners is to cushion the transfer of loads from the prosthetic socket to the residual limb[5].
- Based on load-displacement data from the compressive stiffness tests, silicone was one of three materials that were recommended for situations where it is desirable for the liner to maintain thickness and volume since these materials had the least non-recovered strain[5,7].
- Under cyclic compressive loading, silicone was one of two materials that had the greatest cycles to failure under compressive loading, while the Pedilin and polyurethane samples lasted orders of magnitude less[5,8].
- Prosthetic liners and sockets are highly resistive to heat conduction and could be a

major contributor to elevated skin temperatures[5,9].

- There are reduced residual limb pressures with the silicone liner compared to other conditions (no liner; soft inserts) suggesting that silicone has an ability to distribute pressure evenly to the residual limb[5,10].
- In terms of patient outcomes, there was no clear preference between silicone and Pelite liners[5,11].

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