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## Static Air: WAFFLE® Design

Static Air is the ideal media in which to support the soft tissue at risk. This is explained and confirmed by both scientific principles (chemistry, physics, and mechanics) and clinical results.

The container design is critical in a static air product's performance. The same properties of static fluid pressure that creates beneficial therapy can also be detrimental to the soft tissue at risk. When supporting a body on a static air mattress overlay, it is a balancing act between having enough air to float the body off the underlying surface to prevent bottoming out and having too much air. Too much air makes the product hard and stiff. A stiff product will apply more external shear to the skin causing the soft tissue to distort. A soft pliable product will allow the body to sink down into the product and contour the body to maintain a "normal" anatomy.

The design of the static air container will also dictate what type of stresses are placed on the soft tissue. When partitioning is used in a single air chamber design (internal baffling), a "trussing" effect occurs that makes for a very rigid, non-contouring, high profile surface. This rigid design forces the body to sit on top of the mattress and alter or distort the soft tissue, thus causing shearing of the soft tissue to occur. External trussing (holes left in) will also transform a desired static air (fluid) chamber into a solid like product.

The use of a "tufted" holes through and through design provides advantages with respect to the way the mattress performs, as well as nursing ease of use. The patented tufted expansion control design provides the necessary depth to the air column to provide support and total body contouring. The mattress will actually change shape to contour the body instead of the body changing shape to conform to the support surface. The expansion control design leaves a few holes in at the perimeter of the mattress to help volume center the air under the heaviest part of the body, the torso. This design also will prevent the heel from inadvertently getting caught in an open hole at the foot of the mattress. The holes left out under the torso also allows for air circulation and heat dissipation. This low profile design allows for easy access to the patient, enabling the caregiver to log roll, transport, and position the patient while remaining on the support surface to provide uninterrupted protection of the soft tissue.

The problem with static air media is that it requires a container to keep the air from being dispersed. There are two points to remember about static air: air is cheap but it is the container that can be expensive, and not all static air products deliver the beneficial effects of the static air media. Thus, a single chambered, non-partitioned air product has a definite advantage because it is a safe, low profile design which offers a non-gradient perpendicular support to completely contour to the soft tissue thus providing flotation therapy. The body can only float on a fluid support system (air or liquid).