

# AXIOM

SEATING SOLUTIONS BY  Mobility



## CUSHIONS



# AXIOM

## ORIGINS

Ki Mobility's excited to introduce Axiom Seating to the complex rehab industry. We created a cohesive family of products with a "Best in Class" approach, based on the Science of Seating.

Every cushion was developed with the core design elements of Directed Loading and Surface Tension Reduction through the use of Pre-contoured shapes, high-end, quality materials and superior cover design.

It's important for all cushions (from General Use on up) to have a properly designed Pre-contoured shape. That's why we cooperated with Georgia Tech to study anthropometrics. The result... Designs that have the best possible cushion shapes to fit a wide range of sizes and needs.

We chose to use high-end materials in our foam and fluid components. You will see the foams have a high IFD and density, and our fluid is light-weight and non-temperature sensitive. Both elements lead to a long-lasting, comfortable and functional product.

Finally, you will see a consistent look and feel from all of our seating products. The cover has a sleek, minimalist look with a lot of high-end features like zipper pulls with a stow-away pocket, water resistant zippers and high-denier fabrics. Axiom cushion covers are not only highly functional, but are attractive enough to compliment any chair, regardless of color.

There was a lot of thought put into the Axiom seating line.

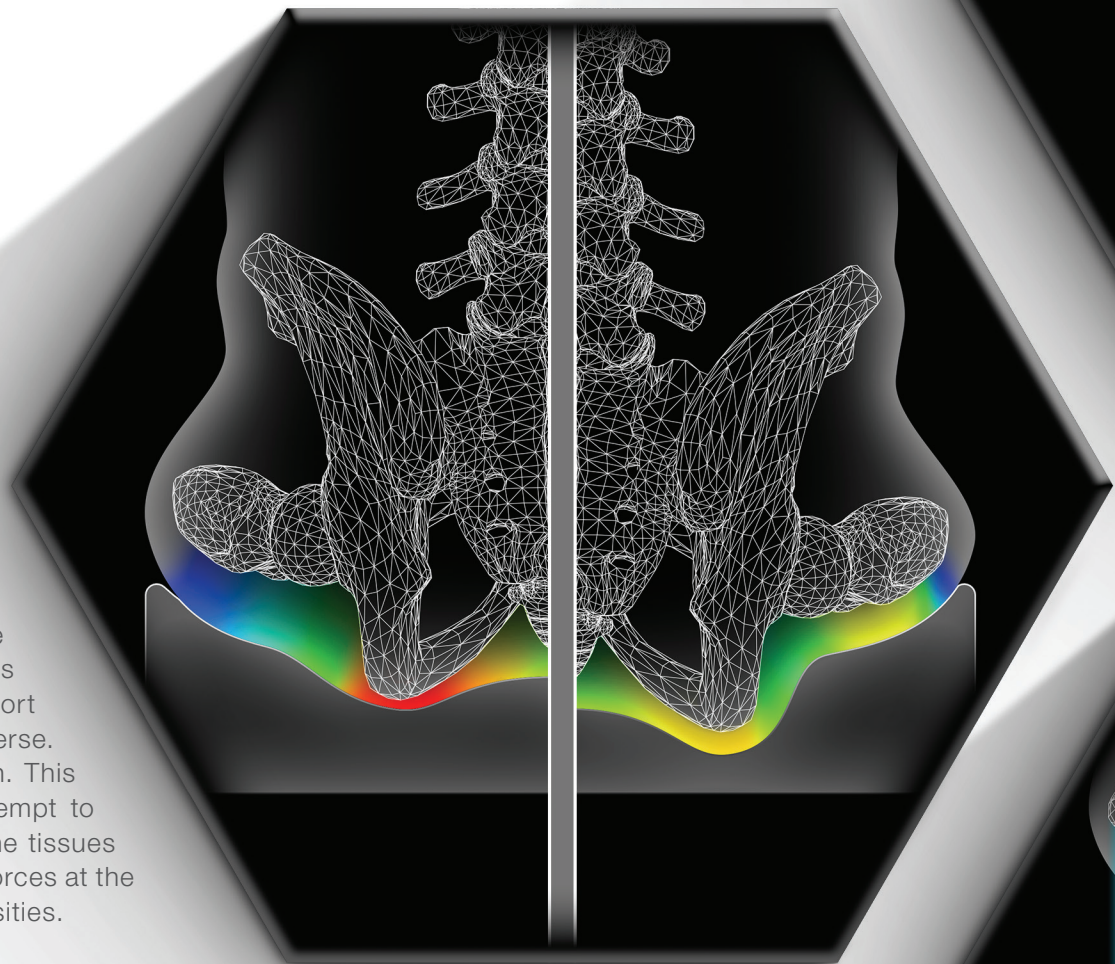
***It didn't just happen, we designed it this way.***

# AXIOM | DESIGN

High quality polyurethane foam can be used to make a highly effective cushion. The efficacy does not just come from the quality of the materials, but also the specific shapes, densities and coverings. All aspects of design are critical to the cushion's performance. Let's cover some specific design concepts used throughout the Axiom line.

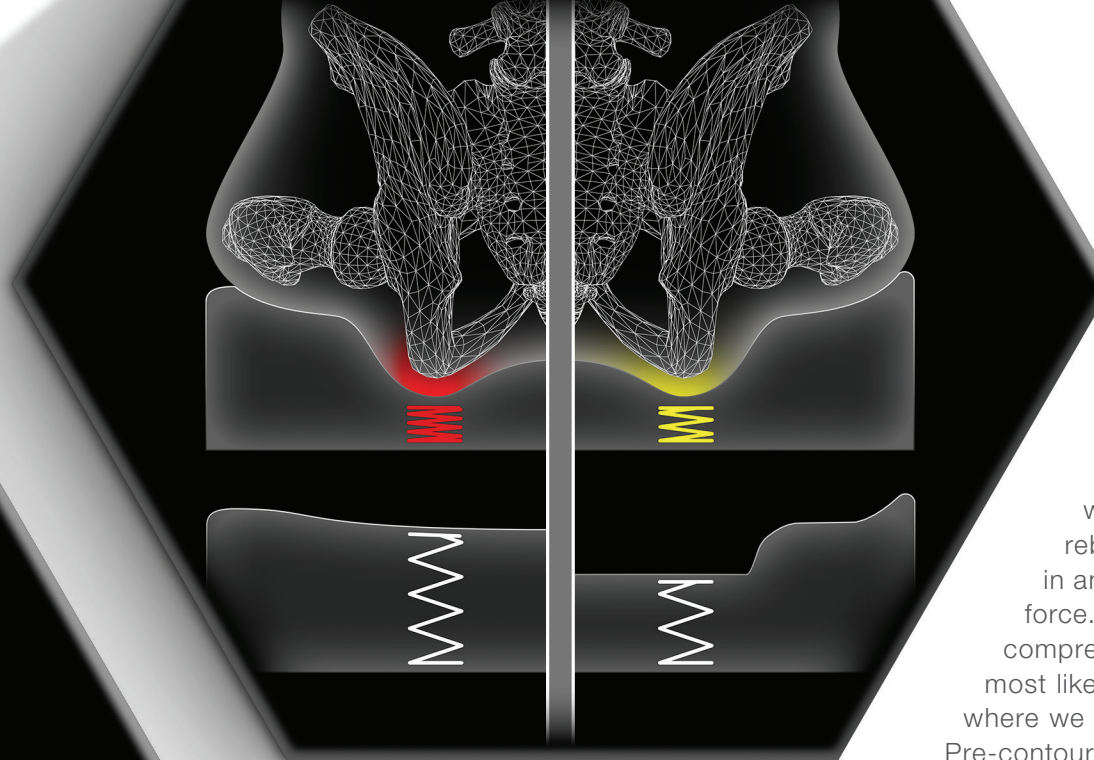
## SURFACE TENSION REDUCTION

Improved pressure distribution and stability are directly related to the ability of the body to immerse itself in the cushion. Less immersion means less surface area to spread the load over and a smaller base of support for stability. Foam compresses under load to allow the body to immerse. Surface tension in the foam and its coverings can limit that immersion. This is the result of tension forming as the foam and cover materials attempt to stretch to accept the body. This tension can also change the shape the tissues supporting the bony prominences take under load, thus concentrating forces at the point of greatest immersion, usually the area around the Ischial Tuberosities.



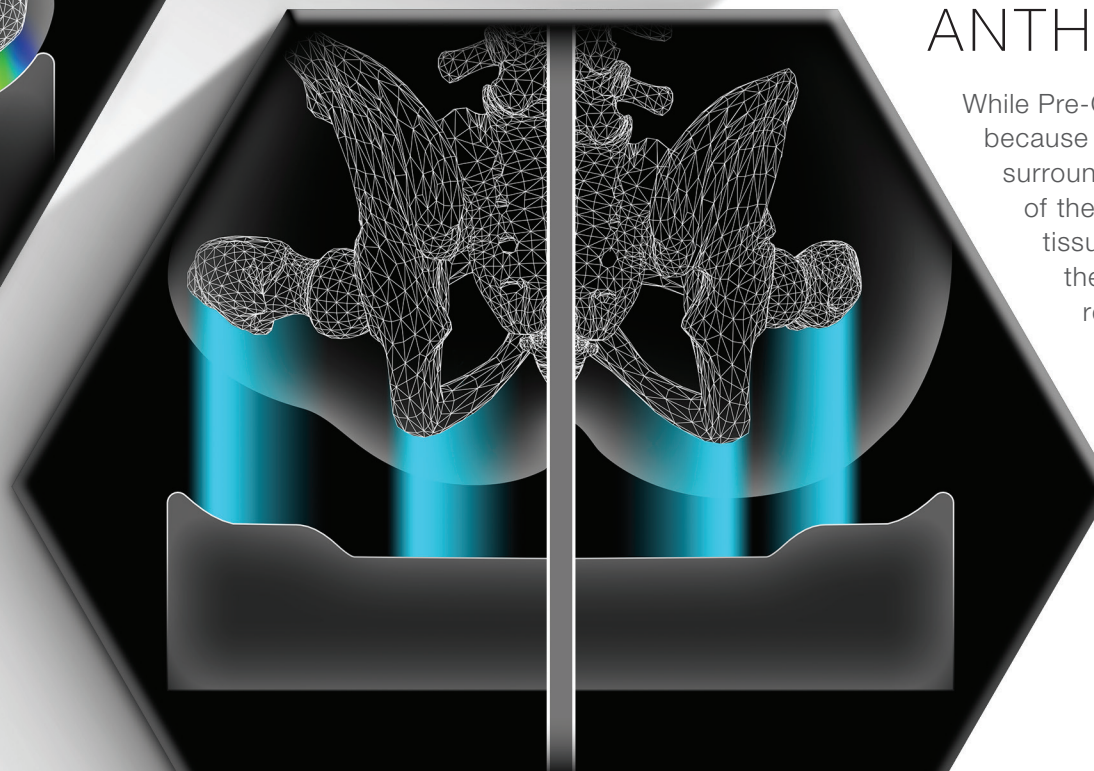
## PRE-CONTOURING

Polyurethane foam is made by the formation of a gas at the same time as the urethane polymerization is occurring; resulting in cells with elastic walls. As a result, the foam acts like a spring; it compresses under load and rebounds when the load is removed. There is a reaction force "pushing back" in any compressed area. The greater the compression the greater the reaction force. In a flat foam cushion the area of greatest immersion is the area of greatest compression and therefore it has the greatest reaction force. Unfortunately, this is most likely to occur around the tissue supporting the Ischial Tuberosities; the area where we are trying to reduce pressure. One way to reduce this reaction force is to Pre-contour the cushion to match the shape of the buttocks by removing foam.



## ANTHROPOMETRICS

While Pre-Contouring is a very effective design technique, it can be difficult to execute because humans vary in size and shape, as well as the quality and amount of tissue surrounding the bones we sit on. Cushion widths relate directly to the overall width of the individual and their wheelchair. A paraplegic individual may have very little tissue outside of their trochanters. So, their overall width may closely relate to their bi-trochanteric width. Conversely, another person may have considerable redundant tissue lateral to their trochanters and therefore have a much smaller bi-trochanteric width relative to their overall width. Since loading of the trochanters improves stability by widening the base of support and reduces the load the tissue that supports the Ischial Tuberosities must bear, designers must understand the anthropometry of the pelvis to design an effective cushion.



# AXIOM | G | P | S

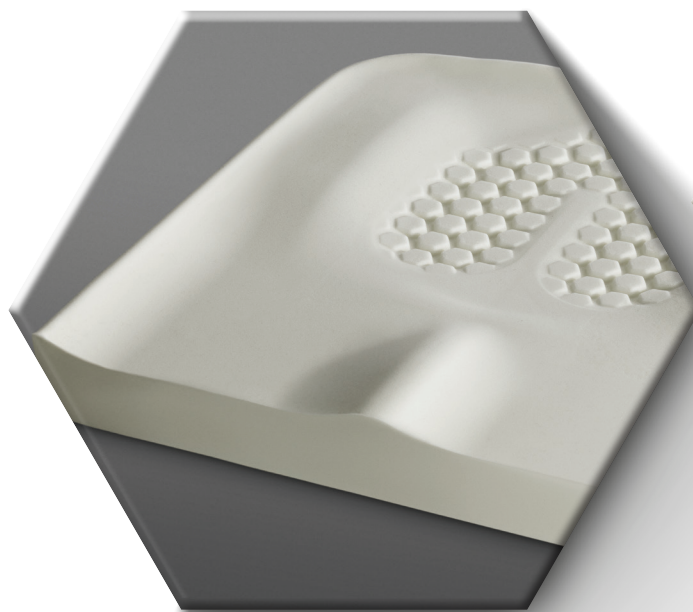
Unique hexagonal foam shapes that reduce surface tension and increase envelopment around the ischia and coccyx.

The cover features a 4-way stretch, water-resistant pleated top layer. By only using one cover, surface tension is reduced, providing better immersion into the hexagonal foam shapes.



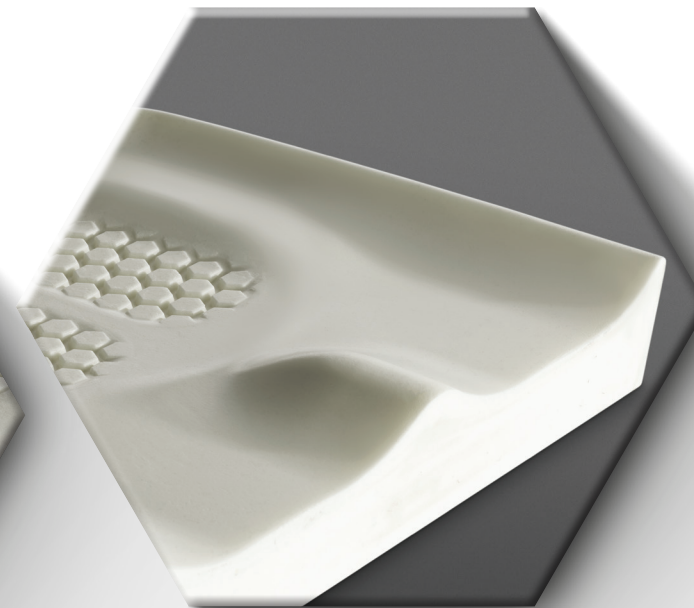
Water resistant zipper and zipper pull make it simple to don and doff the cover while still protecting the foam.

Easy-to-reach front handle comes with utility loops for hanging accessories.



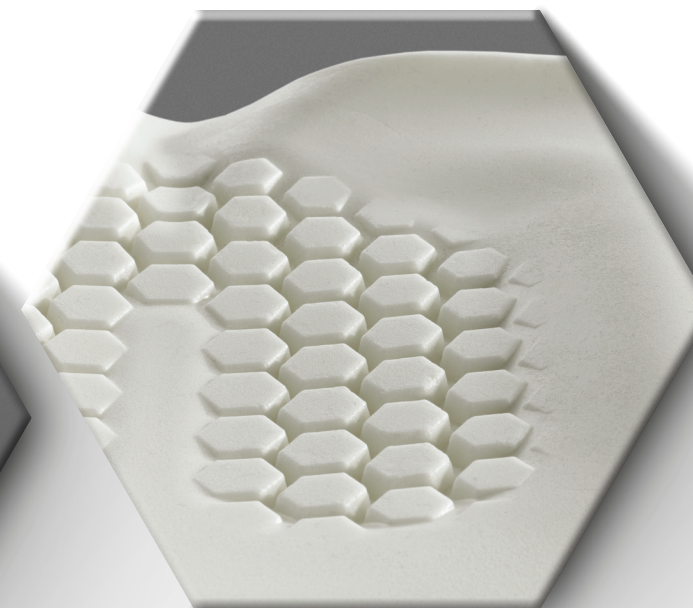
## AXIOM | G

A feature-rich, premium general use cushion that is anything but *Basic*. With its Pre-contoured shape, surface tension reducing well and high quality foam & cover materials, it is sure to be the professional's choice for years to come.



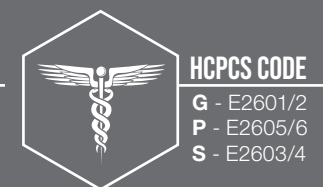
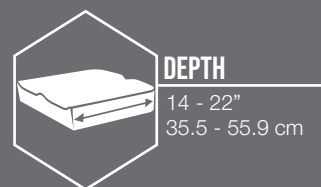
## AXIOM | P

Offering all the same great features of the Axiom G, with better medial and lateral stability. With superior positioning features and surface tension reduction in the well, the **Axiom P** proves positioning cushions can still be comfortable while providing positioning and stability.



## AXIOM | S

A skin protection cushion offering all the great features of the Axiom G, with a special emphasis on the area that distributes pressure around the tissues that support the bony prominences. Deeper hexagonal shapes allow for increased immersion with better envelopment, making Axiom S a great entry level skin protection cushion.



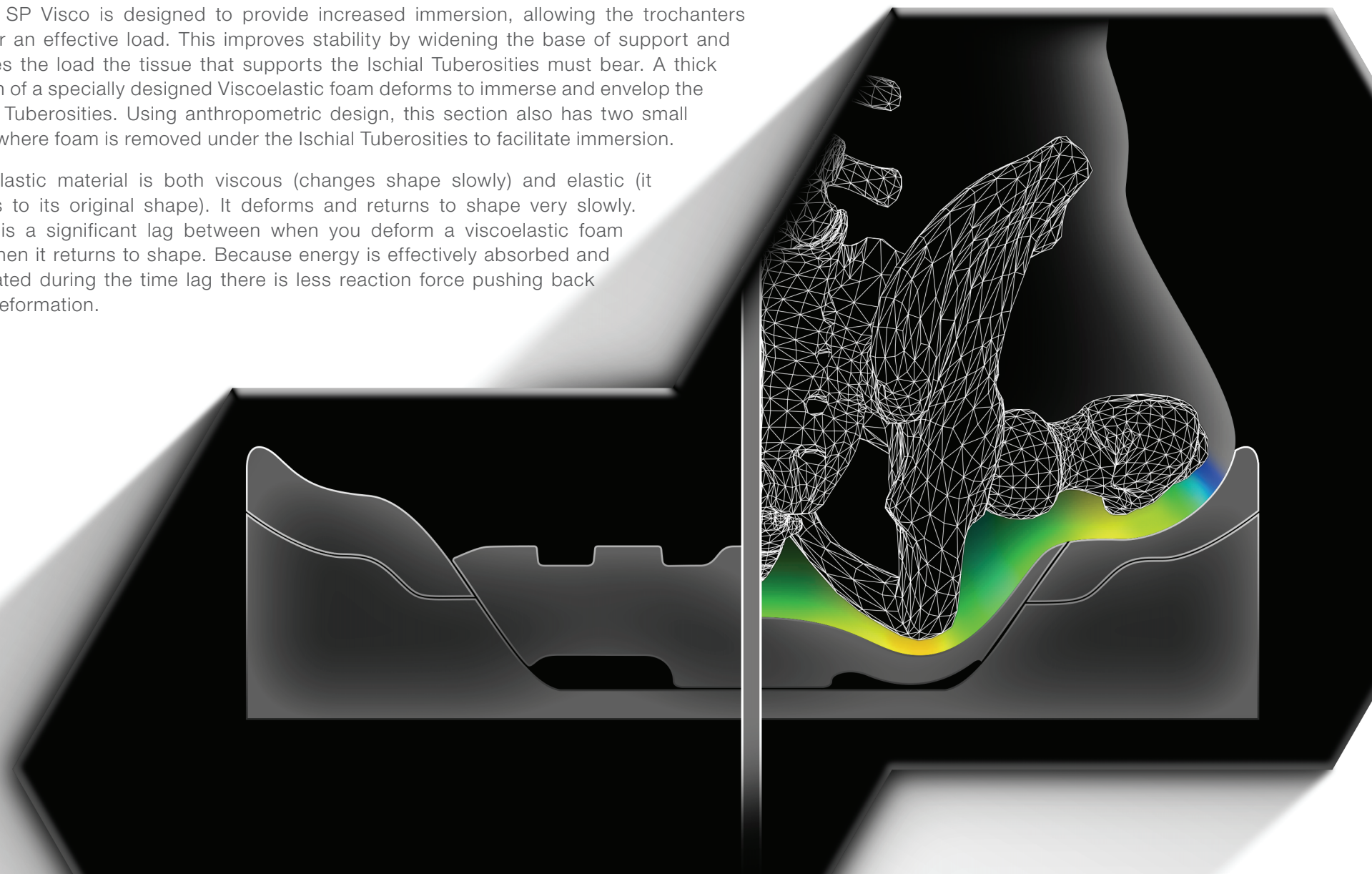
# AXIOM | SP VISCO



- 1 Super 4-way stretch Lycra outer cover reduces surface tension.
- 2 The outer cover features a microclimatic spacer fabric layer with horseshoe design around the well for layer reduction.
- 3 Pleated 4-way stretch inner cover with self-sealing zipper is water resistant and is easy to clean.
- 4 Viscoelastic foam insert with unique hexagonal shapes increase envelopment and reduce compression around the ischia and coccyx.
- 5 Dual density polyurethane foam base offers firm support in the lower layer with a durable comfort layer on top.

Axiom SP Visco is designed to provide increased immersion, allowing the trochanters to bear an effective load. This improves stability by widening the base of support and reduces the load the tissue that supports the Ischial Tuberosities must bear. A thick section of a specially designed Viscoelastic foam deforms to immerse and envelop the Ischial Tuberosities. Using anthropometric design, this section also has two small areas where foam is removed under the Ischial Tuberosities to facilitate immersion.

Viscoelastic material is both viscous (changes shape slowly) and elastic (it returns to its original shape). It deforms and returns to shape very slowly. There is a significant lag between when you deform a viscoelastic foam and when it returns to shape. Because energy is effectively absorbed and dissipated during the time lag there is less reaction force pushing back after deformation.



**WIDTH**  
14 - 22"  
35.5 - 55.9 cm



**DEPTH**  
14 - 22"  
35.5 - 55.9 cm



**HEIGHT**  
Leg Troughs  
3.25" | 8.25 cm



**HEIGHT**  
Overall  
4.5" | 11.4cm



**WEIGHT**  
3.5 lbs.  
1.59 kg



**WEIGHT CAP.**  
MAX  
350 lbs.  
158 kg



**HCPCS CODE**  
E2607/8

# AXIOM | SP FLUID



- 1** Super 4-way stretch Lycra outer cover material reduces surface tension.
- 2** Outer cover features a spacer fabric layer with a horseshoe design, providing microclimatic airflow along with layer reduction over the **Hydrolite**® fluid bladder.
- 3** The **Hydrolite**® fluid bladder is designed to sit on top of the waterproof inner cover; reducing surface tension and maximizing envelopment of the ischia and coccyx.
- 4** Dual density polyurethane foam base offers firm support in the lower layer with a durable comfort layer on top.

Like the Axiom SP Visco, the Axiom SP Fluid is designed to provide increased immersion, allowing the trochanters to bear an effective load, widening the base of support, and reducing the load the Ischial Tuberosities must bear. The Axiom SP Fluid uses a **Hydrolite**® fluid bladder instead of Viscoelastic Foam. The bladder rests directly under the super stretch outer cover, allowing it to conform to the tissues supporting the Ischial Tuberosities.

Fluid functions very differently than foam. While foam must compress and has elastic characteristics, fluid displaces. It actually moves away from a shape and tries to create an equilibrium where all the areas in contact with the shape have equal loading. **Hydrolite**® is a non-Newtonian fluid that behaves as a solid under the force of gravity, but flows as a viscous fluid under load, which can help minimize shear. It is also incredibly light, eliminating the “weight penalty” of other fluid cushions.

