



BioSpec® Armor Development

Mannington
COMMERCIAL

The Challenge

When it comes to flooring for healthcare environments, the range of unique and often abusive conditions in these spaces can present a significant challenge to specifiers. The flooring has to be safe, clean, and durable. At Mannington Commercial, we pride ourselves on providing performance that lasts. As the healthcare flooring leader, Mannington Commercial is dedicated to reviewing customer feedback and improving our products' performance.

Our customers shared with us that current OR demands – heavy rolling loads, surgical instrument strikes & OR table feet locks – continue to damage flooring within the OR suite. While not all OR environments are the same, rubber sheet, poured epoxy, and vinyl sheet are being impacted. We saw many images of damage coming from these tough environments, and we set out to help remedy the situation, being mindful of the different requirements of the array of OR environments in healthcare.



The Process

We started with our BioSpec® MD product that is popular in OR environments across the country and asked how we could improve this product to solve the issue.

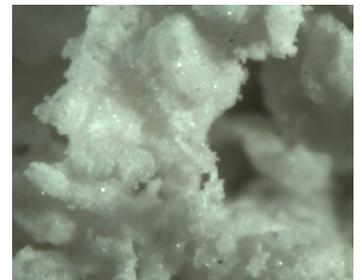


Engineered to Perform

First, we needed to understand the issue and isolate what attributes of the product contribute to the issue.

Next, we started attacking the problem with changing each attribute of the product at the structural level to see what can be accomplished with each change in terms stopping the rip, tear, gouge of the product in everyday use.

Once we found the attributes that could positively affect the performance, we moved to testing. Arduous and repetitive tear and drop tests were conducted using different formulations of our BioSpec® MD product that were engineered to improve density and increase total thickness at the molecular level. We increased the overall thickness of the product by 25% (from .080" to .100").



Tried and True Testing

Repetitive drop tests were performed on different product formulations using a corner foot with an eight-pound weight dropped from a height of 23", yielding 184 pounds of pressure per inch on impact.

The Solution

After exhaustive study of a multitude of alterations to our original formulation, BioSpec® Armor's robust 100 mil homogeneous sheet out-performed all major competitors (as well as 120 mil rubber products) by maximizing tear and gouge resilience, while minimizing cracking and indentation, thanks to its incomparable 3000 psi static load rating.

Holds Up Under Pressure

BioSpec® Armor Leading competitor 120 mil Rubber product

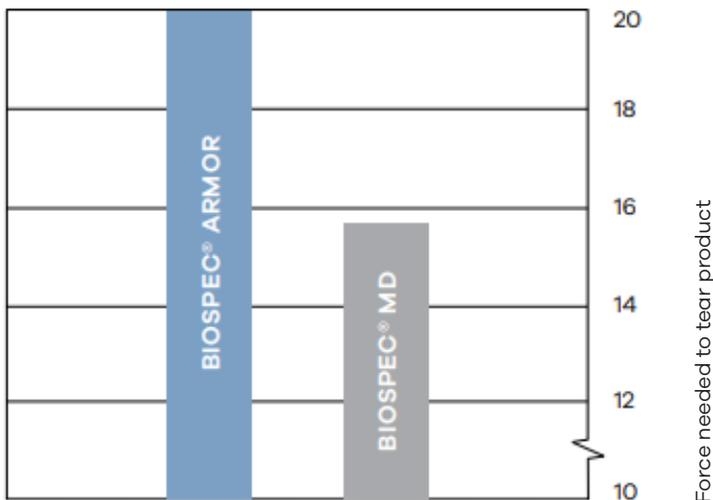


BioSpec Armor's 100 mil homogeneous sheet withstood breakage, minimized indentation and outperformed all major competitors, including 120 mil rubber products, in repeated drop tests¹.

¹ Dropping an eight pound weight from a 23" height (184 ppi) resulted in cracking and significant indentation on competitor product.

Improved Tear Resistant Formula

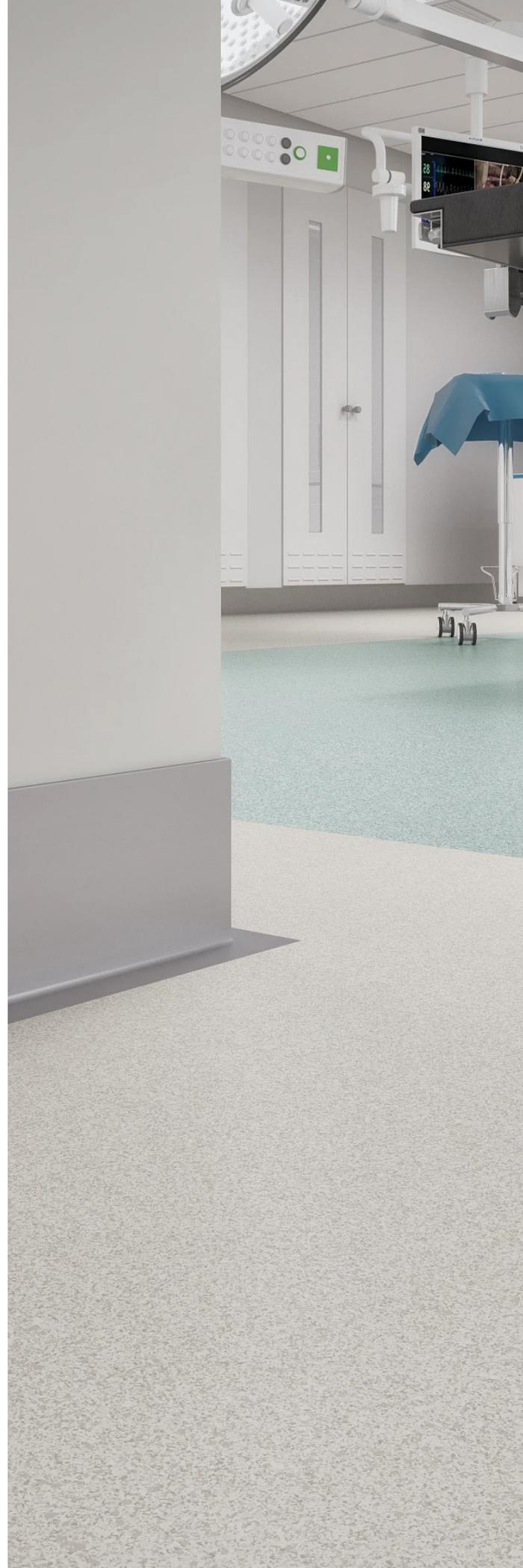
Tear Resilience



95% CONFIDENCE MEAN

Our engineered BioSpec Armor 100 mil construction significantly improves tear resistance, withstanding 4.4 pounds of additional force before wear than the original BioSpec® MD formulation² - a 28.5% increase in product durability and a PSI rating that increased from our BioSpec MD product by 50% (to 3000 PSI)!

² Tukey Method used in repetitive testing with 95% confidence.





BioSpec® Armor 100 mil homogeneous sheet provides advanced tear strength and gouge resistance with easy maintenance.

Performance Benefits

- Quantum Guard Elite® is the complete performance solution: cleans better than competitors and offers best-in-class abrasion, stain and slip resistance
- No polish maintenance option greatly lowers total cost of ownership

Environmental Data

- Non-ortho phthalate construction
- Low emissions; FloorScore® Certified, CDPH v11-2010
- Industry-wide 3rd Party Type III EPD

Warranty

- Limited 15-Year Commercial Warranty
- Limited 15-Year Quantum Guard Elite® Wear Warranty