

**Rigorous tests prove long-term durability of Aeron™ chair's  
Pellicle™ material**

A summary of Herman Miller Test Lab results

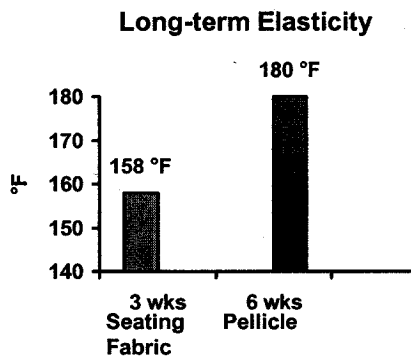
May 1995

**Because Herman Miller, Inc., considers the Pellicle material to be an operating component rather than a fabric of the Aeron chair, we offer an extended warranty—FIVE YEARS OF THREE-SHIFT USE. The following test results should help you understand why we are confident in offering such a warranty.**

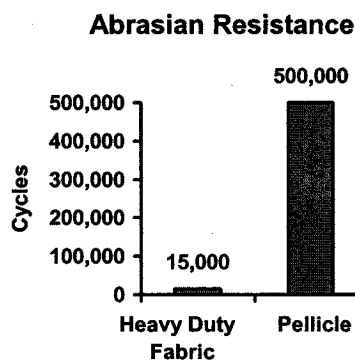
Since the Aeron chair's design eliminates conventional foam-and-fabric cushions, the Pellicle material that forms the seat and back of the chair must do double duty: It serves as both upholstery fabric and an integral component of the chair. For that reason, the Herman Miller Test Lab\* has conducted extensive ASTM (American Society for Testing and Materials), ANSI/BIFMA (American National Standards Institute/Business and Industrial Furniture Manufacturers Association), and internal tests to ensure the Hytrel/Lycra weave that makes up that Pellicle material withstand typical office wear and tear. Here are the results of those test.

**Strength and long-term elasticity**

To test the strength of the Pellicle material, a 300-lb. shot bag the size of a basketball was dropped from a height of six inches onto the center of the Aeron seat. No sudden or major change in the structural integrity of the seat was observed. *(ANSI/BIFMA dynamic drop test)*



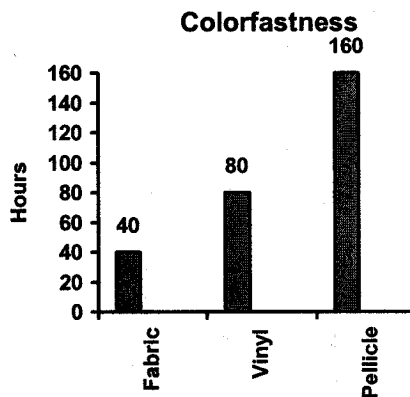
To test the ongoing elasticity of the Hytrel/Lycra weave of the Pellicle material, an Aeron seat was “aged” in a 180-degree (F) oven for six weeks. (Herman Miller normally ages seating fabrics at 158-degrees (F) for three weeks. The more rigorous Aeron seat test is based on one used in the automobile industry to test Hytrel in car seat suspensions.) At the end of six weeks, the Pellicle material showed no visible sagging or rippling, and there was no substantial change in the tension of the seat. *(Herman Miller accelerated aging test)*



**Long-term wear**

To test the Pellicle material's abrasions resistance, four Pellicle samples were stretched tight and clamped in place against a rotating cylinder of wire mesh screen. After more than 500,000 cycles, the samples still showed no appreciable wear (i.e., no broken strands). The Pellicle material thus far exceeds the highest ASTM abrasion resistance rating of “heavy duty” (for fabrics that show no appreciable wear after 15,000 cycles). *(ASTM wire screen abrasion resistance test)*

\* This lab is accredited by the American Association of Laboratory Accreditation, having met all the requirements set out by the International Standards Organization's “Guide 25”—the laboratory equivalent of ISO 9000 standards.

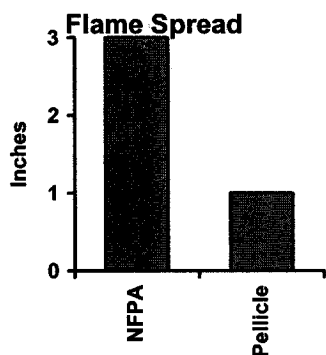


**Colorfastness**

To test for light-source fading, Pellicle samples were placed in a carbon arc chamber and rotated around an ultraviolet light source for 160 hours. (The typical time for fabrics is 40 hours; 80 hours is typical for vinyl.) The samples showed no changes in color or gloss or other material properties. (*Herman Miller ultraviolet light resistance test*)

To test for perspiration fading, Pellicle samples were soaked in a saltwater solution and then compressed against dry strips of white cotton, silk, and several synthetic blends. All the fabric strips remained unstained, earning Pellicle material the best rating from the American Association of Textile Chemists and Colorists (AATCC)—Class 5. (*Herman Miller perspiration resistance test*)

To test for colorfastness against cleaning products, 10 ml of four different ServiceMaster products was applied to the Pellicle samples. After being blotted dry, the samples showed no changes in color or other material properties. (*Herman Miller cleaning-agent colorfastness test*)



**Flammability**

To test for resistance to smoldering cigarettes, nine lit cigarette were placed under cover sheets on horizontal and vertical mockups of Pellicle material. After each of the nine cigarettes had burned their entire lengths, the size of the burn (char) surrounding each cigarette was measured. None of the nine charred areas had spread more than 1.0 inch on either side of the cigarette (exceeding the NFPA/BIFMA requirement for char to have less spread than 3.0 inches from the cigarette), and the Pellicle samples did not ignite. (*NFPA/BIFMA smoldering cigarette resistance test*)

To test for flammability, Pellicle samples were held at a 45-degree angle of a 5/8-inch flame for one second per side. CAL 117\* requires that if the material ignites, flame spread of 6.0 inches is to be more than 4 seconds. The Pellicle samples did not ignite.

\* The Aeron chair passes CAL 133 and the Boston Fire Code for flammability.

## **Independent strands**

### **Ravel resistance**

While it is physically possible but highly unlikely that individual Pellicle strands could be cut, neighboring strands would remain unaffected. This is because the Pellicle weave capitalizes on the strength of interlaced, yet independent strands of Hytrel and Lycra; each strand is individually encapsulated in the glass-reinforced ring that is affixed to the Aeron seat frame. Because of this design, the Pellicle material, unlike a woven sweater or pair of nylons, will not unravel if a hole is punched through or cut in it.

### **No snag**

- Nylon hose
- Rayon
- Silk

### **Snag resistance**

To test whether the Pellicle material will snag clothing materials, silk, rayon, and nylon hose fabrics were placed on a pilling-test holder and then rubbed over the Pellicle in all directions. After 100 repetitions, no snagging was observed on any of the tested materials. (*Herman Miller snag-resistance test*)

### **Electrostatic Charge**

To test electrostatic charge of the Pellicle, nine seating fabrics were tested by rubbing nylon and polyester fabric on the center of the seat, and electrostatic charge was measured at that point. The results showed that the Pellicle was slightly higher than the other fabrics but well within normal ranges. Individual susceptibility is dependent on humidity levels, clothing material, body capacitance, and seated activity. (*Herman Miller electrostatic-charge test*)