

MIRRA® CHAIR

 Herman Miller



Overview

- …✦ McDonough-Braungart Cradle-to-Cradle protocol
- …✦ Mirra contains 42% recycled material
- …✦ At the end of its life, it is 96% recyclable
- …✦ Manufactured to ISO 14001
- …✦ 12 year, 24 hour warranty

POLICY

53

In 1953 our founder, DJ De Pree, stated
'We will be good stewards of the environment.'
Since then accountable practice and production
has been and always will be our policy.

Herman Miller's environmental advocacy is long-standing and comprehensive. Since the 1950s, we have been, in the words of founder D.J. De Pree, 'stewards of the environment.' Today over 400 employees play a direct role in the work of 9 different environmental groups engaged in efforts from improving air quality and reducing waste to green energy.



Environmental Product Summary

MIRRA® CHAIR

Design story: The art and science of seating

The Mirra chair extends both the performance and aesthetics of ergonomic work seating to new levels. Introduced in 2003, Mirra resulted from years of careful research into fit, ride, tilt mechanisms, materials, aeration, adjustments, and design for the environment.

The German firm Studio 7.5 designed Mirra, determined to create a chair that as much as possible mimicked the motions of a human body at work. Mirra's organic look, feel, and material content reflect the designers' dedication to advancing both the art and science of seating.

Herman Miller's design protocol

Our commitment to corporate sustainability naturally includes minimising the environmental impact of each of our products. Our Design for the Environment team (DfE) applies environmentally sensitive design standards to both new and existing Herman Miller products, utilising the McDonough-Braungart Cradle-to-Cradle Protocol.

Cradle-to-Cradle goes beyond regulatory compliance to thoroughly evaluate new product designs in three key areas:

- *Material Chemistry and Safety of Inputs*—What chemicals are in the materials we specify, and are they the safest available?
- *Disassembly*—Can we take products apart at the end of their useful life, to recycle their materials?
- *Recyclability*—Do the materials contain recycled content, and more importantly, can the materials be recycled at the end of the product's useful life?

The Mirra chair is the first office product to be developed from the beginning under the guidance of our DfE team. Bill McDonough believes Mirra represents the most advanced

and thorough application of Cradle-to-Cradle principles a furniture maker has ever brought to the market.

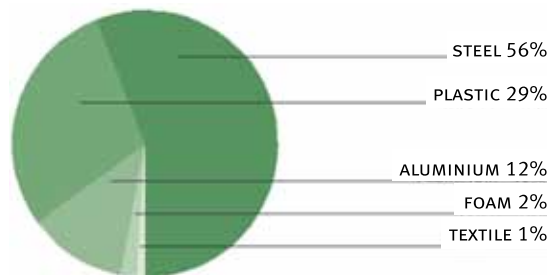
MBDC C₂ Certification

The Mirra chair is MBDC cradle-to-cradle certified, which means that:

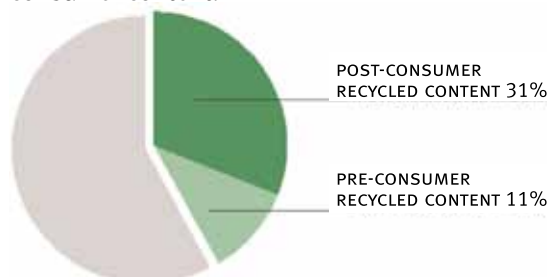
- Herman Miller has instituted strategies for social responsibility
- The use of renewable energy and energy efficiency; efficient use of water and maximum water quality are associated with Mirra's production
- Mirra is composed of environmentally safe and healthy materials and is designed for material reutilisation such as recycling

Material content

The Mirra chair's components are constructed from steel, plastic, aluminium, foam, and textile



Mirra is comprised of **42 percent recycled** materials. The recycled content breaks down by 31 percent post-consumer and 11 percent pre-consumer content.



The Mirra chair is up to **96 percent recyclable** at the end of its useful life.

MIRRA® CHAIR

- Every material has been scrutinised down to the molecular level.
- Steel components can be segregated and returned to the recycling stream as a technical nutrient.
- Most metal components are powder-coated, which eliminates solvents and volatile organic compounds (VOCs) from the finishing process.
- Plastic components are identified with an ASTM recycling code whenever possible, to aid in returning these materials to the recycling stream.
- No polyvinyl chloride (PVC) used; thermoplastic elastomer is used for arm skin.
- Moulded polymer back can be recycled up to 25 times.
- Aluminium can be recycled in a closed-loop system similar to steel.
- Foam and textile materials are part of an open-loop system and can be recycled into everything from automotive components to carpet padding at the end of their current life.
- Textiles used in Herman Miller products can be made from natural or synthetic fibres. Several textiles are available with 100 percent recycled content.
- *Returnable/Recyclable Packaging*—Packaging materials include corrugated cardboard and a polyethylene plastic bag; each is part of a closed-loop recycling system, for repeated recycling.
 - Whenever possible, shipments between Herman Miller and its suppliers include the use of pallets and other returnable packaging to minimise waste.
 - On large, disposable packaging can be replaced with reusable shipping blankets.

Manufacturing process

- *Green Energy and Emissions*—Mirra is manufactured in the US on a production line that utilises 100 percent green power, 50 percent from wind turbines, and 50 percent from captured landfill off-gassing. No air or water emissions are released in Mirra's production.
- *Waste*—All solid wastes are recycled to the greatest extent possible.
- *Worker Health and Safety*—Herman Miller strives to meet or exceed OSHA standards.
- *ISO*—Mirra is manufactured in West Michigan and UK at ISO 14001-certified sites.

HMPS

Herman Miller's commitment to operational excellence lead to an aggressive drive to reinvent its operations and established a fruitful relationship with the Toyota Supplier Support Centre. Through the Herman Miller Production System (HMPS), the company has dramatically reduced manufacturing space and inventories, cut lead times for standard product, and grown sales and profitability. HMPS minimises wasted effort, energy and materials, and plays an important part in Herman Miller's ongoing commitment to a better environment.

Product performance

- Easy assembly for cost-efficiency and quick parts replacement.
- Easy disassembly for recyclability.
- Number One design and environmental criteria: Durability.
- Backed up by Herman Miller's 12-year, 24 hour warranty (AireWeave 5 yrs, gas lift 3 yrs).

Corporate environmental policy

For more information on Herman Miller's Corporate Environmental Policy and other environmental efforts, visit the 'Environment' section of www.hmeurope.com

Supplier support

At Herman Miller, we are committed to working closely with our suppliers to reduce our collective impact on the environment. We not only encourage our suppliers to minimise their operations' environmental impacts, but require they assist us in decreasing our facilities' negative environmental effects, as well.