



New Think

New Think is a chair designed for the mobility of users in the workplace. It is smart, simple and sustainable.

New Think is

- Smart: because it does the New Thinking for us. It fosters wellbeing through automatic ergonomic support thanks to its advanced weight activated mechanism and new membrane of flexors. It responds to our changing postures and body movements, allowing us to get to work faster, making the most of our valuable sit time.
- Simple: because it is very easy to use. It anticipates our postures, while still giving users the freedom to customize it to their own personal preferences.
- Sustainable: because it can be easily disassembled with common hand tools making it easy to recycle at end of life, and it has undergone materials chemistry and develop with a life cycle vision to understand and minimize its lifelong impact on the environment. In addition, its back frame and base are composed of recycled materials (PA6)

The model chosen for analysis is the most representative line (reference 465A300) from the New Think range. Standard features on this model include:

- plastic base
- seat upholstery: "Atlantic"
- 4D armrests
- back upholstery without any foam: "3D"
- lumbar

This EPD – Environmental Product Declaration – is valid for the above reference.

Date of critical review: 07/2015

EPD Overview

Final Assembly Location

Final assembly of New Think is in Sarrebourg, France, by Steelcase, for the EMEA (Europe, Middle East and Africa) market.

Goal and Scope >

The potential environmental impacts of New Think (incl. packaging) throughout its entire life cycle – including raw materials extraction, production, transport, use, and end of life – were assessed using Life Cycle Assessment (LCA – ISO 14040 t/ 14044) in June 2015.

Life Cycle Inventory >

- list of materials
- inventory of resources
- inventory of emissions

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- environmental impacts

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Goal and Scope

The measurements found during the life cycle assessment help to guide best practice decisions and are the starting point for continuous improvement.

Both method and product may be subject to modifications, and the figures are subject to change without notice.

At Steelcase, our goal is to continuously improve the environmental performance of our products, and to consider each phase of the life cycle. Our findings in one product life cycle assessment may also lead to better decisions or best practices for other product lines.

The potential environmental impacts of New Think (incl. packaging) throughout its entire life cycle – including raw materials extraction, production, transport, use, and end of life – were assessed using Life Cycle Assessment (LCA – ISO 14040 / 14044) in June 2014.

Materials

This phase includes materials extraction and processing into useable materials. Benefits of recycled materials are considered here.

Production

This phase consists of all manufacturing and assembly taking place at Steelcase or their suppliers and sub-suppliers.

Transport

Upstream and downstream transports are considered, from materials extraction until handling for end-of life.

Use

The use phase is when the finished product is in its intended function – [no significant environmental impacts occur].

End of life

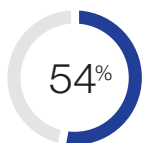
End-of-life product recyclability and local waste management infrastructure are considered. Benefits from recycling are not considered in this phase to avoid double counting.

The functional unit – i.e. the quantified performance of the product for use as a reference unit – used in the Life Cycle Assessment was chosen as “provision of comfortable office working – with the features stated in the product description – for 8 hours a day, 5 days a week, over 15 years.”

Environmental declarations may not be effectively comparable if evaluated against other products, or if the LCA methods were completed by different practitioners using different models.

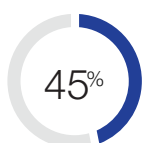
Life Cycle Inventory

New Think materials composition is listed below*.



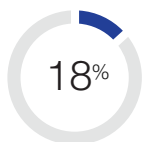
METALS

	kg	%
Steel	5.4	27.2
Aluminum	1.8	9.0
Zamak	0.1	0.3



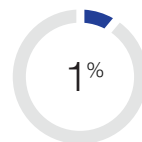
PLASTICS

	kg	%
PA 6 GF - polyamide 6 glass fiber	4.7	23.6
PP - polypropylene	2.2	11.4
PU foam - polyurethane	1.1	5.6
PET fabric - polyester fabric	0.3	1.3
POM - polyoxymethylene	0.2	1.2
LDPE - low density polyethylene - for packaging	0.1	0.7
PET - polyester	0.1	0.4
PA6 - polyamide 6	0.1	0.3
ABS - acrylonitrile butadiene styrene	<0.1	0.2
HDPE - high density polyethylene	<0.1	0.1
PA66 - polyamide 66	<0.1	<0.1
Synthetic rubber	<0.1	<0.1



WOOD BASED MATERIALS

	kg	%
Cardboard - for packaging	3.6	18.2



OTHER MATERIALS

	kg	%
Glass fiber	0.1	0.4

TOTAL WEIGHT - incl. packaging 19.8

*The list of materials does not contain all materials used in the product. (e.g. adhesives, coatings, residuals, etc.).

RESOURCES

This table inventories the most important energy and water consumption throughout the entire life cycle of New Think.

RENEWABLE ENERGY	
	MJ
Biomass	42
Hydropower	32
Wind	2

NON-RENEWABLE ENERGY	
	MJ
Gas	671
Oil	494
Coal	344

WATER	
	m ³
Water withdrawal	3.2

EMISSIONS

This table inventories the most important emissions to air, soil and water throughout the entire life cycle of New Think.

EMISSIONS TO AIR	
	kg
CO ₂ – Carbon dioxide (fossil)	99
CO ₂ – Carbon dioxide (biogenic)	6
SO ₂ – Sulfur dioxide	0.35
CH ₄ – Methane (fossil)	0.32
CO – Carbon monoxide (fossil)	0.32
NO _x – Nitrogen oxides	0.25

EMISSIONS TO SOIL	
	kg
Oils	0.020
Cl ⁻ - Chloride	0.017
Na - Sodium	0.005

EMISSIONS TO WATER	
	kg
SO ₄ ²⁻ - Sulfate	2.1
Cl - Chloride	1.8
Al - Aluminium	1.5

Life Cycle Impact Assessment

Based on the Life Cycle Inventory, the environmental impacts of New Think are assessed with the following impact categories:

Impact categories (selected by Steelcase)

- **Global warming** [kg CO₂-eq.]
Is due to emissions of greenhouse gases, causing the rise of the global temperature.
- **Respiratory inorganics** [kg PM2.5*-eq.]
Are due to small particles or dust that causes respiratory problems for humans with asthma or respiratory diseases.
*Particulate matter smaller than 2.5 micrometres in diameter.
- **Carcinogens** [kg C₂H₃Cl-eq.]
Describe substances or agents which may contribute to cancer.
- **Terrestrial ecotoxicity** [kg TEG* soil]
Measures the ecotoxicological factor for terrestrial ecosystems.
*Triethylene glycol
- **Non-renewable energy** [MJ primary]
Describes finite resources that will eventually dwindle, becoming too expensive or too environmentally damaging to extract.

Distribution of the environmental impacts for the respective life cycle stages:

The figures in this table are rounded up because the potential uncertainties don't justify the use of more than two significant digits.

Impact category	Unit	Total	Materials	Production	Transport	Use	End of life
Global warming	[kg CO ₂ -eq.]	110	58	34	7.9	No significant environmental impacts occur.	7.7
Respiratory inorganics	[kg PM2.5-eq.]	0.087	0.051	0.022	0.013		0.00094
Carcinogens	[kg C ₂ H ₃ Cl-eq.]	7.3	5.7	1.5	0.052		0.088
Terrestrial ecotoxicity	[kg TEG soil]	2500	1200	1000	250		16
Non-renewable energy	[MJ primary]	1800	1100	630	130		8.6

Product Environmental Information (PEP)

For more information

Our Product Environmental Profile (PEP) – an environmental declaration according to the objective of ISO 14021 – can be found on [Steelcase.com](https://www.steelcase.com)

The PEP provides precise, accurate, verifiable and relevant information on the sustainability aspects of New Think, including:

- Life cycle performance
- Materials
- Recycled materials and recyclability
- Certificates
- LEED contribution

Verification Process and References

The LCA study of New Think (reference: 465A300 05 STD 05 15 65H H01 00) was carried out by Steelcase, according to ISO 14040 / 14044 and based on previous collaboration with the Technical University of Denmark (DTU) and Quantis. It was then critically reviewed by Michael Hauschild from the Department of Management Engineering of the DTU.

The independent verification of this EPD was carried out by the Department of Management Engineering of the DTU in accordance with ISO 14025.

Disclaimer: In the absence of a relevant Product Category Rule (PCR), Steelcase developed a set of specific rules, requirements and guidelines to perform life cycle assessments and Type III environmental declarations, according to the objectives of ISO 14025.

References

Related ISO standards:

- ISO 14025 Environmental labels and declarations – Type III environmental declarations
- ISO 14040:2006 Environmental management – Life cycle assessment – Principles and framework
- ISO 14044:2006 Environmental management – Life cycle assessment – Requirements and guidelines

LCIA method and LCI database:

- ILCD HANDBOOK, European Commission, Joint Research Centre, Institute for Environment and Sustainability. ILCD Handbook: General Guide for Life Cycle Assessment – Detailed Guidance. European Union, March 2010, 394p.
- IMPACT 2002+ V2.10 method: JOLLIET, O., MARGNI, M., CHARLES, R., HUMBERT, S., PAYET, J., REBITZER, G. et ROSENBAUM, R. (2003). IMPACT 2002+: A New Life Cycle Impact Assessment Methodology. International Journal of Life Cycle Assessment 8(6) p.324-330.
- Eco-Invent v2.2 LCI database: Swiss Centre for Life Cycle Inventories, Duebendorf, CH - www.ecoinvent.ch

End-of-life scenario:

- Mainly based on Eurostat data for the European market
http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/data/wastemanagement/waste_treatment

Contact

For further questions, please contact: epd@steelcase.com

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