Let's B

Environmental Product Declaration

- An environmental declaration according to the objectives of ISO/TR 14025.
- A presentation of the Life Cycle Assessment results (ISO 14040 / 14044) based on the 2010 recommendations of the European Commission.

ENVIRONMENTAL PRODUCT DECLARATION

EPD

Product Description

Let's B task chair range offers two versions : Let's B mid backrest and Let's B high backrest. The range is designed to provide three major benefits: "comfort", "intuitivity" and "personalization".

The model chosen for analysis is the most frequently ordered one (reference 469 IM 060) from the **Let's B mid backrest** range.

Standard features on this model include:
- Seat height adjustment
- Seat depth adjustment
- Back height adjustment
- Tilt tension adjustment
- Upright position lock
- 2D adjustable armrests
- Impress upholstery
- Standard base

Producer

Designed by Steelcase, **Let's B** is made by Steelcase in Sarrebourg (FR) for the EMEA (Europe, Middle East and Africa) market.

Steelcase has management systems for quality (ISO 9001), for the environment (ISO 14001 and/or EMAS II) and for health and safety (OHSAS 18001), ensuring that customers are guaranteed the same level of product performance wherever it is made in Europe.

Steelcase has a multi-site PEFC (Program for the Endorsement of Forest Certification schemes) certification for all its production facilities in Europe. This certification acknowledges that the wood used in the products has been sourced from forests managed in a sustainable way.

To show continuous improvements, Steelcase communicates the environmental performance of its products through voluntary environmental labels and declarations. Sustainability related actions and results are annually communicated in the annual Steelcase Corporate Responsibility report.

For further information see **steelcase.com**

Steelcase

Material Declaration

Let's B consists of the materials listed below. The total weight is 19.773 kg including packaging.

Metals	kg	%
Steel	7.396	37.4
Aluminium	0.015	0.1
Stainless steel	0.006	<0.1

Other materials	kg	%
Cardboard (for packaging)	2.520	12.7
Polyester	0.312	1.6
Coating powder	0.023	0.1
Rubber	0.005	<0.1

Plastics	kg	%
PA6 FG – polyamide 6 with fibreglass	4.060	20.5
PP – polypropylene	1.872	9.5
PP talc – polypropylene with talc	1.216	6.2
PU foam – polyurethane foam	1.072	5.4
PP FG – polypropylene with fibreglass	0.448	2.3
PA66 FG – polyamide 66 with fibreglass	0.415	2.1
LDPE – low density polyethylene (for packaging)	0.132	0.7
POM – polyoxymethylene	0.130	0.7
PA6 – polyamide 6	0.080	0.4
ABS – acrylonitrile butadiene styrene	0.061	0.3
PC – polycarbonate	0.005	<0.1
PA66 – polyamide 66	0.004	<0.1

Environmental Product Declaration

The potential environmental impacts of **Let's B** (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 August, 2012. This product declaration is valid for the product made in Sarrebourg (FR).

Those measurements are the starting point for the continuous improvement of our product. Both method and product may have been subject to modifications since then. Different Environmental Product Declarations may not be comparable.

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 seating – with the features stated in the product – for an average person (45 – 110 kg) for 8 hours a day, 5 days a week over a lifetime period of 15 years".

Life Cycle Inventory Analysis

The Life Cycle Inventory Analysis covers all life cycle stages as shown below.

Materials

This stage includes raw materials extraction and transformation into material ready to be used. Benefits of recycled materials are considered.

Production

This stage comprises all production and assembly processes taking place at Steelcase or at their suppliers and sub-suppliers.

Transport

The following transports are considered: transport from sub-suppliers to Steelcase production site(s), from Steelcase to the EMEA market (Europe, Middle East and Africa) and transport for end-of life treatments.

Use

During the use stage of the product - the longest stage of the life cycle - no relevant environmental impacts occur.

End of life

End-of-life products treatments are included: based on current European averages and the specific abilities for disassembly of this product, it was assumed that about 53% of the products are sent to landfill, 33% are incinerated and 14% are recycled at the end of their useful life. Benefits from recycling are considered as neutral to avoid double counting.

Distribution of the environmental impacts for the relevant life cycle stages

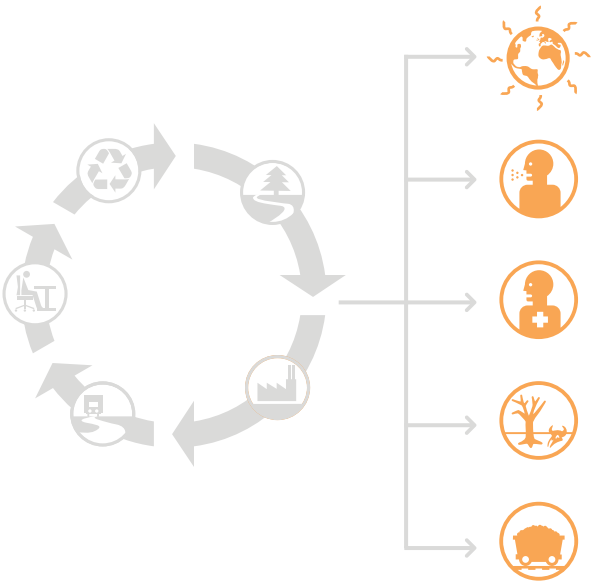
	Category	Unit	Total	Materials	Production	Transport	Use	End of life
	Global warming	[kg CO_2-eq.]	120	72	31	9.5	No relevant environmental impacts occur	9.6
	Respiratory inorganics	[kg PM2.5-eq.]	0.11	0.063	0.029	0.013	No relevant environmental impacts occur	0.0011
	Carcinogens	[kg C_2H_3Cl-eq.]	5.4	3.6	1.6	0.048	No relevant environmental impacts occur	0.10
	Terrestrial ecotoxicity	[kg TEG soil]	1700	890	430	350	No relevant environmental impacts occur	11
	Non renewable energy	[MJ primary]	2100	1400	550	150	No relevant environmental impacts occur	9.6

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

ENVIRONMENTAL PRODUCT DECLARATION **EPD**

Life Cycle Assessment

Environmental impact categories.



Global warming

is due to emissions of greenhouse gases, causing the rise of the global temperature.
[kg CO_2-eq.]

Respiratory inorganics

is due to small particles or dust that causes respiratory problems (and death) for humans with asthma or respiratory diseases.
[kg PM2.5*-eq.]
**Particulate Matter Smaller than 2.5 Micrometers in Diameter*

Carcinogens

describes substances or agents which may contribute to cause cancer.
[kg C_2H_3Cl-eq.]

Terrestrial ecotoxicity

measures the ecotoxicological factor for terrestrial ecosystems.
[kg TEG* soil]
** Triethylene Glycol*

Non renewable energy

describes finite resources that will eventually dwindle, becoming too expensive or too environmentally damaging to retrieve.
[MJ primary]

Environmental aspects of Let's B's life cycle

The contributions of inventory parameters to different impact categories throughout the entire life cycle of **Let's B** are listed below.

Category		Inventory parameter*	Inventory value**	Unit	Characterised impact value	Unit
Global warming					**Total** **120**	**kg CO_2-eq.**
	CO_2	Carbon dioxide, fossil	111	kg	94.2	%
	CH_4	Methane, fossil	483	g	2.8	%
	N_2O	Dinitrogen monoxide	19	g	2.4	%
Respiratory inorganics					**Total** **0.11**	**kg PM2.5-eq.**
	NO_x	Nitrogen oxides	324	g	38.7	%
	PM 2.5	Particulates < 2.5 µm	36	g	33.4	%
	SO_2	Sulfur dioxide	335	g	24.5	%
Carcinogens					**Total** **5.4**	**kg C_2H_3Cl-eq.**
	HC	Hydrocarbons, aromatic	1.6	g	91.3	%
		Dioxin, 2,3,7,8 Tetrachlorodibenzo-p-	$1.4*10^{-7}$	g	4.4	%
	Cr	Chromium	0.72	g	1.6	%
Terrestrial ecotoxicity					**Total** **1700**	**kg TEG soil**
	Al	Aluminium	111	g	34.2	%
	Zn	Zinc	0.25	g	34.0	%
	Cr	Chromium	0.72	g	16.4	%
Non renewable energy					**Total** **2100**	**MJ primary**
		Gas, natural, in ground	19	m^3	36.9	%
		Oil, crude, in ground	15	kg	33.0	%
		Coal, hard, unspecified, in ground	18	kg	16.6	%

* In each category, we considered the three most important inventory parameters.
** The inventory value represents the total emissions of a substance or resource input.

Additional environmental information

Life cycle

During our products development process we consider each stage of the life cycle: from materials extraction, production, transport, use and reuse, until the end of its life.

Materials
- 6% recycled materials*, by weight (2% pre-consumer + 4% post-consumer).
- Packaging with 100% recycled cardboard.

Production
- Made in Sarrebourg (FR) by Steelcase.
- Uses powder-coat paints: VOC-free and free of heavy metals. Unused paint that does not attach to the product can be directly reused in the process.
- Uses water-based urethane foam.

Transport
- Made in Europe, close to customers.
- Ecosmart packaging to keep transport volumes as low as possible and improve filling rates.

Use
- Designed for a long product life, with replaceable parts.
- Limited substances harmful to health and indoor air quality.
- Maintenance information available on steelcase.com

End of life
- 93% theoretically recyclable by weight. According to the current waste disposal schemes, we assume that 69% can be effectively recycled.
- 100% theoretically recyclable cardboard and LDPE film for packaging.
- Plastic parts clearly labelled for easy sorting and effective recycling.
- Designed to ensure responsible end of use strategies - refurbishing, charitable donation or recycling.

Certifications

We communicate our products' environmental performance through voluntary environmental labels and declarations.

On products

This product is **NF Environnement** certified, meaning it complies with the 20 product lifecycle criteria set by the ISO 14024.

This product is **NF OEC** (Office Excellence Certifié) certified, meaning it complies with safety, ergonomic, environmental and social requirements.

In Europe this product is **Indoor Advantage Gold** certified, meaning it complies with indoor air quality emission requirements.

On materials

A selection of pure wool and polyester fabrics are labelled with the **Oeko-Tex 100** "Confidence in textiles" Standard, guaranteeing that limit values in substances are respected.

A selection of pure wool fabric are labelled with the **European Ecolabel**, guaranteeing that the textile meets stringent quality and environmental performance criteria.

A selection of textiles complies with the **C2C** certification, delivered by MBDC.

On plant

ISO 14001 Environmental management system.

OHSAS Occupational Health and Safety Assessment Series management system.

** Calculations of recycled content are based on data provided by professional organizations, suppliers and other available information. Steelcase makes conservative assumptions when compiling this information to provide the most accurate recycled content calculations possible but variability in market conditions or manufacturing processes may result in higher or lower content. This document will be reviewed and updated periodically and is subject to change without notice.*

Compilation and Verification Process

- The LCA study of **Let's B** (code: 469 IM 060) was carried out by Steelcase, according to ISO 14040 / 14044 and based on previous collaboration with Quantis (located in Lausanne, Switzerland and Boston, USA). It was then critically reviewed by Michael Hauschild from the Department of Management Engineering of the DTU (Technical University of Denmark) in Copenhagen.
- The independent verification of the environmental declaration (EPD – ISO/TR 14025) was carried out by the Department of Management Engineering of the DTU (Technical University of Denmark).

References

Related ISO standards
- ISO/TR 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+ 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
- Mainly based on EPA data for the American market - http://www.epa.gov/osw/nonhaz/municipal/pubs/msw_2010_rev_factsheet.pdf

Contact

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