INVISION

J+J FLOORING GROUP

Environmental Product Declaration

PremierBac® Plus Backing

As a smaller, highly integrated, privately-owned manufacturer, J+J Flooring Group has the flexibility to easily monitor and modify our footprint while pursuing innovative sustainable practices. As a company we believe that products should be evaluated holistically using a multi-attribute approach, rather than focusing on single product attributes or certifications. With conservation as the core of our sustainability initiatives, we've developed aggressive goals on energy and emissions reduction, water conservation, recycled content and waste minimization using a multi-attribute approach, rather than focusing on single product attributes or certifications.

SUSTAINABILITY CERTIFIED NSF Environmental Product Declaration

INVISION

J+J FLOORING GROUP

PremierBac® Plus

Broadloom Commercial Floor Covering

INVISION | 818 J&J Drive, PO Box 1287, Dalton, GA 30722 | 1 800 241 4586 | jj-invision.com

ENVIRONMENTAL PRODUCT DECLARATION VERIFICATION

EPD INFORMATION

PROGRAM OPERATOR NSF International

DECLARATION HOLDER **J+J Flooring Group** 818 J&J Drive, Dalton GA 30722 PO Box 1287

PRODUCT	DATE OF ISSUE	PERIOD OF VALIDITY	DECLARATION NUMBER
PremierBac® Plus	April 21, 2014	5 years	EPD10027

This EPD was independently verified by NSF International in accordance with ISO 14025:

SIGNATURE OF REPRESENTATIVE

☐ Internal ☒ External

NAME OF REPRESENTATIVE
Thomas J. Bruursema

CONTACT INFORMATION FOR REPRESENTATIVE
bruursema@nsf.org

This life cycle assessment was independently verified by in accordance with ISO 14044 and the reference PCR:

SIGNATURE OF REPRESENTATIVE

NAME OF REPRESENTATIVE
Jack Geibig

CONTACT INFORMATION FOR REPRESENTATIVE
jgeibig@ecoform.com

LCA INFORMATION

Basis LCA

TITLE OF LCA J&J Industries Inc. LCA Report: Fiscal year 2012

DATE OF ISSUE April 21, 2014

LCA Preparer

NAME OF PREPARER Brad McAllister

ORGANIZATION OF PREPARER
WAP Sustainability Consulting

CONTACT INFORMATION FOR PREPARER
brad@wapsustainability.com

This life cycle assessment was critically reviewed in accordance with ISO 14044 by:

NAME OF CRITICAL REVIEWER
Jack Geibig

ORGANIZATION OF REVIEWER
Ecoform

CONTACT INFORMATION FOR REVIEWER
jgeibig@ecoform.com

PCR INFORMATION

PROGRAM OPERATOR	NSF International
REFERENCE PCR	Flooring: Carpet, Resilient, Laminate, Ceramic, Wood
DATE OF ISSUE	April 21, 2014

PCR review was conducted by:

NAME OF CHAIR
Dr. Michael Overcash

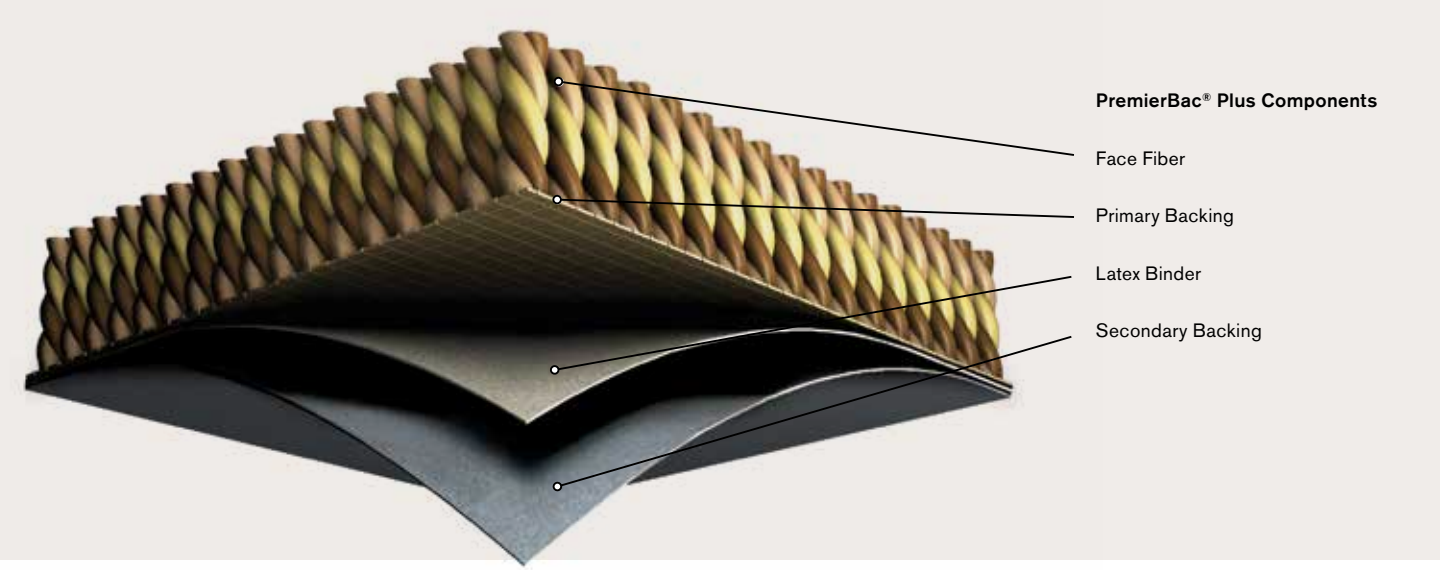
ORGANIZATION OF CHAIR
Environmental Clarity

CONTACT INFORMATION FOR CHAIR
mrovercash@earthlink.net

PremierBac® Plus

PRODUCT DESCRIPTION

Broadloom Carpet with latex based backing chemistry. Carpet face composition may include either Nylon 6,6 or Nylon 6 fibers that have been dyeing using beck dyeing, space dyeing and/or solution dying techniques. Product contains both pre–consumer and post–consumer recycled content. Product is manufactured at plants in Dalton, Georgia..



Applicability

Product is intended for use as a soft floor covering in medium-to-high traffic commercial applications.

Environmental Product Declaration Program Operator
NSF International
789 N. Dixboro Rd.
Ann Arbor MI 48105 USA
www.nsf.org

Date of Issue: April 21, 2014
Period of Validity: 5 years
Declaration#: EPD10027

PRODUCT CHARACTERISTICS

Type of manufacture	Broadloom Carpet	
Yarn type	Nylon (either 6 or 6.6). 20-37 oz/yd^2	
Additional characteristics per NSF/ANSI 140	Available Reclamation Program	
Sustainable certifications	Certified Gold to NSF/ANSI140	
VOC emissions test method	Green Label Plus (GLP)	
CRI- TARR rating	≤ 3.5	
CHARACTERISTICS	**NOMINAL VALUE**	**UNIT**
Total thickness	6.40 – 14.9 (0.192 - 0.447)	mm (inch)
Product weight	1675 - 2178 (60-78)	g/m^2 (oz/yd^2)
Surface pile thickness	2.51 – 8.98 (0.099 – 0.354)	mm (inch)
Number of tufts or loops /dm^2	8.0 – 12.6 (6.45 - 9.74)	dm^2 (in^2)
Surface pile weight	558 - 1154 (20 -32)	g/m^2 (oz/yd^2)
Pile fiber composition	100% N6 or 100% N6.6	%
Secondary backing	PemierBac® Plus (Latex Broadloom)	Thermoplastic

List of Product Standards

TEST	RESULT
AATCC2 Test Method 134-2011 Electrostatic Propensity of Carpets (Normative value ≤ 3.5 KV)	≤ .7 KV
AATCC2 Test Method 16-2004 Colorfastness to Light (minimum grade 4 at 40 AFU)	Met minimum grade = 5
ASTM6 E648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source	Class 1, > 0.45
ASTM6 E662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials	< 450
ASTM6 D5252 Standard Practice for the Operation of the Hexapod Tumble Drum Tester	3
ASTM6 D7330 Standard Test Method for Assessment of Surface Appearance Change in Pile Floor Coverings Using Standard Reference Scales	3.5
ISO14 2551/ ASTM6 Dimensional Stability (Modular Tiles Only)	NA

AVERAGE MATERIAL CONTENT

COMPONENT	MATERIAL	MASS %	AVAILABILITY			ORIGIN OF RAW MATERIALS
			RENEWABLE	NON-RENEWABLE	RECYCLED	
Pile Material	Nylon 6	27%		80% Fossil resource, limited	20% Recycled content	US
	Nylon 6,6	12%		Fossil resource, limited		US
Primary Backing	Polypropylene	10%		Fossil resource, limited		US
Secondary Backing	VAE	10%		Fossil resource, limited		US
	ATH	16%		Fossil resource, limited		US
	Calcium Carbonate	21%		Mineral, abundant	47% Recycled content	US
	Glass Cullet	5%			100% Recycled content	US

Production of main materials

Nylon 6,6: A synthetic fossil based polymer synthesised by polycondensation of hexamethylenediamine and adipic acid.

Nylon 6: A synthetic fossil based polymer synthesized by ring opening polymerization of caprolactam.

Polypropylene: A synthetic fossil based polymer produced from the polymerization of propylene.

Vinyl Acetate Ethylene Copolymers (VAE) Latex: Class of synthetic rubber that is derived from ethylene and vinyl acetate.

Aluminum hydroxide (ATH): Inorganic mineral substance manufactured by dissolving bauxite in sodium hydroxide at temperatures up to 270°C.

Calcium Carbonate: A common substance found in rocks in all parts of the world, primarily extracted through mining or quarrying.

Glass Cullet: Finely ground recycled glass from Post-consumer sources such as bottles.

LIFE CYCLE ASSESSMENT STAGES AND REPORTED EPD INFORMATION

Sourcing/Extraction (Raw Material Acquisition) Stage

The exact route will vary based on each individual raw material's specific supply chain. In general, a material begins via extraction from the Earth or from pre- or post-consumer recycled feedstock and moves through a series of processing steps prior to being received at a manufacturing facility. Processing may include the addition or removal of supplmental materials and/or by-products. A series of transportation steps are required to move intermediate goods between facilities. Transportation modes may include truck, rail, sea freight and/or air.

Manufacturing Stage

The manufacturing process involves first extruding nylon raw material into fiber (1), and then processing the fiber into yarn (2). Once the yarn is manufactured, the next steps in the manufacturing process include tufting the yarn onto the primary backing (3), followed by dyeing as needed (4). After the intermediate goods are colored as specified, then they are finished (5) and finally packaged for final shipment (6).

HEALTH, SAFETY, AND ENVIRONMENTAL ASPECTS DURING PRODUCTION

- ISO14001 Environmental Management System
- Compliance with local, state and federal regulations relating to the environment and workplace safety
- Part of corporate Design for Environment program of J+J Flooring Group
- Meets requirements within the Public Health and Environment section of NSF140
- Corporate workplace safety program
- Utilization of LEAN manufacturing principles for the reduction of waste during production

PRODUCTION WASTE

J+J Flooring Group strives to reduce all production waste through increased efficiency and utilization of raw materials. Any remaining waste that is generated is reclaimed and reused in the manufacturing process or sent to recycling partners. J+J Flooring Group has a strategic goal to be landfill free by 2020.

Delivery and installation stage

DELIVERY

J+J Flooring Group is provided to both the domestic and international marketplace. Domestic shipments are typically completed by truck, whereas international shipments utilize ocean freight and truck. The delivery distance to each job site is project specific and J+J Flooring Group requests that customers contact their sales representative for details regarding delivery options.

INSTALLATION

It is recommended that the installation of carpet be accomplished through the use Commercialon® Premium Carpet Adhesive. Full instructions regarding installation of carpet are provided in the J+J Flooring Group's Carpet Installation handbook located at:
http://www.jj-invision.com/pages/technical-carpet-installation-maintenance

HEALTH, SAFETY AND ENVIRONMENTAL ASPECTS DURING INSTALLATION

Adhesives used during installation meet the requirements of California South Coast Air Quality Management District Rule #1168 or are in accordance with the emissions requirements in California Department of Public Health Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers,Version 1.1, February 2010 (also known as CA 01350 or may be referenced as Floor-Score or Green Label Plus approved).
The MSDS's for installation adhesives can be viewed at:
http://www.jj-invision.com/pages/premium-carpet-adhesive

INSTALLATION WASTE

Packaging waste generated during the installation phase can be recycled with local recycling options. For more details regarding J+J Flooring Group's Carpet Reclamation program, please call 1.800.241.4586 or visit:
http://www.jj-invision.com/pages/Carpet-Reclamation/

PACKAGING

Prior to shipping, broadloom carpet is rolled on cardboard cores, protected with thin film plastic stretch wrap (LLDPE) and labeled. All packaging materials are recyclable through local recycling options.

Use Stage

USE OF THE FLOOR COVERING

The reference service life of J+J Flooring Group carpet is 15 years, although J&J's carpet may be replaced sooner due to changes in fashion. We are proud to offer to the market a limited lifetime warranty on most of our products.

CLEANING AND MAINTENANCE

The LCA was modeled with the following cleaning and mantenance assumptions::

LEVEL OF USE	CLEANING PROCESS	CLEANING FREQUENCY (TIMES / YEAR)	CONSUMPTION OF ENERGY AND RESOURCES
Commercial	Vacuum Cleaning	4 times / week	Electrical Energy
	Rinse Cleaning	2 times / year	Electrical Energy, Water
	Deep Cleaning (extraction)	2 times / year	Electrical Energy, Water, cleaning agent.

STRUCTURAL DAMAGE

Carpet should not be installed until all structural damage has been adequately repaired and determined to be code compliant.

End of Life Stage

RECYCLE, REUSE, OR REPURPOSE

It is recommended that customers utilize J+J Flooring Group's carpet reclamation program for the recycling of J+J Flooring Group carpet. To initiate the carpet reclamation process, please call 1.800.241.4586 or visit:
http://www.jj-invision.com/pages/Carpet-Reclamation/

DISPOSAL

Recycling of J+J Flooring Group's carpet is recommended. However, carpet can be disposed of in municipal landfills or sent to waste-to-energy facilities (subject to local regulations). To maintain a conservative LCA approach, end of life options included landfill disposal, waste-to-energy, and reclamation/recycling. Rates of each option were based on research and public reporting of the Carpet America Recovery Effort (CARE).

LIFE CYCLE ASSESSMENT (LCA)

General

A cradle-to-grave life cycle assessment (LCA) was conducted in accordance to the ISO14040/14044 series of standards. Additionally, external third parties critically reviewed the LCA study. The LCA assessed the Sourcing/Extraction, Manufacturing Delivery and Installation, Use, and End-of-life stages of the product's life cycle.

Description of the functional unit

The functional unit is 1 square meter of carpet. The service life of the carpet is 15 years.

Cut-off criteria

Excluded materials met the following criteria:

- Less than 1% of the total mass of the final product.
- Less than 1% of the total energy flows.
- Total excluded materials did not exceed 5% of final product.
- Were identified as not having disproportionally high environmental impact.

Allocation

Background data used in the LCA model may contain some allocation. Primary data for J+J Flooring Group production was not allocated.

Background data

The LCA was modeled using the GaBi 6 software platform. Background data was typically sourced from PE International datasets, although some data from PlasticsEurope and the USLCI database were utilized when appropriate PE datasets were not available.

Data quality

Time Related Coverage: All gate-to-gate manufacturing data was sourced from J+J Flooring Group's records for 2012. The time coverage of background data is adopted from the specific datasets utilized in the model. Priority was given to the most up-to-date dataset available at the time the model was created. No background data is more than 10 years old.

Geographical Coverage: All gate-to-gate manufacturing data are specific to J+J Flooring Group's locations and have been verified through third-party certification programs. The Geographical Coverage background data is adopted through the use of the specific datasets utilized in the model. In general, domestic data were preferred, however the absence of US specific data required some international data to be utilized.

Technology coverage: Data utilized in the model represent the most current technology.

System boundaries

The LCA of 1 M^2 of J+J Flooring Group's carpet includes:

- Sourcing/Extraction Stage
- Manufacturing Stage
- Delivery and Installation Stage
- Use Stage
- End of Life Stage

Notes on use stage

Carpet manufactured by J+J Flooring Group carries a limited lifetime warranty. While the actual lifetime of the carpet is contingent on several factors, including changing style preference and building traffic, J+J Flooring Group has assumed a 15 year service life in the LCA model. Results are presented for a single year of use, as well as for a 60-year reference service life of a building.

Results of Assessment

LIFE CYCLE INVENTORY ANALYSIS

Face Fiber Weight	20 OZ / SY	23 OZ / SY	37 OZ / SY
Primary Energy - Non-Renewable (MJ)	**176.08**	**193.21**	**273.12**
Lignite (%)	0.66%	0.67%	0.69%
Mineral Coal (%)	13.41%	13.14%	12.34%
Natural Gas (%)	39.67%	39.11%	37.42%
Oil (%)	39.72%	40.66%	43.49%
Nuclear (%)	6.54%	6.41%	6.06%
Primary Energy - Renewable (MJ)	**33.93**	**37.82**	**55.97**
Hydropower (%)	2.74%	2.70%	2.59%
Windpower (%)	91.52%	91.80%	92.88%
Solar Energy (Solar Power, Biomass) (%)	5.41%	5.08%	4.19%
Geothermics (%)	0.33%	0.33%	0.34%
Secondary Fuels (MJ)	**0**	**0**	**0**
Non-Renewable Material Sources (kg)	**7.18**	**7.72**	**10.25**
Output Flows			
Non-Hazardous Waste (kg)	6.3	6.84	9.33
Hazardous Waste (kg)	0	0	0

LIFE CYCLE IMPACT ASSESSMENT

CML2001 - NOV. 2010 RESULTS

Table A

The Flooring: Carpet, Resilient, Laminate, Ceramic, Wood PCR is currently under expert review. It is expected that this review will conclude that *Table A: Life Cycle Impacts for a One Year Use Stage* will no longer be necessary in future EPDs. The absence of Table A in this EPD is recognized by NSF as an appropriate deviation from the PCR.

Table B

Life Cycle Stage Impacts for a Building Life of 60 Years

Face Fiber Weight: 23oz/ SY	Units	TOTAL		SOURCING		MANUFACTURE		DELIVERY & INSTALLATION		USE		END OF LIFE	
CML IMPACT CATEGORIES													
Global Warming (GWP)	kg CO_2 eq.	77.1	100%	34.5	45%	8.5	11%	1.8	2%	30.8	40%	1.4	2%
Acidification (AP)	kg SO_2 eq.	0.24	100%	0.08	34%	0.04	18%	0.01	2%	0.11	46%	0.000	0%
Ozone Depletion (ODP)	kg CFC-11 eq.	7.84E-07	100%	5.39E-08	7%	7.18E-07	92%	6.33E-11	0%	1.23E-08	2%	2.24E-10	0%
Smog (POCP)	kg C_2H_4 eq.	0.021	100%	0.011	54%	0.002	12%	-0.0002	-1%	0.007	35%	0.0002	1%
Eutrophication (NP)	kg PO_4 eq.	0.021	100%	0.012	54%	0.002	10%	0.001	5%	0.005	26%	0.001	6%
Abiotic Depletion (ADP)	kg SB eq.	7.19E-05	100%	6.01E-05	84%	9.10E-06	13%	3.68E-07	1%	2.29E-06	3%	-9.52E-09	0%

Breakdown of Use Stage Impacts

	TOTAL %	ANNUAL ACTIVITIES	INTERMITENT ACTIVITIES
Global Warming	100%	100%	0%
Acidification	100%	100%	0%
Ozone Depletion	100%	100%	0%
Smog	100%	100%	0%
Eutrophication	100%	100%	0%
Abiotic Depletion	100%	100%	0%

	Units	20 OZ / SY	23 OZ / SY	37 OZ / SY
CML IMPACT CATEGORIES				
Global Warming (GWP)	kg CO_2 eq.	72.6	77.1	97.9
Acidification (AP)	kg SO_2 eq.	0.23	.024	0.29
Ozone Depletion (ODP)	kg CFC-11 eq.	7.34E-07	7.84E-07	1.02E-06
Smog (POCP)	kg C_2H_4 eq.	0.020	0.021	0.027
Eutrophication (NP)	kg PO_4 eq.	0.020	0.021	0.029
Abiotic Depletion (ADP)	kg SB eq.	6.92E-05	7.19E-05	8.46E-05

TRACI RESULTS

Table A

The Flooring: Carpet, Resilient, Laminate, Ceramic, Wood PCR is currently under expert review. It is expected that this review will conclude that *Table A: Life Cycle Impacts for a One Year Use Stage* will no longer be necessary in future EPDs. The absence of Table A in this EPD is recognized by NSF as an appropriate deviation from the PCR.

Table B

Face Fiber Weight: 23 oz / SY	Units	TOTAL		SOURCING		MANUFACTURE		DELIVERY & INSTALLATION		USE		END OF LIFE	
TRACI IMPACT CATEGORIES													
Global Warming (GWP)	kg CO_2 eq.	76.4	100%	34.5	45%	8.7	11%	1.6	2%	30.9	40%	.8	1%
Acidification (AP)	kg SO_2 eq.	0.23	100%	0.08	36%	0.04	17%	0.01	3%	0.10	44%	0.000	0%
Ozone Depletion (ODP)	kg CFC-11 eq.	8.54E-07	100%	5.90E-08	7%	7.82E-07	92%	6.78E-11	0%	1.30E-08	2%	2.45E-10	0%
Smog (POCP)	kg C_2H_4 eq.	2.757	100%	1.413	51%	0.381	14%	0.110	4%	0.840	30%	0.013	0%
Eutrophication (NP)	kg PO_4 eq.	0.049	100%	0.043	87%	0.001	3%	0.000	1%	0.004	9%	0.001	1%

	TOTAL %	ANNUAL ACTIVITIES	INTERMITENT ACTIVITIES
Global Warming	100%	100%	0%
Acidification	100%	100%	0%
Ozone Depletion	100%	100%	0%
Smog	100%	100%	0%
Eutrophication	100%	100%	0%

Results for Low, Medium, and High Face Weight

	Units	20 OZ / SY	23 OZ / SY	37 OZ / SY
TRACI IMPACT CATEGORIES				
Global Warming (GWP)	kg CO_2 eq.	72.0	76.4	97.2
Acidification (AP)	kg SO_2 eq.	0.22	0.23	0.29
Ozone Depletion (ODP)	kg CFC-11 eq.	8.00E-07	8.54E-07	1.11E-06
Smog (POCP)	kg C_2H_4 eq.	2.577	2.757	3.596
Eutrophication (NP)	kg PO_4 eq.	0.045	0.049	0.072

ADDITIONAL ENVIRONMENTAL INFORMATION

- NSF 140 Gold Certification
- CRI Green Label Plus Certification
- Available post-consumer reclamation options.
- J+J Flooring Group operates under an all-inclusive Environmental Action (EnAct®) Program whereby all associate and corporate environmental activities are measure and improved.
- J+J Flooring Group offers sample returns under its R4 Program, a subset of J+J's EnAct efforts.
- J+J Flooring Group proudly offers to the market an annual, transparent Sustainable Progress Report. Please see the following website for more details: http://www.jj-invision.com/pages/sustainability-report

PremierBac Plus Broadloom Backing, Life Cycle Impacts for a Building Life of 60 Years Across Available Face Weights

CML IMPACT CATEGORIES	oz / sy	20	21	22	23	24	25	26	27	28
Global Warming (GWP)	kg CO_2 eq.	72.6	74.1	75.6	77.1	78.6	80.1	81.6	83.0	84.5
Acidification (AP)	kg SO_2 eq.	0.228	0.232	0.236	0.240	0.244	0.247	0.251	0.255	0.259
Ozone Depletion (ODP)	kg CFC-11 eq.	7.34E-07	7.51E-07	7.67E-07	7.84E-07	8.01E-07	8.17E-07	8.34E-07	8.51E-07	8.67E-07
Smog (POCP)	kg C_2H_4 eq.	0.0198	0.0202	0.0206	0.0210	0.0214	0.0218	0.0222	0.0226	0.0230
Eutrophication (NP)	kg PO_4 eq.	0.0200	0.0205	0.0210	0.0215	0.0220	0.0225	0.0230	0.0235	0.0240
Abiotic Depletion (ADP)	kg SB eq.	6.92E-05	7.01E-05	7.10E-05	7.19E-05	7.28E-05	7.37E-05	7.46E-05	7.55E-05	7.64E-05
Primary Energy - Non-Renewable	MJ	176.08	181.79	187.50	193.21	198.92	204.62	210.33	216.04	221.75
Primary Energy - Renewable	MJ	33.93	35.22	36.52	37.82	39.11	40.41	41.71	43.00	44.30
Secondary Fuels	MJ	0	0	0	0	0	0	0	0	0
Non-Renewable Material Sources	KG	7.18	7.36	7.54	7.72	7.90	8.08	8.26	8.44	8.62
Non-Hazardous Waste	KG	6.30	6.48	6.66	6.84	7.02	7.19	7.37	7.55	7.73
Hazardous Waste	KG	0	0	0	0	0	0	0	0	0

CML IMPACT CATEGORIES	oz / sy	29	30	31	32	33	34	35	36	37
Global Warming (GWP)	kg CO_2 eq.	86.0	87.5	89.0	90.5	92.0	93.5	95.0	96.5	97.9
Acidification (AP)	kg SO_2 eq.	0.262	0.266	0.270	0.274	0.278	0.281	0.285	0.289	0.293
Ozone Depletion (ODP)	kg CFC-11 eq.	8.84E-07	9.01E-07	9.17E-07	9.34E-07	9.51E-07	9.67E-07	9.84E-07	1.00E-06	1.02E-06
Smog (POCP)	kg C_2H_4 eq.	0.0234	0.0238	0.0242	0.0246	0.0250	0.0254	0.0258	0.0262	0.0266
Eutrophication (NP)	kg PO_4 eq.	0.0245	0.0250	0.0255	0.0260	0.0265	0.0271	0.0276	0.0281	0.0286
Abiotic Depletion (ADP)	kg SB eq.	7.73E-05	7.82E-05	7.92E-05	8.01E-05	8.10E-05	8.19E-05	8.28E-05	8.37E-05	8.46E-05
Primary Energy - Non-Renewable	MJ	227.46	233.16	238.87	244.58	250.29	256.00	261.71	267.41	273.12
Primary Energy - Renewable	MJ	45.60	46.89	48.19	49.49	50.78	52.08	53.38	54.67	55.97
Secondary Fuels	MJ	0	0	0	0	0	0	0	0	0
Non-Renewable Material Sources	KG	8.80	8.98	9.16	9.35	9.53	9.71	9.89	10.07	10.25
Non-Hazardous Waste	KG	7.91	8.08	8.26	8.44	8.62	8.80	8.97	9.15	9.33
Hazardous Waste	KG	0	0	0	0	0	0	0	0	0