

Data-Gathering in the Supply Chain to Support Green Chemistry Initiatives

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Supply Chain Manager, Steelcase Inc.
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Steelcase

Key Drivers for Sustainability at Steelcase

- ❑ “Protect the Environment,” a Steelcase core value
- ❑ > 90% of customer RFQs include sustainability inquiries
- ❑ “Lean and Green” solutions reduce waste and cost



A customer's view...



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A customer's view...



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A customer's view...



A customer's view...



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A customer's view...



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Steelcase Sustainability Initiatives

Materials Chemistry | Life Cycle Assessment | Recycling & Reuse



- ❑ Eliminating **potentially hazardous materials** from products and processes.
- ❑ Maintaining responsibility for full product **composition** and **life cycle**.
- ❑ Designing products to **facilitate recycling and reuse**.

Recycling / Reuse



Significant Recycled Content

Designed for quick disassembly

Parts marked for proper recycling stream

Help our customers dispose of / recycle product at the end of its useful life.

Steelcase Environmental Partnership Program

Provides a network to **donate**, **refurbish**, **resell** and **recycle**.

What supporting information do customers want?

Steelcase Product Environmental Profile – Answer®

- | | |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Category | — Systems Solutions: Panel-based |
| Certifications | — MBDC Cradle to Cradle Certified ^{CM} – Silver
— SCS Indoor Advantage TM and Indoor Advantage TM Gold certified (depending on options) for indoor air quality in North America
— level TM 2 (depending on options) and level TM 1 certified to BIFMA e3 standard |
| LEED Contribution | — Recycled content, regional materials, rapidly renewable materials, certified wood, low emitting materials, daylight and views and sustainable purchasing |
| Environmental Facts | — 73% recyclable
— 44% recycled content
— PVC-free work surface edge banding available
— PVC-free power available |



Materials Chemistry

Together with McDonough Braungart Design Chemistry (MBDC), one of the world's leading sustainable design firms, we're assessing all of the chemicals and materials used in our products down to 100 parts per million - evaluating them against 19 human and environmental health criteria. As a result, we're forming a cradle-to-cradle strategy for all of our products. All major categories of materials for Answer have been assessed.

What supporting information do customers want?

Life Cycle Assessment

We work with the University of Michigan's Center for Sustainable Systems to complete life cycle assessments for all of our major products to better understand the environmental impact of every stage of a product's life. A life cycle assessment has been completed on standard Answer workstation components.

Recycling & Reuse

We select materials that can be recycled at the end of a product's use and then design in such a way that they can be easily disassembled and separated. To simplify recycling, we minimize co-mingled components, consider the number and type of fasteners and are committed to making disassembly easy with common hand tools. Adhesives are eliminated if possible.

Recycled Content Summary

Total Weight (lbs) 570.7 - BIFMA Typical Open Plan Workstation

Recycled Content (lbs)	251.8	Recycled Content	44%
Post Consumer (lbs)	105.5	Post Consumer	18%
Pre Consumer (lbs)	146.3	Pre Consumer	26%
Recyclable Content (lbs)	414.8	Recyclable Content	73%

What supporting information do customers want?

SSC

Sustainability Score Card

CONFIDENTIAL
OVERALL INDEX 

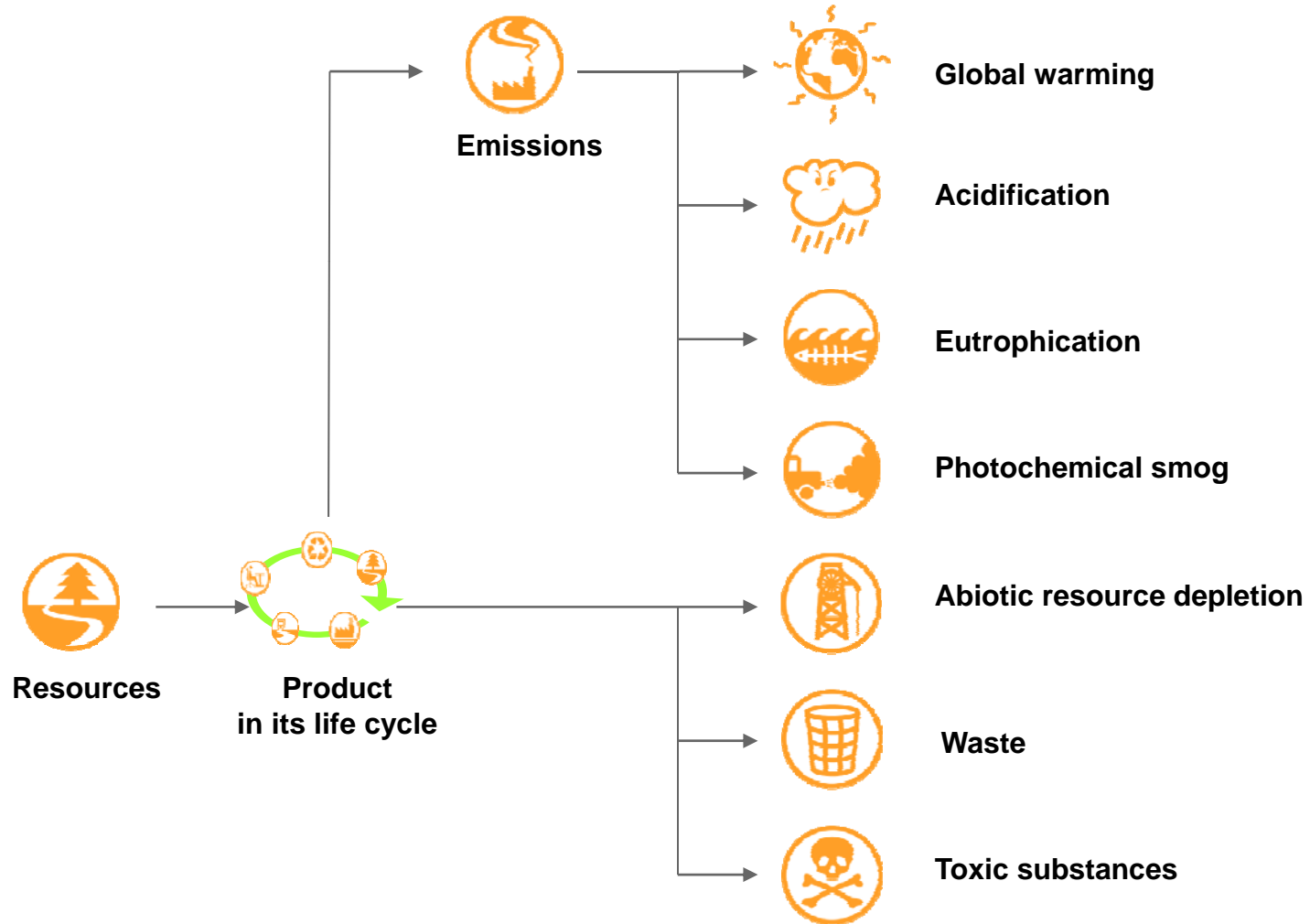
Metrics

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CATEGORY	PARAMETER	LBS	%	INDEX
RECYCLING	Pre-Consumer	12.533	17.9	
	Post-Consumer	0.000	0.0	
	Recyclable	50.456	72.3	
C2C CERTIFICATIONS	Gold	10.934	15.7	
	Silver	30.267	43.4	
C2C Chemistry	Green	2.987	4.3	
	Yellow	34.245	49.1	
	Red	0.600	0.0	
	Black	0.456	0.6	
	Grey	32.092	46.0	
SCS Indoor Advantage	Gold	6.345	9.1	
	Silver	50.356	72.2	








Life Cycle Assessment

...measuring the impact at each stage of the product's "life"



Results of the Life Cycle Assessment for one Steelcase Product

Distribution of the environmental impacts for the relevant life cycle stages

	Category	Unit	Total	Materials	Production	Transport	End of Life
							
	Global warming	[g CO ₂ -eq.]	102 610.0	67 800.0	27 700.0	3 720.0	3 390.0
	Acidification	[g SO ₂ -eq.]	836.6	535.0	266.0	35.3	0.3
	Eutrophication	[g NO ₃ -eq.]	712.2	471.0	179.0	59.2	3.0
	Photochemical smog	[g C ₂ H ₄ -eq.]	24.2	18.0	0.8	4.6	0.7

No relevant environmental exchanges occur during the use stage of the product.

Draft level certification list: NeoCon 2010:

Supplier Data Collection: BIFMA e3 / level

level 1:

- o media:scape lounge
- o media:scape-submitted for level 1
- o Convene
- o Icon
- o Context
- o Dearborn
- o Crew
- o Uno
- o Jenny
- o Jersey
- o Wood Seating

level 2:

- o EE6
- o Walden
- o Montage
- o Universal Storage

level 3:

- o Think (no restrictions)
- o cobl
- o Leap
- o Amia

Credit	Description	Points
Credit 5.2	Climate Neutral Materials	1
Credit 5.3	Life Cycle Assessment	
5.3.1	Apply first two of the four elements in ISO 14040 during product design	1
5.3.2	Evidence that a company has completed an LCA utilizing all four components outlined in ISO 14040	1
5.3.3	Evidence that a company has completed an independent third party peer review of its LCA	1
Credit 5.4	Efficient Use of Materials	
5.4.1	Material efficiency of 60%	1
5.4.2	Material efficiency of 70%	1
Credit 5.5	Rapidly Renewable Materials	
5.5.1	Select renewable materials for use as an element of the product	1
5.5.2	Ensure that renewable material production waste is not destined for disposal	1
Credit 5.6	Biobased Renewable Materials - Sustainable Wood	
5.6.1 Base	50% of the total wood weight of the product is compliant to a qualified organizations sustainable forest practices, OR A minimum of 20% of the total wood weight of the product is compliant to FSC responsible forest practices	1
5.6.2 Adv.	75% of the total wood weight of the product is compliant to a qualified organizations sustainable forest practices, OR A minimum of 30% of the total wood weight of the product is compliant to FSC responsible forest practices	1
	Recycled Content	
	(pre-consumer + 1/2 post-industrial) or meet Table One Guidelines	1
	(pre-consumer + 1/2 post-industrial) or exceed Table One Guidelines by 20%	1
	Packaging	1
	Recyclable and Biodegradable Materials	
	Identify and quantify the amount of recyclable & biodegradable materials in the product.	1
5.9.1	Design for Durability/Upgradeability	1

Level Certification	Points Required	Product Related Points Required
level 1	32-44 points	5 points
level 2	45-62 points	11 points
level 3	63-90 points	18 points

Supplier Data Collection

Supplier Name	FR Reference	
AGRITEK IND INC	1A18260	
APEX SPRING & STAMPING	1A45364	
ASBER ENTERPRISE CO LTD	1B26504	
ASBER ENTERPRISE CO LTD	1B26499	
ASBER ENTERPRISE CO LTD	1B26495	
ASBER ENTERPRISE CO LTD	1A75145	YES
ASBER ENTERPRISE CO LTD	1B26512	NO
BRAYTON INTERNATIONAL	1A09208	
BRAYTON INTERNATIONAL	1A09209	
BRAYTON INTERNATIONAL	1A05120	
ERVINS GROUP LLC	1B06978	
ERVINS GROUP LLC	1A847216210	
ERVINS GROUP LLC	1A98194	
ERVINS GROUP LLC	1B15040	
ERVINS GROUP LLC	1A98193	YES
ERVINS GROUP LLC	1A84724	
ERVINS GROUP LLC	1A847216294	NO
ERVINS GROUP LLC	1B08670	
ERVINS GROUP LLC	1A88299	891046502 UPHOLSTERY - J-CHANNEL, BA
ERVINS GROUP LLC	1A88298	891046501 UPHOLSTERY - J-CHANNEL, SE
ERVINS GROUP LLC	1A45361	909046200 FLEX WEBBING ASSEMBLY
ERVINS GROUP LLC	1A48782	906246212-5010 COVER-SEAT, UNDER - (FRA)S
ERVINS GROUP LLC	1B26517	909048200 FLEX WEBBING ASSEMBLY - 48
ERVINS GROUP LLC	1A88301	891046512 UPHOLSTERY - J CHANNEL, BA
EST COMPANY	1B06972	803146200 BACK FRAME ASSEMBLY - AL
G & T INDUSTRIES INC.	1B29211	893048201 BUMPER-STOP, CLIP, TALL
GEXPRO SERVICES	1A84677	850700020-9100 SCREW - SHOULDER,SPECIAL
GEXPRO SERVICES	1A09210	852045653 RIVET - PIVOT, TENSION
GEXPRO SERVICES	1A45346	851030100 NUT - PUSH, PALNUT, .250
GEXPRO SERVICES	1A33508	871045620 RECEIVER - PINTLE, CASTER
GEXPRO SERVICES	102039	854045802 SCREW - TAPPING, TRUSS HD,
GEXPRO SERVICES	103796	854045327 SCREW-TAPPING,PNH,TORX...
GEXPRO SERVICES	1B17122	863046202-9100 SCREW - TAPPING,TRH, .220X

SUPPLIER'S COMMITMENT
(to be emailed as a pdf to kgray2@steelcase.com.)

Name of the supplier (referred to below as "the Supplier"): _____

Name of the supplier's representative: _____

Email address of the supplier's representative: _____

1. The Supplier commits to inform Steelcase Inc. and/or its affiliates ("Steelcase") when new substances included in the Candic (products). (Referto: http://echa.europa.eu/chem_data/car)

YES NO

2. The Supplier commits to inform Steelcase Inc. and/or its affiliates ("Steelcase") of the formulation of its products.

YES NO

Supplier Name	h1 Status	CARB Phase 2 Effective Dates		
		HVPW-VC: 1-1-2010	MDF: 1-1-2011	PB: 1-1-2011
		HWPW-CC: 7-1-	Thin MDF: 1-1-2012	
Certs Collected for Phase 1				
		HVPV	MDF	PB
Altus	Complete		Flakeboard ph1	
American Hardwoods Inc.	Complete		Empresa 121 ph1	
AmFab Inc.	Complete		Plum Creek ph1 & 2*	Tafisa ph1 Sierrapine ph1 Uniboard ph1
Arconso Corp	NA		W. Fraser ph1	
Babcock	Complete		ATC ph1	ATC ph1 Uniboard ph1
Bay View Industries	Complete		Temple-Inland ph1	Sierrapine ph1 & 2*
Bennett/Peter Lumber	Complete	SHJW ph1 & 2 PASA - P'W exemp?		
Bold Companies	Complete			
BTD Wood Powder Coating [Tier 1 supplier: Innovative Plastics, Inc.]	Complete			
CCN International	Complete	JSC RB ph2		
Cedar Crest Wood Products	Complete			
Central Hardwoods	Complete	Mt. Baker ph1		
Chervan	Complete	Krasnji Yakor ph2 OAO Fanplit ph? OAO UIFK ph2		
Columbia Forest Products	Complete	Syktvkar ph2 Syktvkar ph1 OAO Fanplit ph? OAO UIFK ph?		
Concannon Lumber	Complete	JSC RB ph2		



April 30, 2009

All products sold or shipped by Craftwood Industries Inc. and/or its affiliates and subsidiaries ("Steel Phase 1 requirements as of May 15, 2009. I Compliance which confirm and validate co

Sincerely,
Terry W. Beekering
Terry W. Beekering
President / Owner
Craftwood Industries, Inc.

From: Gray, Karen Sent: Fri 2/20/09 10:58 AM
To: Peter.Dow@Milliken.com
Cc: Rogalla, Aron; Mika, MaryEllen
Subject: New European Union REACH Regulation

Message | Milliken & Co - REACH.xls (22 KB) | REACH Supplier's Commitment-d

Dear Supplier,

As a supplier of products to Steelcase Inc. (and/or its affiliates and subsidiaries) whose products are sold to our customers in Europe, please send us:

- a list of all products on the attached spreadsheet supplied to Steelcase which contain substances included in the European Chemical Agency (ECHA) Candidate list of "Substances of Very High Concern" (found at the following website: http://echa.europa.eu/chem_data/candidate_list_table_en.asp [please be aware that the Candidate List will be regularly updated by ECHA]);
- the CAS (Chemical Abstract Service) number of these substances;
- the concentration (weight percentage) of these substances in the product; and
- the attached commitment ("REACH Supplier's Commitment"); completed and signed (regardless of whether your products contain any of these substances).

Steelcase is required to have this information to fulfil our legal obligations under REACH by the end of March 2009. **Please send your response by March 15, 2009.**

Background information on the REACH Regulation:

The European REACH Regulation Number 1907/2006 on the Registration, Evaluation, Authorization and restriction of Chemicals entered into force on June 1, 2007. While setting new rules for the management of chemical substances, REACH requires more communication between customers and suppliers on the substances they buy and sell.

On October 28, 2008, ECHA included 15 substances on their initial Candidate List of Substances of Very High Concern (SVHC) for authorization. The inclusion of SVHCs in the Candidate List for authorization (REACH Article 59) triggers the notification and communication requirements for "substances in articles"

Welcome Karen Gray

supplysync

Search Advanced Search

Supplier Data Management SupplySync VendorID Update

Supplier Data Management Help: SDM2

Supplier Data Management

Steelcase Supplier Data Management Site

Supplier Data Management >

Steelcase Supplier Data Management

Supplier Contact Data Supplier Location Data

Supplier Part Packaging Data Supplier Sustainability Data

..more Supplier Data Collection

Steelcase Supplier Data Management Site

Supplier Data Management > Supplier Sustainability Data

Sustainability Data for 0000511340 CRAIG'S PRECISION MACHINE

Supplier Specific Data Location Specific Data Material Specific Data

Lean and Green Steelcase Lean & Green Assessment

Soc / Env Account. Social / Environmental Accountability

C2C Involvement MBDC Cradle to Cradle Involvement

Plant-Based Materials Plant-Based Materials, Lacey Act, and CARB 93120

EU REACH Registration, Evaluation, Authorisation and Restriction of Chemicals

Have a Sustainability Question? Please email your questions to [Karen Gray](#) or [MaryEllen Mika](#).

Sustainability Questions for Plant-Based Materials

1 .) Does your company sell any products containing plant-based materials?
 Yes No

2a .) Steelcase has identified your company as _____ to the Lacey Act?
 Subject Not Subject

2b .) Is the information provided in question 2a accurate?
 Yes No

For more information regarding the Lacey Act, [please click here](#).

3a .) Steelcase has identified that your company is a supplier of composite wood products?
 Yes No

* Composite wood products means hardwood plywood, particleboard, structural panels as specified in the Voluntary Product Standard for Composite Wood Products (ASTM D 5456-06), oriented strand board, glued laminated timber, Structural Capacities of Prefabricated Wood I-Joists (ASTM D 5456-06), boats, aerospace craft, or aircraft. -CARB Rule 93120.1 (a)(8)

Sustainability Questions for EU REACH

1a .) Steelcase has identified that your company is _____ to REACH?
 Subject Not Subject

1b .) Is the information in 1a accurate?
 Yes No

If "yes" in #1, Steelcase has records indicating that any of the products on Europe's list of Substances of Very High Concern (SVHCs) will be used in your products. Steelcase requires your continued compliance to REACH by reporting SVHCs in your product data.

2 .) Please select the appropriate button below to acknowledge the information provided in question 1.
 Yes Not Subject

Steelcase

List of Materials to provide Chemicals of Interest data for:

	Status	Material Number	Material Description
	*		
<input type="checkbox"/>		19162A02	SPL JUNCTION ASSY XT TRIM 54
<input type="checkbox"/>		19778A01	SPL HORZ BEAM, ASM, 1750 MM JPN
<input type="checkbox"/>		19778A02	HORIZONTAL BEAM, ASM, 1550 MM
<input type="checkbox"/>		19778A03	SPL HORIZONTAL BEAM ASM, 750 mm
<input type="checkbox"/>		19778A04	HORIZONTAL BEAM, ASM, 400 MM

Page 1 of 46

[Reset](#) [Limit List to Selected Materials](#) [View Chemicals of Interest Data](#)

Chemicals of Interest for Selected Materials.

CAS Registry Number	Chemical Name	PPM (Optional)	DI
---------------------	---------------	----------------	----

No data exists for this material OR a Material hasn't been selected to View/Update.

Page 0 of 0

[Clear](#) [Update](#)

Select Chemical(s) of Interest

	CAS Registry Number	Chemical Name
<input type="checkbox"/>	(NONE)	None of the Listed Chemicals of Interest
<input type="checkbox"/>	amixtureof	A mixture of: 4-[[bis-(4-fluorophenyl)-methylsilyl]methyl]-4H-1,2,4-triazole; 1-[[bis-(4-fluorophenyl)methyl-silyl]-methyl]-1H-1,2,4-triazole
<input type="checkbox"/>	arsenicinorg	Arsenic (inorganic oxides)
<input type="checkbox"/>	benzidinedye	Benzidine-based dyes
<input type="checkbox"/>	ceramicfib	Ceramic fibers (airborne particles of respirable size)

Page 1 of 121

[Reset](#) [Add CASRN to Work Area](#)

“One size fits all” for suppliers? Or a “tailored solution”?

The dilemma... “whether to align the whole company’s policies with the ‘highest common denominator’ and bear the costs of setting stringent standards worldwide, or to deal with the complexity of a patchwork of standards in operations around the globe.”

Stronger Supply Chain
=
Stronger Steelcase.

Thank you.

