Environmental Product Declaration for:

KI Genius Architectural Wall

Steel Panel (Q11/880610)



This Environmental Product Declaration (EPD), covering all life cycle stages, was prepared in conformity with ISO 14025, ISO 14044, and ISO 21930, and in accordance with the Earthsure Product Category Rule 30162403:2014 for Interior Wall Systems. PCR Review Chair Thomas Gloria, LCACP #2008-3. EPDs prepared under other programs may not be comparable.

VERIFIED by SCS GLOBAL SERVICES ENVIRONMENTAL PRODUCT DECLARATION BASED ON LCA

SCS-EPD-03720 | EPD Valid: 11/9/2015 to11/8/2020

Furnishing Knowledge®

Product: Genius architectural walls are designed and manufactured offsite, then installed in the building, with a floor-to-ceiling vertical span and meet the requirements of the International Building Code. These interior walls are constructed using ecologically sound materials and manufacturing processes. The wall system integrates with workspaces, storage and accessories to create streamlines workstations, conference rooms, training rooms and more. They may be moved to another location without losing any performance characteristics. This EPD is for a steel panel manufactured in Manitowoc, Wisconsin.

Producer: KI is a contract furniture company that manufactures innovative furniture and movable wall systems for educational, university, business and government markets.

Independent Verification

Independent verification of the declaration and data, according to ISO 14025: ☐ internal ☑ external

Verifier:

Thomas Gloria
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LCACP#: 2008-3

Summary of Life Cycle Impacts and Inventory per m^2-30 yr, meeting IBC requirements for interior walls	
Climate Change	**210** kg CO_2-eq
Acidification	**2.1** kg SO_2-eq
Eutrophication	**0.70** kg N-eq
Ozone Depletion	**$1.2x10^{-5}$** kg CFC-11-eq
Photochemical Smog	**16** kg O_3-eq
Ecotoxicity	**1.0** CTUe
Human Health – Air	**0.18** kg PM2.5-eq
Primary Energy Consumption	**4,700** MJ non-renewable
	200 MJ renewable
Freshwater Consumption	**4,000** L
Waste Production	**0.047** kg hazardous
	65 kg non-hazardous
Material Resource Consumption	**200** kg non-renewable
	3.0 kg renewable
Land Use	**40** m^2-yr

LIFE CYCLE IMPACT ASSESSMENT RESULTS

For one square meter of interior wall conforming to the International Building Code for thirty years, using TRACI 2.1 Life Cycle Indicators (CML in parentheses):

Life Cycle Impact		Total	Stage I	Stage II	Stage III	Stage IV:	Units
			Production	Installation	Use	End of Life	
	Climate Change	210	170	14	0.00	26	kg CO_2-eq
		(210)	(170)	(14)	(0.00)	(26)	kg CO_2-eq
	Acidification	2.1	1.9	0.10	0.00	0.027	kg SO_2-eq
		(2.3)	(2.1)	(0.089)	(0.00)	(0.026)	kg SO_2-eq
	Eutrophication	0.70	0.37	0.036	0.00	0.30	kg N-eq
		(0.35)	(0.21)	(0.025)	(0.00)	(0.11)	kg PO_4^{3-}-eq
	Ozone Depletion	$1.2x10^{-5}$	$9.9x10^{-6}$	$1.7x10^{-6}$	0.00	$2.1x10^{-7}$	kg CFC-11-eq
		($1.2x10^{-5}$)	($1.0x10^{-5}$)	($1.7x10^{-6}$)	(0.00)	($2.2x10^{-7}$)	kg CFC-11-eq
	Photochemical Smog	16	13	2.5	0.00	0.33	kg O_3-eq
		(0.12)	(0.11)	($3.8x10^{-3}$)	(0.00)	($6.4x10^{-3}$)	kg C_2H_4-eq
	Ecotoxicity	1.0	0.50	0.49	0.00	$4.1x10^{-3}$	CTUe
		(0.86)	(0.77)	(0.024)	(0.00)	(0.066)	kg 1,4-DCB-eq
	Human Health- Air	0.18	0.17	$7.3x10^{-3}$	0.00	$1.8x10^{-3}$	kg PM2.5-eq

LIFE CYCLE INVENTORY INFORMATION

For one square meter of interior wall conforming to the International Building Code for thirty years.

Inventory Item	Amount	Units
Primary Energy Consumption	4,700	MJ non-renewable
	200	MJ renewable
Freshwater Consumption	4,000	L
Waste Production	0.047	kg hazardous
	65	kg non-hazardous
Material Resource Consumption	200	kg non-renewable
	3.0	kg renewable
Land use	40	m^2 yr

HAZARDOUS MATERIAL CONTENT

For one square meter of interior wall conforming to the International Building Code for thirty years (at least 0.1% using California DTSC Candidate Chemical List).

Material	CAS Number	Amount (%)
Aluminum	7429-90-5	21%
Bisphenol A, Epichlorohydrin Epoxy Resin	25036-25-3	0.39%
Manganese	7439-96-5	0.14%
Titanium dioxide	13463-67-7	0.39%
Zinc	7440-66-6	0.82%

ADDITIONAL ENVIRONMENTAL INFORMATION

For one square meter of interior wall conforming to the International Building Code for thirty years.

VOC emissions per BIFMA X7.1	passed
Recycled content	19% (pre-consumer)
	9.9% (post-consumer)
Recyclable content*	72%
Organization's use of environmental management system	ISO 9001
Other environmental certification programs	level 2, Indoor Advantage Gold

*Recyclable portion based on steel and aluminum in the wall panel. Recycling facilities may not be available in all areas.



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Environmental Product Declaration for:

KI Genius Architectural Wall

Solid Wood Panel (Q11/880610-6)



This Environmental Product Declaration (EPD), covering all life cycle stages, was prepared in conformity with ISO 14025, ISO 14044, and ISO 21930, and in accordance with the Earthsure Product Category Rule 30162403:2014 for Interior Wall Systems. PCR Review Chair Thomas Gloria, LCACP #2008-3. EPDs prepared under other programs may not be comparable.

VERIFIED by SCS GLOBAL SERVICES ENVIRONMENTAL PRODUCT DECLARATION BASED ON LCA

SCS-EPD-03717 | EPD Valid: 11/9/2015 to11/8/2020

Furnishing Knowledge®

Product: Genius architectural walls are designed and manufactured offsite, then installed in the building, with a floor-to-ceiling vertical span and meet the requirements of the International Building Code. These interior walls are constructed using ecologically sound materials and manufacturing processes. The wall system integrates with workspaces, storage and accessories to create streamlines workstations, conference rooms, training rooms and more. They may be moved to another location without losing any performance characteristics. This EPD is for a wood panel manufactured in Manitowoc, Wisconsin. FSC wood is available upon request.

Producer: KI is a contract furniture company that manufactures innovative furniture and movable wall systems for educational, university, business and government markets.

Independent Verification

Independent verification of the declaration and data, according to ISO 14025: ☐ internal ☑ external

Verifier:

Thomas Gloria
t.gloria@industrialecology.com
LCACP#: 2008-3

Summary of Life Cycle Impacts and Inventory per m^2-30 yr, meeting IBC requirements for interior walls	
Climate Change	**120** kg CO_2-eq
Acidification	**1.3** kg SO_2-eq
Eutrophication	**0.45** kg N-eq
Ozone Depletion	**$7.9x10^{-6}$** kg CFC-11-eq
Photochemical Smog	**10** kg O_3-eq
Ecotoxicity	**0.74** CTUe
Human Health – Air	**0.10** kg PM2.5-eq
Primary Energy Consumption	**2,900** MJ non-renewable
	360 MJ renewable
Freshwater Consumption	**1,800** L
Waste Production	**0.013** kg hazardous
	44 kg non-hazardous
Material Resource Consumption	**110** kg non-renewable
	13 kg renewable
Land Use	**33** m^2-yr

LIFE CYCLE IMPACT ASSESSMENT RESULTS

For one square meter of interior wall conforming to the International Building Code for thirty years, using TRACI 2.1 Life Cycle Indicators (CML in parentheses):

Life Cycle Impact		Total	Stage I: Production	Stage II: Installation	Stage III: Use	Stage IV: End of Life	Units
	Climate Change	120	94	12	0.00	16	kg CO_2-eq
		(120)	(94)	(12)	(0.00)	(16)	kg CO_2-eq
	Acidification	1.3	1.2	0.088	0.00	0.018	kg SO_2-eq
		(1.4)	(1.4)	(0.077)	(0.00)	(0.018)	kg SO_2-eq
	Eutrophication	0.45	0.19	0.035	0.00	0.23	kg N-eq
		(0.22)	(0.11)	(0.022)	(0.00)	(0.085)	kg PO_4^{3-}-eq
	Ozone Depletion	$7.9x10^{-6}$	$6.3x10^{-6}$	$1.4x10^{-6}$	0.00	$1.6x10^{-7}$	kg CFC-11-eq
		$(7.9x10^{-6})$	$(6.3x10^{-6})$	$(1.4x10^{-6})$	(0.00)	$(1.6x10^{-7})$	kg CFC-11-eq
	Photochemical Smog	10	7.8	2.0	0.00	0.24	kg O_3-eq
		(0.071)	(0.063)	$(3.4x10^{-3})$	(0.00)	$(3.9x10^{-3})$	kg C_2H_4-eq
	Ecotoxicity	0.74	0.24	0.49	0.00	$3.0x10^{-3}$	CTUe
		(0.49)	(0.43)	(0.020)	(0.00)	(0.041)	kg 1,4-DCB-eq
	Human Health- Air	0.10	0.095	$6.2x10^{-3}$	0.00	$1.2x10^{-3}$	kg PM2.5-eq

LIFE CYCLE INVENTORY INFORMATION

For one square meter of interior wall conforming to the International Building Code for thirty years.

Inventory Item	Amount	Units
Primary Energy Consumption	2,900	MJ non-renewable
	360	MJ renewable
Freshwater Consumption	1,800	L
Waste Production	0.013	kg hazardous
	44	kg non-hazardous
Material Resource Consumption	110	kg non-renewable
	13	kg renewable
Land use	33	m^2 yr

HAZARDOUS MATERIAL CONTENT

For one square meter of interior wall conforming to the International Building Code for thirty years (at least 0.1% using California DTSC Candidate Chemical List).

Material	CAS Number	Amount (%)
Aluminum	7429-90-5	21%
Zinc	7440-66-6	0.81%

ADDITIONAL ENVIRONMENTAL INFORMATION

For one square meter of interior wall conforming to the International Building Code for thirty years.

VOC emissions per BIFMA X7.1	passed
Recycled content	15% (pre-consumer)
	0.92% (post-consumer)
Recyclable content*	32%
Organization's use of environmental management system	ISO 9001
Other environmental certification programs	level 2, Indoor Advantage Gold, optional FSC wood

*Recyclable portion based on steel and aluminum in the wall panel. Recycling facilities may not be available in all areas.



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Environmental Product Declaration for:

KI Genius Architectural Wall

Erasable Steel Panel (Q11/880610-8)





This Environmental Product Declaration (EPD), covering all life cycle stages, was prepared in conformity with ISO 14025, ISO 14044, and ISO 21930, and in accordance with the Earthsure Product Category Rule 30162403:2014 for Interior Wall Systems. PCR Review Chair Thomas Gloria, LCACP #2008-3. EPDs prepared under other programs may not be comparable.

VERIFIED by SCS GLOBAL SERVICES ENVIRONMENTAL PRODUCT DECLARATION BASED ON LCA

SCS-EPD-03723 | EPD Valid: 11/9/2015 to11/8/2020

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Product: Genius architectural walls are designed and manufactured offsite, then installed in the building, with a floor-to-ceiling vertical span and meet the requirements of the International Building Code. These interior walls are constructed using ecologically sound materials and manufacturing processes. The wall system integrates with workspaces, storage and accessories to create streamlines workstations, conference rooms, training rooms and more. They may be moved to another location without losing any performance characteristics. This EPD is for an erasable steel panel manufactured in Manitowoc, Wisconsin.

Producer: KI is a contract furniture company that manufactures innovative furniture and movable wall systems for educational, university, business and government markets.

Independent Verification

Independent verification of the declaration and data, according to ISO 14025: ☐ internal ☑ external

Verifier:

Thomas Gloria
t.gloria@industrialecology.com
LCACP#: 2008-3

Summary of Life Cycle Impacts and Inventory per m^2-30 yr, meeting IBC requirements for interior walls		
Climate Change	**200**	kg CO_2-eq
Acidification	**2.1**	kg SO_2-eq
Eutrophication	**0.71**	kg N-eq
Ozone Depletion	**$1.1x10^{-5}$**	kg CFC-11-eq
Photochemical Smog	**14**	kg O_3-eq
Ecotoxicity	**2.4**	CTUe
Human Health – Air	**0.16**	kg PM2.5-eq
Primary Energy Consumption	**4,700**	MJ non-renewable
	260	MJ renewable
Freshwater Consumption	**4,100**	L
Waste Production	**0.095**	kg hazardous
	56	kg non-hazardous
Material Resource Consumption	**190**	kg non-renewable
	6.1	kg renewable
Land Use	**55**	m^2-yr

LIFE CYCLE IMPACT ASSESSMENT RESULTS

For one square meter of interior wall conforming to the International Building Code for thirty years, using TRACI 2.1 Life Cycle Indicators (CML in parentheses):

Life Cycle Impact		Total	Stage I	Stage II	Stage III	Stage IV:	Units
			Production	Installation	Use	End of Life	
	Climate Change	200	150	19	0.00	23	kg CO_2-eq
		(200)	(150)	(19)	(0.00)	(23)	kg CO_2-eq
	Acidification	2.1	1.9	0.16	0.00	0.023	kg SO_2-eq
		(2.3)	(2.1)	(0.16)	(0.00)	(0.022)	kg SO_2-eq
	Eutrophication	0.71	0.38	0.071	0.00	0.26	kg N-eq
		(0.35)	(0.21)	(0.039)	(0.00)	(0.097)	kg PO_4^{3-}-eq
	Ozone Depletion	$1.1x10^{-5}$	$9.0x10^{-6}$	$1.9x10^{-6}$	0.00	$1.9x10^{-7}$	kg CFC-11-eq
		($1.1x10^{-5}$)	($9.0x10^{-6}$)	($1.9x10^{-6}$)	(0.00)	($1.9x10^{-7}$)	kg CFC-11-eq
	Photochemical Smog	14	12	2.6	0.00	0.28	kg O_3-eq
		(0.12)	(0.10)	(7.4x10-3)	(0.00)	($5.5x10^{-3}$)	kg C_2H_4-eq
	Ecotoxicity	2.4	0.44	1.9	0.00	$3.5x10^{-3}$	CTUe
		(1.2)	(1.1)	(0.040)	(0.00)	(0.057)	kg 1,4-DCB-eq
	Human Health- Air	0.16	0.15	$1.2x10^{-2}$	0.00	$1.6x10^{-3}$	kg PM2.5-eq

LIFE CYCLE INVENTORY INFORMATION

For one square meter of interior wall conforming to the International Building Code for thirty years.

Inventory Item	Amount	Units
Primary Energy Consumption	4,700	MJ non-renewable
	260	MJ renewable
Freshwater Consumption	4,100	L
Waste Production	0.095	kg hazardous
	56	kg non-hazardous
Material Resource Consumption	190	kg non-renewable
	6.1	kg renewable
Land use	55	m^2 yr

HAZARDOUS MATERIAL CONTENT

For one square meter of interior wall conforming to the International Building Code for thirty years (at least 0.1% using California DTSC Candidate Chemical List).

Material	CAS Number	Amount (%)
Aluminum	7429-90-5	24%
Zinc	7440-66-6	0.95%

ADDITIONAL ENVIRONMENTAL INFORMATION

For one square meter of interior wall conforming to the International Building Code for thirty years.

VOC emissions per BIFMA X7.1	passed
Recycled content	14% (pre-consumer)
	0.85% (post-consumer)
Recyclable content*	29%
Organization's use of environmental management system	ISO 9001
Other environmental certification programs	level 2, Indoor Advantage Gold

*Recyclable portion based on steel and aluminum in the wall panel. Recycling facilities may not be available in all areas.



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Environmental Product Declaration for:

KI Genius Architectural Wall

Steel/Glass Panel (QX/880610)



This Environmental Product Declaration (EPD), covering all life cycle stages, was prepared in conformity with ISO 14025, ISO 14044, and ISO 21930, and in accordance with the Earthsure Product Category Rule 30162403:2014 for Interior Wall Systems. PCR Review Chair Thomas Gloria, LCACP #2008-3. EPDs prepared under other programs may not be comparable.

VERIFIED by SCS GLOBAL SERVICES ENVIRONMENTAL PRODUCT DECLARATION BASED ON LCA

SCS-EPD-03721 | EPD Valid: 11/9/2015 to11/8/2020

Furnishing Knowledge®

Product: Genius architectural walls are designed and manufactured offsite, then installed in the building, with a floor-to-ceiling vertical span and meet the requirements of the International Building Code. These interior walls are constructed using ecologically sound materials and manufacturing processes. The wall system integrates with workspaces, storage and accessories to create streamlines workstations, conference rooms, training rooms and more. They may be moved to another location without losing any performance characteristics. This EPD is for a combination steel and glass panel manufactured in Manitowoc, Wisconsin.

Producer: KI is a contract furniture company that manufactures innovative furniture and movable wall systems for educational, university, business and government markets.

Independent Verification

Independent verification of the declaration and data, according to ISO 14025: ☐ internal ☑ external

Verifier:

Thomas Gloria
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LCACP#: 2008-3

Summary of Life Cycle Impacts and Inventory per m^2-30 yr, meeting IBC requirements for interior walls		
Climate Change	**240**	kg CO_2-eq
Acidification	**2.4**	kg SO_2-eq
Eutrophication	**0.77**	kg N-eq
Ozone Depletion	**$1.6x10^{-5}$**	kg CFC-11-eq
Photochemical Smog	**22**	kg O_3-eq
Ecotoxicity	**1.1**	CTUe
Human Health – Air	**0.20**	kg PM2.5-eq
Primary Energy Consumption	**5,300**	MJ non-renewable
	210	MJ renewable
Freshwater Consumption	**4,100**	L
Waste Production	**0.048**	kg hazardous
	72	kg non-hazardous
Material Resource Consumption	**240**	kg non-renewable
	3.0	kg renewable
Land Use	**43**	m^2-yr

LIFE CYCLE IMPACT ASSESSMENT RESULTS

For one square meter of interior wall conforming to the International Building Code for thirty years, using TRACI 2.1 Life Cycle Indicators (CML in parentheses):

Life Cycle Impact		Total	Stage I	Stage II	Stage III	Stage IV:	Units
			Production	Installation	Use	End of Life	
	Climate Change	240	200	17	0.00	29	kg CO_2-eq
		(240)	(200)	(17)	(0.00)	(30)	kg CO_2-eq
	Acidification	2.4	2.2	0.12	0.00	0.030	kg SO_2-eq
		(2.5)	(2.4)	(0.10)	(0.00)	(0.029)	kg SO_2-eq
	Eutrophication	0.77	0.39	0.039	0.00	0.33	kg N-eq
		(0.40)	(0.24)	(0.028)	(0.00)	(0.13)	kg PO_4^{3-}-eq
	Ozone Depletion	$1.6x10^{-5}$	$1.4x10^{-5}$	$2.1x10^{-6}$	0.00	$2.4x10^{-7}$	kg CFC-11-eq
		($1.6x10^{-5}$)	($1.4x10^{-5}$)	($2.1x10^{-6}$)	(0.00)	($2.4x10^{-7}$)	kg CFC-11-eq
	Photochemical Smog	22	18	3.0	0.00	0.37	kg O_3-eq
		(0.13)	(0.12)	($4.3x10^{-3}$)	(0.00)	($7.2x10^{-3}$)	kg C_2H_4-eq
	Ecotoxicity	1.1	0.57	0.50	0.00	$4.6x10^{-3}$	CTUe
		(0.90)	(0.80)	(0.027)	(0.00)	(0.075)	kg 1,4-DCB-eq
	Human Health- Air	0.20	0.19	$8.6x10^{-3}$	0.00	$2.0x10^{-3}$	kg PM2.5-eq

LIFE CYCLE INVENTORY INFORMATION

For one square meter of interior wall conforming to the International Building Code for thirty years.

Inventory Item	Amount	Units
Primary Energy Consumption	5,300	MJ non-renewable
	210	MJ renewable
Freshwater Consumption	4,100	L
Waste Production	0.048	kg hazardous
	72	kg non-hazardous
Material Resource Consumption	240	kg non-renewable
	3.0	kg renewable
Land use	43	m^2 yr

HAZARDOUS MATERIAL CONTENT

For one square meter of interior wall conforming to the International Building Code for thirty years (at least 0.1% using California DTSC Candidate Chemical List).

Material	CAS Number	Amount (%)
Aluminum	7429-90-5	24%
Bisphenol A, Epichlorohydrin Epoxy Resin	25036-25-3	0.39%
Manganese	7439-96-5	0.12%
Titanium dioxide	13463-67-7	0.39%
Zinc	7440-66-6	0.89%

ADDITIONAL ENVIRONMENTAL INFORMATION

For one square meter of interior wall conforming to the International Building Code for thirty years.

VOC emissions per BIFMA X7.1	passed
Recycled content	22% (pre-consumer)
	9.2% (post-consumer)
Recyclable content*	65%
Organization's use of environmental management system	ISO 9001
Other environmental certification programs	level 2, Indoor Advantage Gold

*Recyclable portion based on steel and aluminum in the wall panel. Recycling facilities may not be available in all areas.



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Environmental Product Declaration for:

KI Genius Architectural Wall

Tackable/Glass Panel (QX/880610-5)





This Environmental Product Declaration (EPD), covering all life cycle stages, was prepared in conformity with ISO 14025, ISO 14044, and ISO 21930, and in accordance with the Earthsure Product Category Rule 30162403:2014 for Interior Wall Systems. PCR Review Chair Thomas Gloria, LCACP #2008-3. EPDs prepared under other programs may not be comparable.

VERIFIED by SCS GLOBAL SERVICES ENVIRONMENTAL PRODUCT DECLARATION BASED ON LCA

SCS-EPD-03722 | EPD Valid: 11/9/2015 to11/8/2020

Furnishing Knowledge®

Product: Genius architectural walls are designed and manufactured offsite, then installed in the building, with a floor-to-ceiling vertical span and meet the requirements of the International Building Code. These interior walls are constructed using ecologically sound materials and manufacturing processes. The wall system integrates with workspaces, storage and accessories to create streamlines workstations, conference rooms, training rooms and more. They may be moved to another location without losing any performance characteristics. This EPD is for a combination tackable and glass panel manufactured in Manitowoc, Wisconsin.

Producer: KI is a contract furniture company that manufactures innovative furniture and movable wall systems for educational, university, business and government markets.

Independent Verification

Independent verification of the declaration and data, according to ISO 14025: ☐ internal ☑ external

Verifier:

Thomas Gloria
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LCACP#: 2008-3

Summary of Life Cycle Impacts and Inventory per m^2-30 yr, meeting IBC requirements for interior walls		
Climate Change	**170**	kg CO_2-eq
Acidification	**1.9**	kg SO_2-eq
Eutrophication	**0.55**	kg N-eq
Ozone Depletion	**$1.1x10^{-5}$**	kg CFC-11-eq
Photochemical Smog	**14**	kg O_3-eq
Ecotoxicity	**0.96**	CTUe
Human Health – Air	**0.15**	kg PM2.5-eq
Primary Energy Consumption	**4,000**	MJ non-renewable
	200	MJ renewable
Freshwater Consumption	**2,600**	L
Waste Production	**0.11**	kg hazardous
	47	kg non-hazardous
Material Resource Consumption	**170**	kg non-renewable
	2.8	kg renewable
Land Use	**37**	m^2-yr

LIFE CYCLE IMPACT ASSESSMENT RESULTS

For one square meter of interior wall conforming to the International Building Code for thirty years, using TRACI 2.1 Life Cycle Indicators (CML in parentheses):

Life Cycle Impact		Total	Stage I Production	Stage II Installation	Stage III Use	Stage IV: End of Life	Units
	Climate Change	170	140	11	0.00	19	kg CO_2-eq
		(170)	(140)	(11)	(0.00)	(19)	kg CO_2-eq
	Acidification	1.9	1.8	0.080	0.00	0.019	kg SO_2-eq
		(2.0)	(1.9)	(0.070)	(0.00)	(0.019)	kg SO_2-eq
	Eutrophication	0.55	0.31	0.032	0.00	0.21	kg N-eq
		(0.28)	(0.18)	(0.021)	(0.00)	(0.081)	kg PO_4^{3-}-eq
	Ozone Depletion	$1.1x10^{-5}$	$1.0x10^{-5}$	$1.3x10^{-6}$	0.00	$1.5x10^{-7}$	kg CFC-11-eq
		($1.1x10^{-5}$)	($1.0x10^{-5}$)	($1.3x10^{-6}$)	(0.00)	($1.5x10^{-7}$)	kg CFC-11-eq
	Photochemical Smog	14	12	1.8	0.00	0.23	kg O_3-eq
		(0.098)	(0.091)	($3.2x10^{-3}$)	(0.00)	($4.6x10^{-3}$)	kg C_2H_4-eq
	Ecotoxicity	0.96	0.47	0.48	0.00	$2.9x10^{-3}$	CTUe
		(0.77)	(0.70)	(0.019)	(0.00)	(0.048)	kg 1,4-DCB-eq
	Human Health- Air	0.15	0.14	$5.6x10^{-3}$	0.00	$1.3x10^{-3}$	kg PM2.5-eq

LIFE CYCLE INVENTORY INFORMATION

For one square meter of interior wall conforming to the International Building Code for thirty years.

Inventory Item	Amount	Units
Primary Energy Consumption	4,000	MJ non-renewable
	200	MJ renewable
Freshwater Consumption	2,600	L
Waste Production	0.11	kg hazardous
	47	kg non-hazardous
Material Resource Consumption	170	kg non-renewable
	2.8	kg renewable
Land use	37	m^2 yr

HAZARDOUS MATERIAL CONTENT

For one square meter of interior wall conforming to the International Building Code for thirty years (at least 0.1% using California DTSC Candidate Chemical List).

Material	CAS Number	Amount (%)
Aluminum	7429-90-5	42%
Bisphenol A, Epichlorohydrin Epoxy Resin	25036-25-3	0.15%
Titanium dioxide	13463-67-7	0.15%
Manganese	7439-96-5	1.6%

ADDITIONAL ENVIRONMENTAL INFORMATION

For one square meter of interior wall conforming to the International Building Code for thirty years.

VOC emissions per BIFMA X7.1	passed
Recycled content	31% (pre-consumer)
	5.2% (post-consumer)
Recyclable content*	57%
Organization's use of environmental management system	ISO 9001
Other environmental certification programs	level 2, Indoor Advantage Gold

*Recyclable portion based on steel and aluminum in the wall panel. Recycling facilities may not be available in all areas.



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Environmental Product Declaration for:

KI Genius Architectural Wall

Combination Solid Wood/Glass Panel (QX/880610-7)





This Environmental Product Declaration (EPD), covering all life cycle stages, was prepared in conformity with ISO 14025, ISO 14044, and ISO 21930, and in accordance with the Earthsure Product Category Rule 30162403:2014 for Interior Wall Systems. PCR Review Chair Thomas Gloria, LCACP #2008-3. EPDs prepared under other programs may not be comparable.

VERIFIED by SCS GLOBAL SERVICES ENVIRONMENTAL PRODUCT DECLARATION BASED ON LCA

SCS-EPD-03718 | EPD Valid: 11/9/2015 to11/8/2020

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Product: Genius architectural walls are designed and manufactured offsite, then installed in the building, with a floor-to-ceiling vertical span and meet the requirements of the International Building Code. These interior walls are constructed using ecologically sound materials and manufacturing processes. The wall system integrates with workspaces, storage and accessories to create streamlines workstations, conference rooms, training rooms and more. They may be moved to another location without losing any performance characteristics. This EPD is for a combination wood and glass panel manufactured in Manitowoc, Wisconsin. FSC wood is available upon request.

Producer: KI is a contract furniture company that manufactures innovative furniture and movable wall systems for educational, university, business and government markets.

Independent Verification

Independent verification of the declaration and data, according to ISO 14025: ☐ internal ☑ external

Verifier:

Thomas Gloria
t.gloria@industrialecology.com
LCACP#: 2008-3

Summary of Life Cycle Impacts and Inventory per m^2-30 yr, meeting IBC requirements for interior walls		
Climate Change	**180**	kg CO_2-eq
Acidification	**2.0**	kg SO_2-eq
Eutrophication	**0.61**	kg N-eq
Ozone Depletion	**$1.3x10^{-5}$**	kg CFC-11-eq
Photochemical Smog	**16**	kg O_3-eq
Ecotoxicity	**0.85**	CTUe
Human Health – Air	**0.15**	kg PM2.5-eq
Primary Energy Consumption	**4,200**	MJ non-renewable
	350	MJ renewable
Freshwater Consumption	**2,400**	L
Waste Production	**0.051**	kg hazardous
	57	kg non-hazardous
Material Resource Consumption	**180**	kg non-renewable
	11	kg renewable
Land Use	**41**	m^2-yr

LIFE CYCLE IMPACT ASSESSMENT RESULTS

For one square meter of interior wall conforming to the International Building Code for thirty years, using TRACI 2.1 Life Cycle Indicators (CML in parentheses):

Life Cycle Impact		Total	Stage I	Stage II	Stage III	Stage IV:	Units
			Production	Installation	Use	End of Life	
	Climate Change	180	140	14	0.00	22	kg CO_2-eq
		(180)	(140)	(14)	(0.00)	(22)	kg CO_2-eq
	Acidification	2.0	1.8	0.10	0.00	0.024	kg SO_2-eq
		(2.1)	(2.0)	(0.086)	(0.00)	(0.024)	kg SO_2-eq
	Eutrophication	0.61	0.28	0.035	0.00	0.29	kg N-eq
		(0.31)	(0.18)	(0.024)	(0.00)	(0.11)	kg PO_4^{3-}-eq
	Ozone Depletion	$1.3x10^{-5}$	$1.1x10^{-5}$	$1.7x10^{-6}$	0.00	$2.1x10^{-7}$	kg CFC-11-eq
		($1.3x10^{-5}$)	($1.1x10^{-5}$)	($1.7x10^{-6}$)	(0.00)	($2.1x10^{-7}$)	kg CFC-11-eq
	Photochemical Smog	16	14	2.4	0.00	0.31	kg O_3-eq
		(0.10)	(0.092)	($3.7x10^{-3}$)	(0.00)	($5.5x10^{-3}$)	kg C_2H_4-eq
	Ecotoxicity	0.85	0.36	0.49	0.00	$3.9x10^{-3}$	CTUe
		(0.72)	(0.64)	(0.022)	(0.00)	(0.058)	kg 1,4-DCB-eq
	Human Health- Air	0.15	0.14	$7.0x10^{-3}$	0.00	$1.7x10^{-3}$	kg PM2.5-eq

LIFE CYCLE INVENTORY INFORMATION

For one square meter of interior wall conforming to the International Building Code for thirty years.

Inventory Item	Amount	Units
Primary Energy Consumption	4,200	MJ non-renewable
	350	MJ renewable
Freshwater Consumption	2,400	L
Waste Production	0.051	kg hazardous
	57	kg non-hazardous
Material Resource Consumption	180	kg non-renewable
	11	kg renewable
Land use	41	m^2 yr

HAZARDOUS MATERIAL CONTENT

For one square meter of interior wall conforming to the International Building Code for thirty years (at least 0.1% using California DTSC Candidate Chemical List).

Material	CAS Number	Amount (%)
Aluminum	7429-90-5	26%
Zinc	7440-66-6	0.97%

ADDITIONAL ENVIRONMENTAL INFORMATION

For one square meter of interior wall conforming to the International Building Code for thirty years.

VOC emissions per BIFMA X7.1	passed
Recycled content	21% (pre-consumer)
	2.7% (post-consumer)
Recyclable content*	36%
Organization's use of environmental management system	ISO 9001
Other environmental certification programs	level 2, Indoor Advantage Gold, optional FSC wood

*Recyclable portion based on steel and aluminum in the wall panel. Recycling facilities may not be available in all areas.



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Environmental Product Declaration for:

KI Genius Architectural Wall

Glass Panel with 1-tier (XF/880610)





This Environmental Product Declaration (EPD), covering all life cycle stages, was prepared in conformity with ISO 14025, ISO 14044, and ISO 21930, and in accordance with the Earthsure Product Category Rule 30162403:2014 for Interior Wall Systems. PCR Review Chair Thomas Gloria, LCACP #2008-3. EPDs prepared under other programs may not be comparable.

SCS-EPD-03719 | EPD Valid: 11/9/2015 to11/8/2020

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Product: Genius architectural walls are designed and manufactured offsite, then installed in the building, with a floor-to-ceiling vertical span and meet the requirements of the International Building Code. These interior walls are constructed using ecologically sound materials and manufacturing processes. The wall system integrates with workspaces, storage and accessories to create streamlines workstations, conference rooms, training rooms and more. They may be moved to another location without losing any performance characteristics. This EPD is for a solid wood panel manufactured in Manitowoc, Wisconsin. FSC wood is available upon request.

Producer: KI is a contract furniture company that manufactures innovative furniture and movable wall systems for educational, university, business and government markets.

Independent Verification

Independent verification of the declaration and data, according to ISO 14025: ☐ internal ☑ external

Thomas Gloria
t.gloria@industrialecology.com
LCACP#: 2008-3

Summary of Life Cycle Impacts and Inventory per m^2-30 yr, meeting IBC requirements for interior walls		
Climate Change	**180**	kg CO_2-eq
Acidification	**2.2**	kg SO_2-eq
Eutrophication	**0.61**	kg N-eq
Ozone Depletion	**$1.2x10^{-5}$**	kg CFC-11-eq
Photochemical Smog	**16**	kg O_3-eq
Ecotoxicity	**0.84**	CTUe
Human Health – Air	**0.16**	kg PM2.5-eq
Primary Energy Consumption	**4,400**	MJ non-renewable
	150	MJ renewable
Freshwater Consumption	**1,800**	L
Waste Production	**0.087**	kg hazardous
	64	kg non-hazardous
Material Resource Consumption	**190**	kg non-renewable
	2.7	kg renewable
Land Use	**43**	m^2-yr

LIFE CYCLE IMPACT ASSESSMENT RESULTS

For one square meter of interior wall conforming to the International Building Code for thirty years, using TRACI 2.1 Life Cycle Indicators (CML in parentheses):

Life Cycle Impact		Total	Stage I	Stage II	Stage III	Stage IV:	Units
			Production	Installation	Use	End of Life	
	Climate Change	180	130	16	0.00	31	kg CO_2-eq
		(180)	(130)	(16)	(0.00)	(31)	kg CO_2-eq
	Acidification	2.2	2.1	0.11	0.00	0.032	kg SO_2-eq
		(2.4)	(2.3)	(0.10)	(0.00)	(0.031)	kg SO_2-eq
	Eutrophication	0.61	0.21	0.040	0.00	0.35	kg N-eq
		(0.30)	(0.14)	(0.027)	(0.00)	(0.13)	kg PO_4^{3-}-eq
	Ozone Depletion	$1.2x10^{-5}$	$9.4x10^{-6}$	$2.0x10^{-6}$	0.00	$2.6x10^{-7}$	kg CFC-11-eq
		$(1.2x10^{-5})$	$(9.2x10^{-6})$	$(2.0x10^{-6})$	(0.00)	$(2.6x10^{-7})$	kg CFC-11-eq
	Photochemical Smog	16	13	2.8	0.00	0.39	kg O_3-eq
		(0.11)	(0.10)	(0.0041)	(0.00)	(0.0077)	kg C_2H_4-eq
	Ecotoxicity	0.84	0.34	0.49	0.00	0.0049	CTUe
		(0.55)	(0.45)	(0.025)	(0.00)	(0.080)	kg 1,4-DB-eq
	Human Health- Air	0.16	0.15	0.0080	0.00	0.0022	kg PM2.5-eq

LIFE CYCLE INVENTORY INFORMATION

For one square meter of interior wall conforming to the International Building Code for thirty years.

Inventory Item	Amount	Units
Primary Energy Consumption	4,400	MJ non-renewable
	150	MJ renewable
Freshwater Consumption	1,800	L
Waste Production	0.087	kg hazardous
	64	kg non-hazardous
Material Resource Consumption	190	kg non-renewable
	2.7	kg renewable
Land use	43	m^2 yr

HAZARDOUS MATERIAL CONTENT

For one square meter of interior wall conforming to the International Building Code for thirty years (at least 0.1% using California DTSC Candidate Chemical List).

Material	CAS Number	Amount (%)
Aluminum	7429-90-5	17%
Bisphenol A, Epichlorohydrin Epoxy Resin	25036-25-3	0.18%
Titanium dioxide	13463-67-7	0.18%
Zinc	7440-66-6	0.68%

ADDITIONAL ENVIRONMENTAL INFORMATION

For one square meter of interior wall conforming to the International Building Code for thirty years.

VOC emissions per BIFMA X7.1	passed
Recycled content	28% (pre-consumer)
	4.0% (post-consumer)
Recyclable content*	21%
Organization's use of environmental management system	ISO 9001
Other environmental certification programs	level 2, Indoor Advantage Gold

*Recyclable portion based on steel and aluminum in the wall panel. Recycling facilities may not be available in all areas.



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