ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	dormakaba International Holding GmbH
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-DOR-20160280-ICA1-EN
Issue date	24.04.2017
Valid to	23.04.2023

Crane SS 2000/3000 - Manual Revolving Door dormakaba



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General Information

dormakaba

Programme holder

IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany

Declaration number

EPD-DOR-20160280-ICA1-EN

This Declaration is based on the Product Category Rules:

Automatic doors, automatic gates, and revolving door systems, 07.2014 (PCR tested and approved by the SVR)

Issue date 24.04.2017

Valid to 23.04.2023

Wermanes

Prof. Dr.-Ing. Horst J. Bossenmayer (President of Institut Bauen und Umwelt e.V.)

Dr. Burkhart Lehmann (Managing Director IBU)

Product

Product description / Product definition

Revolving doors represent an alternative entrance option that minimizes airflow between the outside and inside while allowing for continuous traffic flow. A revolving door can also create a sealed barrier at the building envelope, reducing the load on HVAC systems and saving energy in the process.

The Crane SS series uses a fully formed and welded stainless steel canopy and enclosure. The 2000 series utilizes stainless steel clad construction over an aluminum sub frame for the door leaves. The 3000 series utilizes fully formed and welded stainless steel construction door leaves.

The heavy-duty hardware used in all Crane revolving doors complies with all state and federal requirements for providing emergency egress.

The Crane manual revolving door utilizes a fully adjustable mechanical speed control which meets governing building codes and requires no electrical connection.

Crane SS 2000/3000 - Manual Revolving Door

Owner of the Declaration dormakaba International Holding GmbH DORMA Platz 1 58256 Ennepetal Deutschland

Declared product / Declared unit

The declaration represents one manual revolving door, consisting of four (4) door leaves and with a diameter of 7 ft. (2130 mm) and a height of 7.5 ft. (2290 mm).

Scope:

The declaration and background LCA report represent DORMA's Crane SS 2000 / 3000 manual revolving doors. Raw materials and components are provided by suppliers and shipped to DORMA's facility in Illinois, USA, where doors are manufactured and assembled before being shipped to job sites.

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Verification

The CEN Norm /EN 15804/ serves as the core PCR
Independent verification of the declaration
according to /ISO 14025/
internally x externally



Dr.-Ing. Wolfram Trinius (Independent verifier appointed by SVR)

All Crane revolving doors are furnished with factorymade seals, which provide a durable dynamic barrier between inside and outside environments.

Crane manual revolving doors can be manufactured in a range of 1.83 m (6 ft) to 3.05 m (10 ft) diameter, and can accommodate virtually any attachment plan that the architect has in their vision for the building.

For the use and application of the product, the respective national provisions at the place of use apply. In the United States, for example, this would be the relevant building codes and the corresponding national specifications.

Application

Revolving doors may be used to provide a comfortable entry and exit in many applications in the facade of or within a building.

Typical applications include:

- Hotels
- Healthcare settings

- Airports and transportation facilities
- Commercial office buildings
- Institutional and educational buildings
- Retail stores

Technical Data

The technical features for the Crane SS 2000/3000 manual revolving door are as follows:

Constructional data

Name	Value	Unit
Height range 2000	7-9	ft
Height range 3000	7+ with engineer ing approval	ft
Diameter range 2000/3000	6 ID to 12 OD	ft
Enclosure glass 2000	7/16" clear or tinted laminate d	
Enclosure glass 3000	9/16" clear or tinted laminate d	
Door leaf glass	1/4" tempere d	
Emergency egress control	Crane adjustabl	

LCA: Calculation rules

Declared Unit

The declared unit for this analysis is one (1) revolving door system.

Decl	ared	unit

Name	Value	Unit
Declared unit for revolving door system*	4.9	m²
Mass of the entire system	675	kg
Conversion factor to 1 kg	0.0015	-
Grammage of the components	138	kg/m ²
Dimensions for revolving door, diameter	2130	mm
Dimensions for revolving door, height	2290	mm

* Area represents the cross-sectional area of the door, which is designed to fit in an opening of 2130-mm wide by 2290-mm high (7 ft. by 7.5 ft.).

System boundary

Type of EPD: cradle-to-grave. The following modules were considered in this analysis:

Product stage

- Raw material supply (A1)
- Transport (A2)
- Manufacturing (A3)

	e bookfold design
	Crane
Speed control	mechani cal
	design

Base materials / Ancillary materials

The basic material composition of the door is given below. The door is primarily manufactured from stainless steel and glass.

Name	Value	Unit
Stainless steel	42	%
Glass	37	%
Steel	10	%
Bronze	6	%
Plastic	2	%
Chipboard	2	%
Other	1	%

Reference service life

The reference service lives of the revolving doors will ultimately depend on the traffic pattern and degree of usage of the doors. A reference service life of 30 years is assumed for calculation of the Use Stage impacts of the Crane SS 2000/3000 manual revolving door.

Construction stage

- Transport to the building site (A4)
- Installation, including packaging disposal (A5)

Use stage

Maintenance (B2)

End-of-life stage

- Transport to disposal (C2)
- Waste processing (C3)
- Disposal (C4)

Benefits and loads beyond the system boundary

• Reuse, recovery, and recycling potential (D)

Submodules that were not declared either do not apply and would therefore be zero, or are estimated to fall below the cut-off criteria.

Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to /EN 15804/ and the building context, respectively the product-specific characteristics of performance, are taken into account.

LCA: Scenarios and additional technical information

Additional information is provided for the declared modules, including A4, A5, B2, C2, C4, and D. In order to represent DORMA's global distribution network, sales-weighted averages are used to model transport to the building sites.

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel	30	l/100km
Transport distance	2500	km
Capacity utilisation (including empty runs)	75	%

Installation into the building (A5)

Name	Value	Unit
Packaging waste for disposal (wood)	209	kg
Packaging waste for disposal (other)	19	kg

Maintenance (B2)

Name	Value	Unit
Maintenance cycle	1	Number/ RSL
Replacement components	7	kg

Reference service life

Name	Value	Unit
Reference service life	30	а

End of life (C1-C4)

Name	Value	Unit
Collected separately	331	kg
Collected as mixed construction waste	343	kg
Recycling	331	kg
Landfilling	343	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information

Name	Value	Unit
Collection rate, aluminum	90	%
Collection rate, bronze	45	%
Collection rate, steel	81	%

LCA: Results

The table below summarizes which modules are declared and which are not declared. Environmental performance results are shown for one (1) piece of revolving door and represent the average of Crane SS 2000/3000 manual revolving doors produced at DORMA's facility.

DESC	RIPT		F THE	SYS	EM B	OUND	ARY (X = IN		ED IN	LCA;	MND =	MOD	ULE N	OT DE	ECLARED)
PROE	DUCT S	STAGE	CONST ON PRO	OCESS			US	SE STA	GE			EN	D OF LI	FE STA	GE	BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse- Recovery- Recycling- potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Х	Х	X	Х	Х	MND	Х	MNR	MNR	MNR	MND	MND	MND	Х	X	Х	Х
RESU	JLTS	OF TH	IE LCA	- EN'	VIRON	MENT	AL IM	PACT	: one i	revolv	ing do	or sys	tem			
Param eter	U	Jnit	A1-	A3	A4		A5		B2		C2		C3		C4	D
GWP		O ₂ -Eq.]	2.88		3.58E		2.62E+		1.06E+2		1.11E+1		.00E+0	1.	86E+1	-1.64E+2
ODP AP		C11-Eq.] O ₂ -Eq.]	2.37 2.84		2.90E 1.04E		2.26E- 5.28E-		1.63E-8 4.52E-1		8.96E-11 3.10E-2		.00E+0		15E-10 58E-2	-4.98E-6 -1.65E+0
EP		<u>O₂ =q.j</u> O₄) ³⁻ -Eq.]	1.38		2.61E		4.55E-		3.68E-2		7.96E-3		.00E+0		87E-2	-9.56E-2
POCP		ene-Eq.]	1.52		1.28E		1.47E-		3.96E-2		3.91E-3		.00E+0		55E-3	-3.84E-2
ADPE ADPF		Sb-Eq.] MJ]	2.48		5.26E 4.95E		4.46E- 2.06E+		5.13E-3		1.63E-6 1.53E+2		.00E+0		31E-6 49E+2	-3.76E-2 -2.03E+3
GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources RESULTS OF THE LCA - RESOURCE USE: one revolving door system																
RL3C									ivilig (ystem					
Damana									D0		00		00		~	
Parame		Unit	A1-A3		A4		A5		B2		C2		C3		C4	D
PER	E	[MJ]	8.23E+	-3	8.20E+1		1.09E+1		1.44E+2		2.54E+0		00E+0	1.6	62E+1	-6.57E+2
	E M			-3 -2))				0.	00E+0 00E+0 00E+0	1.6		
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PERI PERI PERI PENF	E M T RE RM	[MJ] [MJ] [MJ] [MJ] [MJ]	8.23E+ 2.00E+ 8.43E+ 3.86E+ 3.53E+	-3 -2 -3 -4 -2	8.20E+1 0.00E+0 8.20E+1 4.97E+3 0.00E+0) }	1.09E+1 0.00E+0 1.09E+1 2.10E+2 0.00E+0) }	1.44E+2 0.00E+0 1.44E+2 1.55E+3 0.00E+0		2.54E+0 0.00E+0 2.54E+0 1.54E+2 0.00E+0	0. 0. 0.	00E+0 00E+0 00E+0 00E+0 00E+0	1.6 0.0 1.6 2.5	62E+1 00E+0 62E+1 66E+2 00E+0	-6.57E+2 0.00E+0 -6.57E+2 -2.61E+3 0.00E+0
PERI PERI PER PENF	E M T RE RM RT	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	8.23E+ 2.00E+ 8.43E+ 3.86E+	-3 -2 -3 -4 -4 -2 -4 -4	8.20E+1 0.00E+0 8.20E+1 4.97E+3) 	1.09E+1 0.00E+0 1.09E+1 2.10E+2		1.44E+2 0.00E+0 1.44E+2 1.55E+3		2.54E+0 0.00E+0 2.54E+0 1.54E+2	0. 0. 0. 0.	00E+0 00E+0 00E+0 00E+0	1.6 0.0 1.6 2.5 0.0	32E+1 00E+0 32E+1 56E+2	-6.57E+2 0.00E+0 -6.57E+2 -2.61E+3
PERI PERI PERI PENF PENF PENF SM RSF	E	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [kg] [MJ]	8.23E+ 2.00E+ 8.43E+ 3.86E+ 3.53E+ 3.89E+ 3.43E+ 4.16E-	3 2 3 4 2 4 2 2 2	8.20E+1 0.00E+0 8.20E+1 4.97E+3 0.00E+0 4.97E+3 0.00E+0 0.00E+0)	1.09E+1 0.00E+0 1.09E+1 2.10E+2 0.00E+0 2.10E+2 0.00E+0 0.00E+0		1.44E+2 0.00E+0 1.44E+2 1.55E+3 0.00E+0 1.55E+3 0.00E+0 0.00E+0		2.54E+0 0.00E+0 2.54E+0 1.54E+2 0.00E+0 1.54E+2 0.00E+0 0.00E+0	0. 0. 0. 0. 0. 0. 0.	00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0	1.6 0.0 1.6 2.5 0.0 2.5 0.0 0.0	52E+1 50E+0 52E+1 56E+2 56E+2 56E+2 56E+2 56E+2 00E+0 00E+0	-6.57E+2 0.00E+0 -6.57E+2 -2.61E+3 0.00E+0 -2.61E+3 0.00E+0 -1.66E-2
PERI PERI PERI PENF PENF SM RSF	E	[MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ] [MJ]	8.23E+ 2.00E+ 8.43E+ 3.86E+ 3.53E+ 3.43E+ 3.43E+ 4.16E- 1.24E-	-3 -2 -3 -4 -2 -4 -2 -4 -2 -2 -2 -2 -2 -1	8.20E+1 0.00E+0 8.20E+1 4.97E+3 0.00E+0 4.97E+3 0.00E+0 0.00E+0 0.00E+0)	1.09E+1 0.00E+0 1.09E+1 2.10E+2 0.00E+0 2.10E+2 0.00E+0 0.00E+0 0.00E+0		1.44E+2 0.00E+0 1.44E+2 1.55E+3 0.00E+0 1.55E+3 0.00E+0 0.00E+0 0.00E+0		2.54E+0 0.00E+0 2.54E+0 1.54E+2 0.00E+0 1.54E+2 0.00E+0 0.00E+0 0.00E+0	0. 0. 0. 0. 0. 0. 0. 0.	00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0	1.6 0.0 1.6 2.5 0.0 2.5 0.0 0.0 0.0	32E+1 30E+0 32E+1 36E+2 30E+0 36E+2 30E+0 30E+0 30E+0 30E+0 30E+0 30E+0	-6.57E+2 0.00E+0 -6.57E+2 -2.61E+3 0.00E+0 -2.61E+3 0.00E+0 -1.66E-2 -1.49E-1
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PERI PERI PENF PENF PENF SM RSF FW Caption	E M T RE RE RE R R F F F F F rene r rene of se	[MJ] [m³] PERE = I wable proon-rene wable proon-rene wable proon-rene wable proon-rene wable proon-rene wable proon-rene	8.23E+ 2.00E+ 8.43E+ 3.86E+ 3.53E+ 3.43E+ 4.16E- 1.24E- 1.38E+ Use of re- imary er wable pr rimary er wable pr rimary er (material	3 2 2 3 4 4 2 2 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	8.20E+1 0.00E+C 8.20E+1 4.97E+3 0.00E+C 4.97E+3 0.00E+C 0.00E+C 0.00E+C 1.00E+C 1.00E+C sources t nergy exc) 3 3 3 3 3 3 3 3 3 3 3 3 3	1.09E+1 0.00E+0 1.09E+1 2.10E+2 0.00E+0 2.10E+2 0.00E+0 0.00E+0 0.00E+0 0.00E+0 6.46E-2 excludir raw mat non-rene raw mat	ng renev erials; F ewable p terials; fu	1.44E+2 0.00E+0 1.44E+2 1.55E+3 0.00E+0 1.55E+3 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 6.66E-1 wable pri PERT = T primary e PENRT = els; NRS wate	mary en otal use nergy re Total u F = Use	2.54E+0 0.00E+0 2.54E+0 1.54E+2 0.00E+0 1.54E+2 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 3.12E-2 ergy rese of renew sources se of nor-	0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0	00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0	1.6 0.0 2.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	32E+1 30E+0 32E+1 36E+2 00E+0 36E+2 00E+0 00	-6.57E+2 0.00E+0 -6.57E+2 -2.61E+3 0.00E+0 -2.61E+3 0.00E+0 -1.66E-2 -1.49E-1 -2.12E+0 ERM = Use of PENRE = Use of = Use of non- urces; SM = Use
PERI PERI PENF PENF SM RSF NRSS FW Caption	E M T RE R R R F F F F F F F F F F F F F F F	MJ MJ MJ MJ MJ MJ MJ MJ (kg) (MJ (kg) (MJ) (m ³) PERE = 0 exable pr non-rene exable pr non-rene exable pr non-rene exable pr non-rene (kg) OF TH ring do	8.23E+ 2.00E+ 8.43E+ 3.86E+ 3.53E+ 3.53E+ 3.43E+ 4.16E- 1.24E- 1.24E- 1.38E+ Use of re imary er wable pr rimary er wable pr	3 2 3 4 2 4 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	8.20E+1 0.00E+1 4.97E+3 0.00E+0 4.97E+3 0.00E+0 0.00E+0 0.00E+0 0.00E+0 1.00E+0 0.00E+0 1.00E+0 e primary sources u hergy exc sources i Use of r) 3 3 3 3 3 3 3 3 3 3 3 3 3	1.09E+1 0.00E+0 1.09E+1 2.10E+2 0.00E+0 2.10E+2 0.00E+0 0.00E+0 0.00E+0 0.00E+0 6.46E-2 excludir raw mat non-rene raw mat	ng renev erials; F ewable p terials; fu	1.44E+2 0.00E+0 1.44E+2 1.55E+3 0.00E+0 1.55E+3 0.00E+0 0.00E+0 0.00E+0 6.66E-1 wable pri 2ERT = T primary e PENRT = els; NRS wate STE C, B2	mary en otal use nergy re Total u F = Use	2.54E+0 0.00E+0 2.54E+0 1.54E+2 0.00E+0 1.54E+2 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 3.12E-2 ergy rese of renew sources se of nor-	0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0	00E+0 00	1.6 0.0 1.6 2.5 0.0 0.0 0.0 0.0 0.0 3.9 aw mate ergy res erials; P ary ener dary fuel	22E+1 00E+0 22E+1 66E+2 00E+0 00	-6.57E+2 0.00E+0 -6.57E+2 -2.61E+3 0.00E+0 -2.61E+3 0.00E+0 -1.66E-2 -1.49E-1 -2.12E+0 ERM = Use of PENRE = Use of = Use of non- urces; SM = Use
PERI PERI PERI PENI PENI SM RSF NRS FW Caption	E M T RE R R F F F F F F F F F F F F F F F F	[MJ] [M] [M	8.23E+ 2.00E+ 8.43E+ 3.86E+ 3.53E+ 3.43E+ 4.16E- 1.24E+ 1.24E+ 1.24E+ Use of re- imary er wable pr rimary er wable pr rimary er wable pr rimary er wable pr rimary er Mathematical Second Second 9.56E-	3 2 3 4 2 4 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	8.20E+1 0.00E+C 8.20E+1 4.97E+3 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 1.00E+	Control Contro Control Control Control Control Control Control Control Control Co	1.09E+1 0.00E+0 1.09E+1 2.10E+2 0.00E+0 0.00E+	ng renev erials; F ewable p terials; I ndary fu	1.44E+2 0.00E+0 1.44E+2 1.55E+3 0.00E+0 1.55E+3 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+T PERT = T primary e PERT = T primary e PERT = T primary e STE C. B2 5.96E-5	mary en otal use nergy re Total u F = Use r ATEG	2.54E+0 0.00E+0 2.54E+0 1.54E+2 0.00E+0 1.54E+2 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 3.12E-2 ergy ress of renew se of non-r of non-r ORIES C2 1.95E-7	0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0	00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 c3 00E+0	1.6 0.0 1.6 2.5 0.0 0.0 0.0 0.0 0.0 3.3 aw mate ergy res erials; P ary ener dary fuel	22E+1 00E+0 02E+1 06E+2 00E+0 00	-6.57E+2 0.00E+0 -6.57E+2 -2.61E+3 0.00E+0 -2.61E+3 0.00E+0 -1.66E-2 -1.49E-1 -2.12E+0 ERM = Use of PENRE = Use of PENRE = Use of Use of non- urces; SM = Use Use of net fresh D -2.89E-3
PERI PERI PERI PENI PENI SM RSF NRS FW Caption	F F F F F F F F F F F F F F F F F F F	[MJ] [M] [8.23E+ 2.00E+ 8.43E+ 3.86E+ 3.89E+ 3.43E+ 4.10E- 1.24E- 1.24E- 1.38E+ Use of re- rimary er wable pr rimary er wable pr rimary er y materia IE LCA 007 SYS A1-A3 9.56E- 3.11E+	3 2 3 4 4 2 4 2 2 1 1 2 2 1 1 2 2 1 1 2 2 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	8.20E+1 0.00E+C 8.20E+1 4.97E+3 0.00E+C 4.97E+3 0.00E+C 0.00E+C 0.00E+C 1.0	flov	1.09E+1 0.00E+0 1.09E+1 1.09E+1 2.10E+2 0.00E+0 0.0	ng renev erials; F wwable p terials; I ndary fu	1.44E+2 0.00E+0 1.44E+2 1.55E+3 0.00E+0 1.55E+3 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+5 STE C 5.96E-5 4.76E+0	mary en fotal use nergy re Total u F = Use r ATEG	2.54E+0 0.00E+0 2.54E+0 1.54E+2 0.00E+0 1.54E+2 0.00E+0 0.00E+0 0.00E+0 0.00E+0 3.12E-2 ergy ress e of non-r orner of non-r ORIES C2 1.95E-7 5.41E-3	0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0	00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0	1.6 0.0 2.5 0.0 2.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	22E+1 30E+0 32E+1 36E+2 30E+0 30E+0 30E+0 30E+0 30E+0 30E+2 30E+2 30E-2 7 7 7 8 8 8 7 8 8 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8	-6.57E+2 0.00E+0 -6.57E+2 -2.61E+3 0.00E+0 -2.61E+3 0.00E+0 -1.66E-2 -1.49E-1 -2.12E+0 IRM = Use of PENRE = Use of PENRE = Use of suse of non- urces; SM = Use Use of net fresh D -2.89E-3 -7.75E+1
PERI PERI PERI PENI PENI PENI SM RSS FW Caption RESU One r Parame HWI NHW RWI CRU	E M T RE R R F F F F F rene of se of se of se of se O V C D D D J	[MJ] [M] [M	8.23E+ 2.00E+ 8.43E+ 3.86E+ 3.53E+ 3.43E+ 4.16E- 1.24E+ 1.24E+ 1.24E+ Use of re- imary er wable pr rimary er wable pr rimary er wable pr rimary er wable pr rimary er Mathematical Second Second 9.56E-	3 2 3 4 2 4 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 1 2 2 2 1 2 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2	8.20E+1 0.00E+C 8.20E+1 4.97E+3 0.00E+C 4.97E+3 0.00E+C 0.00E+C 0.00E+C 0.00E+C 0.00E+C 1.00E+C e primary sources to nergy exc sources to sources to sources to sources to sources to sources to sources to sources to sources to nergy exc sources to sources to to sources to sources to sou	0 1 3 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.09E+1 0.00E+0 1.09E+1 2.10E+2 0.00E+0 0.00E+	ng renever erials; F evwable p terials; T ndary fu	1.44E+2 0.00E+0 1.44E+2 1.55E+3 0.00E+0 1.55E+3 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 6.66E-1 wable pri FERT = T primary e PENRT = 2 PENRT = 2 STE C. B2 5.96E-5 4.76E+0 3.52E-2 0.00E+0	mary en Total use Total u F = Use r ATEG	2.54E+0 0.00E+0 2.54E+0 1.54E+2 0.00E+0 1.54E+2 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+0 0.00E+2 1.95E-7 5.41E-3 3.24E-4 0.00E+0	0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0	00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0 00E+0	1.6 0.0 1.6 2.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	22E+1 30E+0 32E+1 36E+2 30E+0 30E+0 30E+0 30E+0 30E+2 30E+2 30E+2 30E+2 30F-3 30E+2 30E-7 38E+2 30E-3 30E+0	-6.57E+2 0.00E+0 -6.57E+2 -2.61E+3 0.00E+0 -2.61E+3 0.00E+0 -1.66E-2 -1.49E-1 -2.12E+0 ERM = Use of PENRE = Use of PENRE = Use of Use of non- urces; SM = Use Use of net fresh -2.89E-3 -7.75E+1 -2.11E-1 0.00E+0
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The revolving door environmental footprint is primarily dominated by materials production (Module A1). Materials used during door maintenance also represent a non-negligible contribution to abiotic depletion potential of elements.

In order to capture DORMA's global sales network, the LCA assumes a sales-weighted distribution distance based on the countries and regions where Crane doors are sold. Finished products are primarily shipped within North America, but are also sent to South America.

Module D is associated with a comparatively large contribution to ozone depletion potential. This is driven by a difference in furnace technologies used to produce primary and secondary steel, combined with the amount of secondary material for steel production in Module A1 exceeding the amount of steel recovered at end-of-life (Module C3).

At the end-of-life, the metal components of the revolving door are modeled as being recycled. A portion of the steel and bronze are recovered and the remainder landfilled. Glass, however, is assumed to be sent entirely to landfill as recycling this material from demolished buildings is not considered common practice.

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