Statement of Verification

BREG EN EPD No: 000755 Issue: 01

This is to verify that the Environmental Product Declaration provided by:

Teknion Furniture Systems (M) Sdn Bhd

are in accordance with the requirements of:

EN 15804:2012+A2:2019

and

BRE Global Scheme Document SD207

This declaration is for:
Expansion rectangular conference table with 6 steel blade legs and the dimensions of 1600 mm x 2400 mm and a weight of 160 kg. Service life 10 years

Company Address

Teknion Furniture Systems (M) Sdn Bhd
Lot 761, Jalan Haji Sirat,
Off Jalan Meru,
42100 Klang,
Selangor

teknion

Signed for BRE Global Limited — Hayley Thomson, Operator

12 January 2026	12 January 2026	11 January 2031
Date of this Issue	Date of First Issue	Expiry Date

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Environmental Product Declaration

EPD Number: 000755

General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE Environmental Profiles 2025 Product Category Rules for Type III environmental product declaration of construction products to EN 15804+A2 PN 514 Rev 3.2
Commissioner of LCA study	**LCA consultant/Tool**
Teknion Furniture Systems (M) Sdn Bhd, Lot 761, Jalan Haji Sirat, Off Jalan Meru, 42100 Klang, Selangor	Grace Ong / LINA A2
Declared/Functional Unit	**Applicability/Coverage**
Expansion rectangular conference table with 6 steel blade legs and the dimensions of 1600 mm x 2400 mm and a weight of 160 kg. Service life 10 years.	Other (please specify). Product specific
EPD Type	**Background database**
Cradle to Grave	Ecoinvent 3.8
Demonstration of Verification	
CEN standard EN 15804 serves as the core PCR [a]	
Independent verification of the declaration and data according to EN ISO 14025:2010 ☒Internal ☐ External	
(Where appropriate [b]) Third party verifier: Flavie Lowres	
a: Product category rules b: Optional for business-to-business communication; mandatory for business-to-consumer communication (see EN ISO 14025:2010, 9.4)	
Comparability	
Environmental product declarations from different programmes may not be comparable if not compliant with EN 15804:2012+A2:2019. Comparability is further dependent on the specific product category rules, system boundaries and allocations, and background data sources. See Clause 5.3 of EN 15804:2012+A2:2019 for further guidance	

Information modules covered

Product			Construction		Use stage							End-of-life					Benefits and loads beyond the system boundary
					Related to the building fabric					Related to the building							
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4		D
Raw materials supply	Transport	Manufacturing	Transport to site	Construction – Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal		Reuse, Recovery and/or Recycling potential
☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑		☑

Note: Ticks indicate the Information Modules declared.

Manufacturing site(s)

Teknion Malaysia,
Teknion Furniture Systems (M) Sdn Bhd,
Lot 761, Jalan Haji Sirat, Off Jalan Meru,
42100 Klang,
Selangor

Construction Product:

Product Description

Expansion® conference tables are designed to complement the Expansion Casegoods offering. The line comprises several table shapes and support options and can be equipped with an integrated wire management system that delivers power and data to the table surface. The Expansion meeting table series offers small huddle spaces to large workshop configurations, from private enclaves to boardrooms.

This analysis pertains to an Expansion rectangular conference table (product code: MBC_CRLB), with six steel blade legs and a foundation-laminate worktop. The table is available in two finish options—source laminate (low pressure laminate LPL) and foundation laminate (high pressure laminate HPL). The worktop is made of a medium-density fibreboard (MDF).

The dataset used for the LCA analysis does not include the finishing layer; however, the laminate manufacturer has provided GWP impacts for high-pressure laminate. For 1 m² of finished panel with a 0.8 mm thickness and a mass of 1.208 kg/m², the total GWP impact is 2.98 kg CO_2e/m². The dimensions of this conference table is 1600 mm x 2400 mm and the weight is 160 kg. The impact of the finishes (HPL) for this table would be an additional 11.4 kgCO_2eq.

This product is determined to be a representative product based on sales of the variations. While the exact configuration purchased may be slightly different, it is expected to have impacts within 10% of this representative configuration.

For more information on Expansion® products: **Expansion**

Technical Information

Environmental Certifications:

Applicable Standard	Description
Indoor Advantage™ Gold	Registration # SCS-IAQ-05316

Main Product Contents

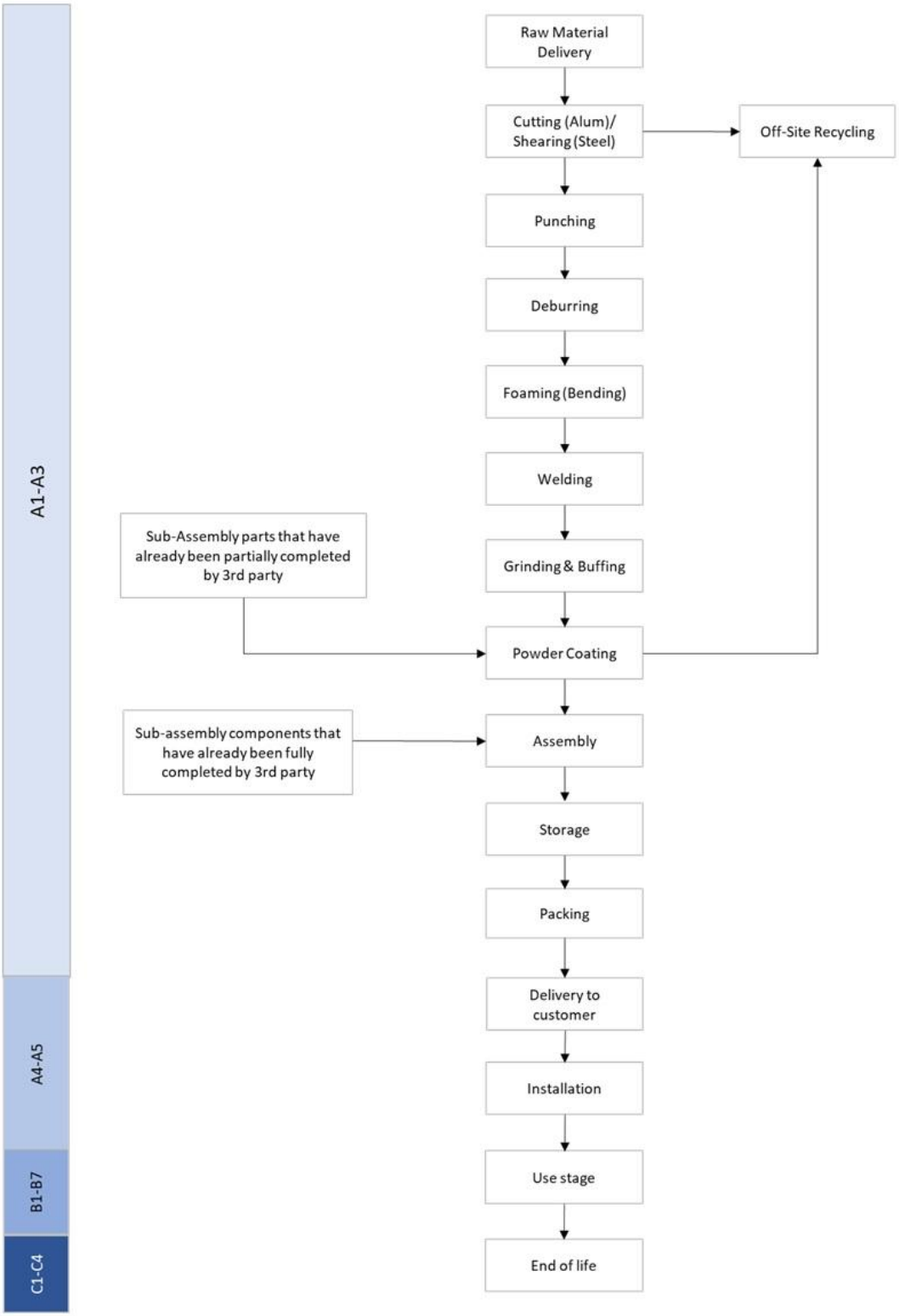
Like many commercial furniture products Expansion conference/meeting table is available in a wide range of configurations. For the purposes of this study, a representative configuration was selected. The composition of this configuration is detailed in the table below.

Material/Chemical Input	%
MDF	67.38%
Steel	21.52%
Aluminium	10.66%
Polypropylene	0.01 %
Polyamide 6	0.01%
Other	0.42 %

Manufacturing Process

Metal parts undergo several processes, including cutting, punching, deburring, bending, welding, grinding, and buffing, followed by powder coating. Worksurfaces, sub-assembly components and metal components are assembled and packed ready for delivery.

Process flow diagram



Construction Installation

The product is installed manually using basic hand tools, requiring minimal energy input.

Use Information

No specific maintenance is required, and Expansion conference table are expected to outlast their intended lifespan, provided they are maintained according to the recommended care procedures.

End of Life

At the end of the product's life, the Expansion conference table is dismantled, and materials are separated. Energy consumption is minimal due to manual dismantling with no involvement of machinery or power. It is assumed that 100% of the product is recovered at the demolition and sent to the waste processing facility for waste treatment.

Life Cycle Assessment Calculation Rules

Functional unit description

Expansion rectangular conference table with 6 steel blade legs and the dimensions of 1600 mm x 2400 mm and a weight of 160 kg. Service life 10 years.

System boundary

This is a Cradle-to-Grave EPD, reporting the upstream processing stages A1 to A3, Construction and Installation (A4-A5), Use stages (B1 to B7), end-of-life stages (C1 to C4) and Module D in accordance with EN15804:2012+A2:2019 and BRE 2025 Product Category Rules (PN 514 Rev 3.2). The study period used in the LCA analysis is 10 Years.

Data sources, quality and allocation

For the Life Cycle Assessment (LCA) and Environmental Product Declaration (EPD), Teknion utilised specific primary data extracted from its production operations at Teknion Malaysia and India factory, modelled using the LINA A2 LCA and the Ecoinvent 3.8 database. In accordance with the requirements of EN15804:2012 + A2:2019, the most current available data has been used. Manufacturer-specific data has been used for the LCA analysis.
The data represents one unit of the Expansion conference table, based on production period between 01/12/2023 and 30/11/2024 from Teknion Malaysia's factory. A production quantity of one unit was used, as the data was sourced directly from the ERP system.

The primary production figures are taken from the manufacturers ERP system, and the secondary datasets are derived from Ecoinvent v3.8, and the LCA tool used was BRE LINA A2. The LCA analysis is conducted for the Expansion rectangular conference table with dimensions D1600 mm x W2400 mm and a weight of 160 kg. For the production process, the facility uses the national grid consumption mix for the production.

In addition to the Expansion conference table, other products are manufactured in the factory. Therefore, the allocation of electricity, fuel, water consumption, and discharge are required. There are multiple configurations and combinations of products produced on the production line (in terms of size, accessories, etc.).

Therefore, allocating energy consumption, water, other waste, and wastewater based on mass would assign higher values to certain products. Instead, using the sales revenue of the product line relative to the total revenue is more accurate. Therefore, energy, water, other waste, and wastewater leaving the factory has been allocated based on the % revenue of the product line over the total revenue. Actual usage figures were employed for raw materials, packaging, and production waste are taken from ERP system.

Upon data review, it was noted that the mass balance is within the acceptable range, and no data uplift has been performed. In addition, no proxy dataset was used for the LCA modelling.
Secondary data has been obtained for all other upstream and downstream processes that are beyond the control of the manufacturer (i.e. raw material production) from the Ecoinvent 3.8 database. All Ecoinvent datasets are complete within the context used and conform to the system boundary and the criteria for the exclusion of inputs and outputs, according to the requirements specified in EN 15804:2012+A2:2019.

ISO14044 guidance. Quality Level	Geographical representativeness	Technical representativeness	Time representativeness
Very Good	Data from area under study.	Data from processes and products under study. Same state of technology applied as defined in goal and scope (i.e., identical technology).	There is approximately 1-2 years between the Ecoinvent LCI reference year, and the time period for which the LCA was undertaken.

Manufacturer country specific datasets have been selected from the Ecoinvent LCI for this LCA. Teknion Malaysia uses national grid electricity and natural gas for production, so therefore for the LCA modelling the location-based electricity dataset has been used for the LCA modelling (Ecoinvent 3.8).

The GWP carbon footprint for using 1 kWh of Electricity, medium voltage {Ma}| market for electricity, medium voltage | EN15804, U', 2014, with an emission factor of 0.840 kgCO2e/kWh.
The GWP carbon footprint for using 1 kWh of Natural gas at industrial furnace (RoW) is 0.256 kgCO2e/kWh.

The quality level of time representativeness is also Very Good as the background LCI datasets are based on Ecoinvent v3.8 which was compiled in 2021. Therefore, there is less than 5 years between the Ecoinvent LCI reference year and the time period for which the LCA was undertaken.

Cut-off criteria

In the manufacturing site, all raw materials and energy inputs to the manufacturing process have been included, except the ancillary materials and direct emissions to air, water, and soil, which are not measured at the manufacturing facility. In the Teknion Malaysia LCA inventory process, all data related to raw materials, and packaging materials are included in the modelling

LCA Results (not including finishes)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Note: The dataset used for the LCA analysis does not include the finishing layer; however, the laminate manufacturer has provided GWP impacts for high-pressure laminate. For 1 m² of finished panel with a 0.8 mm thickness and a mass of 1.208 kg/m², the total GWP impact is 2.98 kg CO_2e/m². The dimensions of this conference table is 1600 mm x 2400 mm and the weight is 160 kg. The impact of the finishes (HPL) for this table would be an additional 11.4 kgCO_2eq.

Parameters describing environmental impacts

			GWP-total	GWP-fossil	GWP-biogenic	GWP-luluc	ODP	AP	EP-freshwater
			kg CO_2 eq	kg CO_2 eq	kg CO_2 eq	kg CO_2 eq	kg CFC11 eq	mol H^+ eq	kg $(PO_4)^{3-}$ eq
Product stage	Raw material supply	A1	2.04E+02	3.22E+02	-1.19E+02	5.05E-01	2.14E-05	1.92E+00	1.30E-01
	Transport	A2	2.51E+00	2.50E+00	7.15E-04	1.64E-03	5.05E-07	3.43E-02	1.94E-04
	Manufacturing	A3	5.37E+01	5.38E+01	-3.79E-01	2.21E-01	2.83E-06	2.04E-01	1.72E-02
	Total (Consumption grid)	A1-3	2.60E+02	3.78E+02	-1.19E+02	7.27E-01	2.48E-05	2.16E+00	1.47E-01
Construction process stage	Transport	A4	2.11E+01	2.11E+01	8.25E-03	1.16E-02	4.55E-06	3.69E-01	1.04E-03
	Construction	A5	1.66E-01	1.66E-01	8.36E-05	1.75E-05	1.70E-08	4.98E-04	2.69E-06
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Maintenance	B2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Repair	B3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Replacement	B4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Refurbishment	B5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational energy use	B6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational water use	B7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	1.74E+01	1.74E+01	8.61E-03	1.07E-02	3.54E-06	6.97E-02	1.75E-03
	Waste processing	C3	1.83E+02	8.61E+00	1.74E+02	8.00E-03	8.94E-07	8.11E-02	2.56E-03
	Disposal	C4	4.43E-02	4.40E-02	3.21E-04	4.75E-05	7.61E-09	3.18E-04	1.10E-05
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-3.28E+02	-3.94E+02	6.62E+01	-4.75E-01	-1.74E-05	-2.43E+00	-1.31E-01

GWP-total = Global warming potential, total;
GWP-fossil = Global warming potential, fossil;
GWP-biogenic = Global warming potential, biogenic;
GWP-luluc = Global warming potential, land use and land use change;

ODP = Depletion potential of the stratospheric ozone layer;
AP = Acidification potential, accumulated exceedance; and
EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts

			EP-marine	EP-terrestrial	POCP	ADP-mineral& metals	ADP-fossil	WDP	PM
			kg N eq	mol N eq	kg NMVOC eq	kg Sb eq	MJ, net calorific value	m^3 world eq deprived	disease incidence
Product stage	Raw material supply	A1	4.04E-01	4.42E+00	1.43E+00	3.75E-03	4.26E+03	2.08E+02	3.82E-05
	Transport	A2	8.58E-03	9.49E-02	2.56E-02	1.10E-05	3.45E+01	1.58E-01	1.32E-07
	Manufacturing	A3	3.99E-02	3.25E-01	9.98E-02	6.51E-05	7.16E+02	1.62E+01	7.81E-07
	Total (Consumption grid)	A1-3	4.52E-01	4.84E+00	1.56E+00	3.82E-03	5.01E+03	2.24E+02	3.91E-05
Construction process stage	Transport	A4	9.33E-02	1.03E+00	2.75E-01	5.22E-05	2.95E+02	1.05E+00	1.27E-06
	Construction	A5	2.00E-03	2.13E-03	7.53E-04	8.92E-08	1.12E+00	1.10E-02	1.08E-08
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Maintenance	B2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Repair	B3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Replacement	B4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Refurbishment	B5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational energy use	B6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational water use	B7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	1.86E-02	2.03E-01	6.28E-02	1.03E-04	2.48E+02	1.40E+00	1.11E-06
	Waste processing	C3	3.16E-02	3.43E-01	9.20E-02	2.13E-04	8.56E+01	3.74E+00	1.19E-06
	Disposal	C4	8.77E-05	9.50E-04	2.80E-04	9.80E-08	7.56E-01	2.77E-02	5.23E-09
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-4.44E-01	-4.80E+00	-1.47E+00	-8.58E-04	-4.24E+03	-1.14E+02	-3.28E-05

EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment;
EP-terrestrial = Eutrophication potential, accumulated exceedance;
POCP = Formation potential of tropospheric ozone;
ADP-mineral&metals = Abiotic depletion potential for non-fossil resources;
ADP-fossil = Depletion potential of the stratospheric ozone layer;
WDP = Water (user) deprivation potential, deprivation-weighted water consumption; and
PM = Particulate matter.

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts							
			IRP	ETP-fw	HTP-c	HTP-nc	SQP
			kBq U^{235} eq	CTUe	CTUh	CTUh	dimensionless
Product stage	Raw material supply	A1	2.56E+01	9.15E+03	1.78E-06	7.33E-06	8.98E+03
	Transport	A2	1.57E-01	3.04E+01	1.39E-09	2.54E-08	1.29E+01
	Manufacturing	A3	6.57E-01	6.09E+02	1.16E-08	3.81E-07	1.52E+02
	Total (Consumption grid)	A1-3	2.64E+01	9.79E+03	1.79E-06	7.73E-06	9.14E+03
Construction process stage	Transport	A4	1.44E+00	2.09E+02	1.02E-08	1.88E-07	1.32E+02
	Construction	A5	5.08E-03	9.60E-01	1.63E-11	5.34E-10	6.64E-01
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Maintenance	B2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Repair	B3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Replacement	B4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Refurbishment	B5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational energy use	B6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational water use	B7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	1.13E+00	2.50E+02	9.22E-09	2.22E-07	1.20E+02
	Waste processing	C3	7.89E-01	1.54E+02	3.96E-08	2.56E-07	4.28E+01
	Disposal	C4	4.04E-03	5.47E+02	3.62E-11	9.55E-10	1.19E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.54E+01	-1.02E+04	-9.43E-07	-7.92E-06	-5.27E+03

IRP = Potential human exposure efficiency relative to U235;
ETP-fw = Potential comparative toxic unit for ecosystems;
HTP-c = Potential comparative toxic unit for humans;
HTP-nc = Potential comparative toxic unit for humans; and
SQP = Potential soil quality index.

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, primary energy

			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	1.19E+02	1.63E+03	1.75E+03	4.01E+03	2.25E+02	4.24E+03
	Transport	A2	7.34E-02	0.00E+00	7.34E-02	1.07E+01	0.00E+00	1.07E+01
	Manufacturing	A3	2.69E+01	2.55E+01	5.23E+01	4.97E+02	3.98E+01	5.36E+02
	Total (Consumption grid)	A1-3	1.46E+02	1.65E+03	1.80E+03	4.52E+03	2.65E+02	4.78E+03
Construction process stage	Transport	A4	3.22E+00	0.00E+00	3.22E+00	2.90E+02	0.00E+00	2.90E+02
	Construction	A5	-2.75E+01	2.75E+01	4.98E-02	-2.49E+01	2.63E+01	1.42E+00
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Maintenance	B2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Repair	B3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Replacement	B4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Refurbishment	B5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational energy use	B6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational water use	B7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	-1.51E+03	1.51E+03	3.63E+00	6.24E+01	0.00E+00	6.24E+01
	Disposal	C4	3.39E-02	0.00E+00	3.39E-02	7.46E-01	0.00E+00	7.46E-01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.37E+02	-8.95E+02	-1.03E+03	-4.10E+03	-1.19E+02	-4.22E+03

PERE = Use of renewable primary energy excluding renewable primary energy used as raw materials;
PERM = Use of renewable primary energy resources used as raw materials;
PERT = Total use of renewable primary energy resources;

PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials;
PENRM = Use of non-renewable primary energy resources used as raw materials;
PENRT = Total use of non-renewable primary energy resource

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, secondary materials and fuels, use of water						
			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m^3
Product stage	Raw material supply	A1	1.93E+01	0.00E+00	0.00E+00	5.03E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	3.90E-03
	Manufacturing	A3	1.94E+00	0.00E+00	0.00E+00	3.86E-01
	Total (Consumption grid)	A1-3	2.13E+01	0.00E+00	0.00E+00	5.42E+00
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	2.61E-02
	Construction	A5	0.00E+00	0.00E+00	0.00E+00	2.61E-04
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Maintenance	B2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Repair	B3	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Replacement	B4	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Refurbishment	B5	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational energy use	B6	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational water use	B7	0.00E+00	0.00E+00	0.00E+00	0.00E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	3.44E-02
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	8.94E-02
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	6.60E-04
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	-2.81E+00

SM = Use of secondary material;
RSF = Use of renewable secondary fuels;
NRSF = Use of non-renewable secondary fuels;
FW = Net use of fresh water

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing waste categories					
			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	6.40E+01	5.63E+02	1.00E-02
	Transport	A2	1.46E-02	1.19E-01	7.57E-05
	Manufacturing	A3	3.83E+00	7.86E+01	2.88E-04
	Total (Consumption grid)	A1-3	6.78E+01	6.42E+02	1.04E-02
Construction process stage	Transport	A4	3.55E-01	4.67E+00	2.02E-03
	Construction	A5	5.77E-03	9.73E-01	9.17E-06
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00
	Maintenance	B2	0.00E+00	0.00E+00	0.00E+00
	Repair	B3	0.00E+00	0.00E+00	0.00E+00
	Replacement	B4	0.00E+00	0.00E+00	0.00E+00
	Refurbishment	B5	0.00E+00	0.00E+00	0.00E+00
	Operational energy use	B6	0.00E+00	0.00E+00	0.00E+00
	Operational water use	B7	0.00E+00	0.00E+00	0.00E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	9.97E-01	1.18E+02	3.00E-04
	Disposal	C4	1.37E-02	9.65E-01	3.69E-06
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-6.39E+01	-5.88E+02	-7.26E-03

HWD = Hazardous waste disposed;
NHWD = Non-hazardous waste disposed;
RWD = Radioactive waste disposed

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing output flows – at end of life								
			CRU	MFR	MER	EE	Biogenic carbon (product)	Biogenic carbon (packaging)
			kg	kg	kg	MJ per energy carrier	kg C	kg C
Product stage	Raw material supply	A1	0.00E+00	2.90E-02	5.42E-05	0.00E+00	7.13E-02	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	5.52E-02	1.41E-09	0.00E+00	-8.60E-01	0.00E+00
	Total (Consumption grid)	A1-3	0.00E+00	8.42E-02	5.42E-05	0.00E+00	-7.89E-01	0.00E+00
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Construction	A5	0.00E+00	3.81E+00	6.50E-08	0.00E+00	0.00E+00	8.77E-01
Use stage	Use	B1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Maintenance	B2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Repair	B3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Replacement	B4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Refurbishment	B5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational energy use	B6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Operational water use	B7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.37E+01	0.00E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRU = Components for reuse;
MFR = Materials for recycling

MER = Materials for energy recovery;
EE = Exported Energy

Scenarios and additional technical information

Scenarios and additional technical information			
Scenario	Parameter	Units	Results
A4 – Transport to the building site	Products manufactured in Malaysia are distributed both domestically within Malaysia and internationally across the Asia region, Australia, and the Middle East. In the context of the Life Cycle Assessment (LCA), the longest road distance (417km) and longest sea distance (6625km) based on delivery order are considered in the transportation modelling (Malaysia to Australia) to ensure a conservative and comprehensive evaluation of the transportation-related environmental impacts.		
Transport 1	Road transport –16-32 metric ton lorry	km	417
	Fuel consumption	l/km	0.227
	Capacity utilisation (incl. empty returns)	%	26
Transport 2	Water transport – for transoceanic freight ship	km	6,625
	Fuel consumption	g/tkm	2.50
	Capacity utilisation (incl. empty returns)	%	61
A5 – Installation in the building	The product is installed manually using basic hand tools, requiring minimal energy input. Therefore, no product waste is generated during installation, and only packaging waste is produced		
	Installation wastage rate	%	0
	Packaging waste – Cardboard waste to recycling	kg	1.95
	Packaging waste – Plastic waste to incineration	kg	0.86
B1 – Use stage	Once installed, no emission to air, water, and soil throughout the service life of the product.		
B2 – Maintenance	Once installed, the product is ready for use. Throughout its 10-years reference service life, this product requires no maintenance, repair, replacement, refurbishment. This product does not contain components that consume energy during use, therefore, no operational energy and operational water are required		
B3 – Repair			
B4 – Replacement			
B5 – Refurbishment			
B6 - Operational energy use			
B7 - Operational water use			
Reference service life	10 Years		
Study period of the LCA	10 Years		
Design Application Parameters	Use as indicated in product brochure, user instruction and warranty		

Scenarios and additional technical information			
Scenario	Parameter	Units	Results
C1 – Deconstruction	At the end of the product's life, the Expansion conference table is dismantled, and materials are separated. Energy consumption is minimal due to manual dismantling with no involvement of machinery or power. It is assumed that 100% of the product is recovered at the demolition and sent to the waste processing facility for waste treatment.		
C2 - Transportation	Distance from the dismantling site to a disposal site will be no more than 200km. The transport mode is a 3.5-7.5-ton truck.		
	Road transport by Lorry 3.5 -7.5 metric ton	km	200
C3 – waste processing	Expansion® conference table is made up of 67% of MDF boards, 22% of steel, 11% of aluminium, and remaining percentage of Polyamide 6, Polypropylene and powder coating. According to the BRE PCR EN15804+A2, the following end of life scenarios will be applied to the materials such as, • Metal components such as steel and aluminium will be 95% recycled and reused while 5% may end up in landfill. Steel and aluminium recycling will involve a process of collecting and separating from other wastes. The powder coating cannot be separated out from the final waste so it will be assumed that they will be ended up in landfill. • 45% of the MDF boards will be incinerated for the energy recovery and 55% will be recycled • Mixed plastic components will be incinerated for energy recovery (e.g. heat, electricity.)		
	Steel waste to recycle - 95%	kg	34.39
	Aluminium waste to recycling – 95%	kg	16.76
	MDF wood waste to recycle - 55%	kg	59.53
	MDF wood waste to incinerate - 45%	kg	48.70
	Plastic waste to incineration – 100%	kg	0.04
C4 – Disposal	Some materials cannot be recovered during waste processing process and may end up in landfill.		
	Steel waste to landfill (with powder coating waste) – 5%	kg	1.81
	Aluminium waste to landfill – 5%	kg	0.88

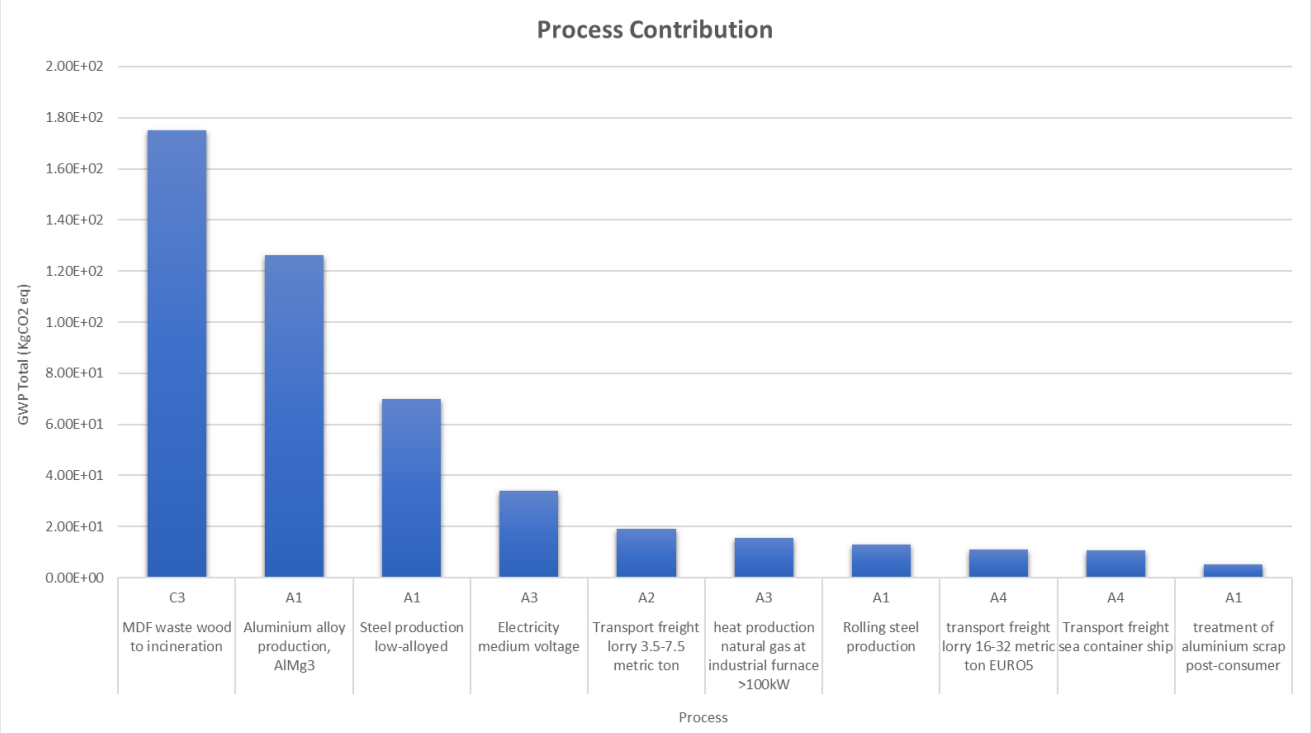
Scenarios and additional technical information			
Scenario	Parameter	Units	Results
Module D	The Expansion conference table is made up of post-consumer and virgin materials. When calculating the benefits of recycling steel and aluminium, the pre-existing recycled content has been removed, and the benefits have been calculated only for virgin steel and aluminium. The pre-existing recycled content in the Ecoinvent 3.8 Steel dataset is 36.4%; therefore, the benefits have been calculated by excluding the recycled content. That is, the benefits are calculated based solely on the virgin steel content. Benefits due to recycling of virgin steel = 21.87 kg The pre-existing recycled content in the Ecoinvent 3.8 aluminium alloy dataset is 25.9%; therefore, the benefits have been calculated by excluding the recycled content. That is, the benefits are calculated based solely on the virgin aluminium content. Benefits due to recycling of virgin aluminium = 12.42 kg Benefits due to recycling of MDF board = 59.53 kg Yield is assumed to be 100% during the recycling process. The incineration benefits have been calculated for plastic waste. The incinerated energy and heat will replace the European average mix. Benefits due to incineration of plastic mixture = 0.04 kg Benefits due to incineration of MDF = 48.71 kg		

Interpretation:

The bulk of the environmental impacts and primary energy demand are attributed to the manufacturing phase, covered by information modules A1-A3 of EN15804:2012+A2:2019.

Process contribution analysis highlights that the highest carbon emissions are associated with MDF waste management contributes around 35%, followed by the production of aluminium alloy which contributes around 25%. Additionally, low-alloyed steel production contributes 14% of the overall impacts. In contrast, other processes such as electricity use (medium voltage), natural gas consumption during production, and transportation at product stage and construction stage have contribute far less to overall emissions.

These findings indicate that MDF waste treatment and the processing of raw materials, particularly aluminium and steel, are the most significant contributors to the product's carbon footprint and should be the primary focus for emissions reduction strategies.



References

BSI. Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products. BS EN 15804:2012+A1:2013. London, BSI, 2013.

BSI. Environmental labels and declarations – Type III Environmental declarations – Principles and procedures. BS EN ISO 14025:2010 (exactly identical to ISO 14025:2006). London, BSI, 2010.

BSI. Environmental management – Life cycle assessment – Principles and framework. BS EN ISO 14040:2006. London, BSI, 2006.

BSI. Environmental management – Life cycle assessment – requirements and guidelines. BS EN ISO 14044:2006. London, BSI, 2006.

Indoor Advantage™ Gold - certifies products for low emissions and good indoor air quality.