



Reynaers  
Aluminium

# Reynaers & BREEAM

Jaspers Evers Architects – Photo: Philippe Van Gelooven

# Reynaers as partner in Sustainability



## I. Sustainable Buildings

We improve the energy efficiency, comfort, safety and long-term durability of buildings by developing innovative products and services. And we support our markets with the right information and training.

We include sustainability and product data in our Building Information Models and Digital passport.

## II. Circularity

We systematically extend the range of products that are designed and made according to the cradle to cradle principles.

We will provide digital material passports for our systems to ensure traceability, maintenance, recyclability and post-life data.

Invest in our product design to improve our recyclability, and partner up with organisations in the field.

## III. Sustainable & efficient operations

In our business operations we ensure efficiency and a minimum ecological impact, which means that the CO<sub>2</sub>-footprint of our operational processes and logistics can be kept to a minimum.

We align our operations with the ambition of the EU Green Deal and measure and monitor our CO<sub>2</sub>-emissions in line with the Science Based Target Initiative Methodology for scope 1, 2 and 3.

We set a goal of 47 % CO<sub>2</sub>-reduction by 2030 and take systematic measures through a coordinated reduction plan to achieve this goal.

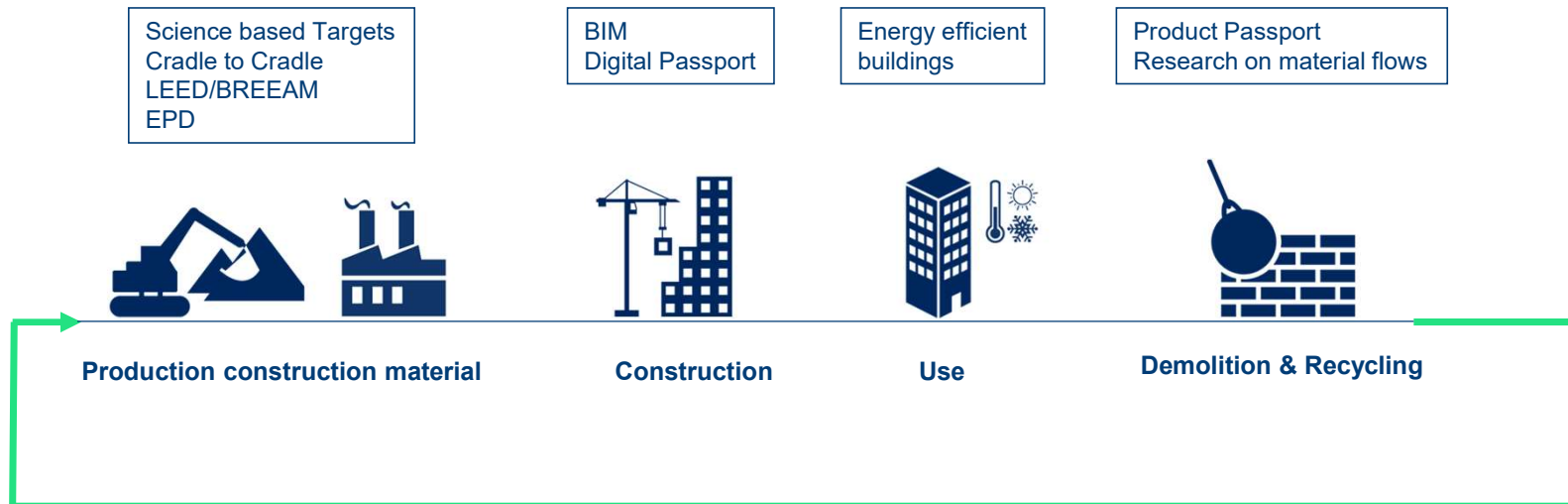
## IV. People & Society

Guaranteeing safety is an absolute prerequisite and promise to our staff and their families. In all our locations we ensure that the highest standards are being observed.

We invest in the life-long learning and employability of our staff in light of the quickly changing technology and working standards. We aim to be inclusive, offering equal opportunities to everyone and stimulating mutual understanding between the variety of countries and cultures we operate in.

As a family business we are a caring

# Reynaers as partner in Sustainability



# BREEAM international new construction 2016

## Transport 13

Credit	Tra 01 Public transport accessibility	5
Credit	Tra 02 Proximity to amenities	2
Credit	Tra 03 Alternative modes of transport	2
Credit	Tra 04 Maximum car parking capacity	2
Credit	Tra 05 Travel plan	1
Credit	Tra 06 Home office	1

## Management 21

Credit	Man 01 Project brief and design	4
Credit	Man 02 Life cycle cost and service life planning	4
Credit	Man 03 Responsible construction practices	6
Credit	Man 04 Commissioning and handover	4
Credit	Man 05 Aftercare	3

## Water Efficiency 10

Credit	Wat 01 Water consumption	5
Credit	Wat 02 Water monitoring	1
Credit	Wat 03 Water leak detection and prevention	3
Credit	Wat 04 Water efficient equipment	1

## Materials 12

Credit	Mat 01 Life cycle impacts	6
Credit	Mat 03 Responsible sourcing of construction products	4
Credit	Mat 05 Designing for durability and resilience	1
Credit	Mat 06 Material efficiency	1

## Waste 10

Credit	Wst 01 Construction waste management	3
Credit	Wst 02 Recycled aggregate	1
Credit	Wst 03 Operational waste	3
Credit	Wst 04 Speculative finishes	1
Credit	Wst 05 Adaptation to climate change	1
Credit	Wst 06 functional adaptability	1

## Innovation 10

Credit	Exemplary performance	10
Credit	Innovation	10

## Energy 37

Credit	Ene 01 Reduction of energy use and carbon emissions	15
Credit	Ene 02 Energy monitoring	4
Credit	Ene 03 External lighting	1
Credit	Ene 04 Low carbon design	3
Credit	Ene 05 Energy efficient cold storage	3
Credit	Ene 06 Energy efficient transport systems	3
Credit	Ene 07 Energy efficient laboratory systems	5
Credit	Ene 08 Energy efficient equipment	2
Credit	Ene 09 Drying space	1

## Health and Wellbeing 25

Credit	Hea 01 Visual comfort	6
Credit	Hea 02 Indoor air quality	5
Credit	Hea 03 Safe containment in laboratories	2
Credit	Hea 04 Thermal comfort	3
Credit	Hea 05 Acoustic performance	4
Credit	Hea 06 Accessibility	2
Credit	Hea 07 Hazards	1
Credit	Hea 08 Private space	1
Credit	Hea 09 Water quality	1

## Land use and ecology 10

Credit	LE 01 Site selection	3
Credit	LE 02 Ecological value of site and protection of ecological features	2
Credit	LE 04 Enhancing site ecology	3
Credit	LE 05 Long term impact on biodiversity	2

## Pollution 13

Credit	Pol 01 Impact of refrigerants	4
Credit	Pol 02 Nox emissions	2
Credit	Pol 03 Surface water run-off	5
Credit	Pol 04 Reduction of night time light pollution	1
Credit	Pol 05 Reduction of noise pollution	1

## TOTALS 161

# Potential credits using Reynaers products



Based on BREEAM International New Construction 2016 – office and industry buildings

Environmental category	Issue	Max. credits	Windows & doors	Sliding doors	Curtain walls	Sun screening
Health & wellbeing (HEA)	HEA1 - Visual comfort	4	2	2	2	1
	HEA2 - Indoor air quality	5	3	3	3	-
	HEA4 - Thermal comfort	3	2	2	2	2
	HEA5 - Acoustic performance	2	2	2	2	-
Energy (ENE)	ENE1 - Reduction of energy use and carbon	15	5	4	6	6
	ENE4 - Low carbon design	3	1	1	1	-
Materials (MAT)	MAT1 - Life cycle impacts	6	3	3	3	2
	MAT3 - Responsible sourcing of construction products	4	1	1	1	1
Pollution (POL)	POL5 - Reduction of noise pollution	1	1	1	1	-
Innovation (INN)	INN1 - Innovation	10	1	0	1	1

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## ENE1 – Reduction of energy use and carbon emissions

### Aim:

To recognise and encourage buildings that minimise their operational energy consumption through good design

**Most important BREEAM issue!**

### 2 options available:

Using approved Building Energy Calculation Software (max 15 credits)

Using BREEAM Checklist A5 (max 10 credits)

# ENE1 – Reduction of energy use and carbon emissions

## Option 1: Use of approved energy calculation software

- Calculate Energy Performance Ratio for International New Construction ( $EPR_{INC}$ ) => compare energy requirements of assessed building with a notional equivalent
- Compare  $EPR_{INC}$  with BREEAM benchmarks
- The energy modelling study has to be carried out by a qualified engineer using approved software (Designbuilder, TRNSYS, EPB-software 3G...)
- Required data:
  - U value
  - Solar factor

Breeam credits	$EPR_{INC}$	Minimum requirements
1	0.06	
2	0.12	
3	0.18	
4	0.24	
5	0.3	
6	0.36	Minimum for BREEAM Excellent
7	0.42	
8	0.48	
9	0.54	
10	0.6	Minimum for Breeam Outstanding
11	0.66	
12	0.72	
13	0.78	
14	0.84	
15	0.9	

# ENE1 – Reduction of energy use and carbon emissions

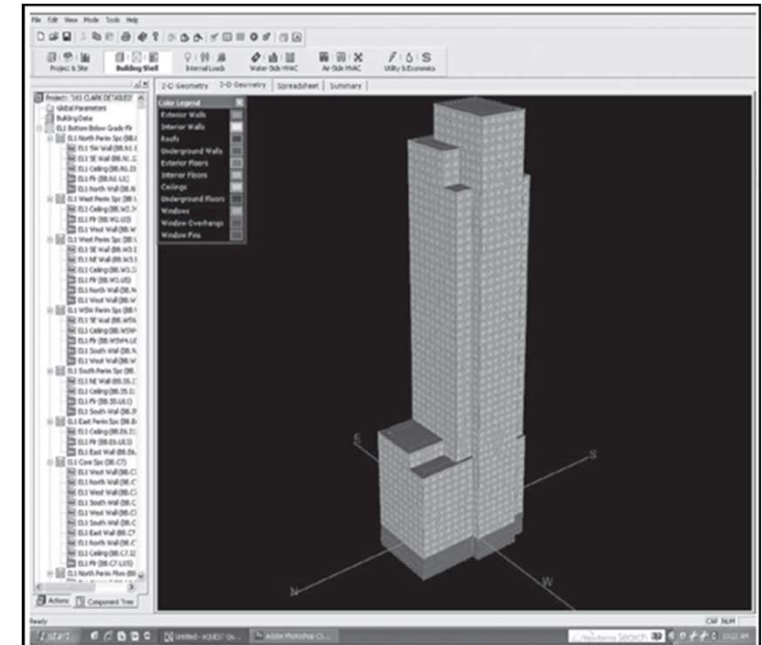
Example calculation: CW 50 with Uf-value 0.6 W/m²K

Reference building	Actual building
Uf-value = 1.4 W/M²k	Uf-value = 0.6 W/M²k
120 kWh/m² consumption	84 kWh/m² consumption

120 – 84 = 36

36 / 120 = 0.3064

Breeam credits	EPR <sub>INC</sub>	Minimum requirements
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12	0.72	
13	0.78	
14	0.84	
15	0.9	



## ENE1 – Reduction of energy use and carbon emissions

Product range analysis		Credits
<b>Windows &amp; Doors</b>	CS Series	4
	MasterLine 8	5
	SlimLine 38	4
	ES 45-Pa	4
	TS Series	5
	CD Series	5
<b>Sliding Systems</b>	CP Series	4
	Hi-Finity	4
	SlimPatio 68	4
<b>Folding Systems</b>	CF Series	4
<b>Curtain wall Systems</b>	CW Series	6
	CW 60 Solar	6
<b>Sun-screening</b>	BS 40	5
	BS 30, 100 Solar	6
<b>Balustrade</b>	RB 10 Solar	2

- Better U-values will give more credits
  - Recommended values:
    - U frame: <1.7 W/m<sup>2</sup>K
    - U glass: <1.1 W/m<sup>2</sup>K
- Inclusion of solar panels will give extra credits

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## ENE4 – Low carbon design

### Aim:

To encourage the adoption of design measures, which reduce building energy consumption and associated carbon emissions and to minimise reliance on active building services systems

#### ▪ **Passive design (2 credits)**

- Passive design analysis (1 credit)
  - Achieve HEA04 Thermal comfort
  - Perform passive design analysis of the building during the concept design stage
  - Implementation of passive design measures to reduce energy consumption by at least 5%
- **Free cooling (1 credit)**
  - **Passive design analysis credit is achieved**
  - **Passive design analysis includes an analysis of free cooling opportunities**
  - **The building is naturally ventilated or uses a combination of free cooling strategies**

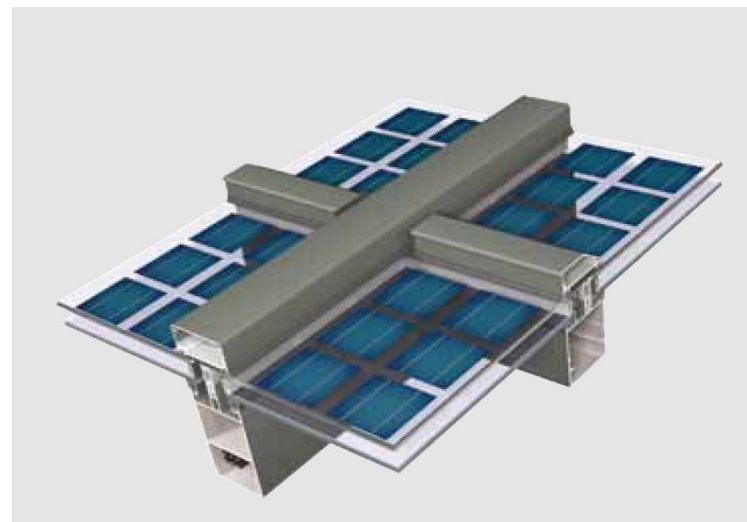
#### ▪ **Low or zero carbon technologies (1 credit)**

- **A feasibility study is carried out by an energy specialist to establish appropriate low or zero carbon energy sources**
- **Low or zero carbon technologies have been specified for the building in line with the feasibility study**

## ENE4 – Low carbon design

Product range analysis		Credits
Windows & Doors	CS Series	1
	MasterLine 8	1
	SlimLine 38	1
	ES 45-Pa	1
	TS Series	1
Sliding Systems	CP Series	1
	Hi-Finity	1
	SlimPatio 68	1
Folding Systems	CF Series	1
Curtain wall Systems	CW Series	1
	CW 60 Solar	2
Sun-screening	BS 40	1
	BS 30, 100 Solar	1
Balustrade	RB 10 Solar	1

- Operating windows can score 1 credit for Free cooling
- Solar systems can score 1 credit for Low or zero carbon technologies



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# MAT1 – Life cycle impacts

## Aim:

To recognise & encourage the use of robust appropriate life cycle assessment tools & specification of materials with low environmental impact over the full building life cycle

### ▪ Mat1 calculator (5 credits)

- Measure the life cycle environmental impact of the building elements using a BREEAM recognised life cycle assessment tool
- Completion of the Mat1 Calculator
- Points are awarded based on Mat1 Calculator score

Mat 1 calculator score	Credits – Industrial	Credits – All other buildings
25	1	1
62.5	1	2
75	1	3
80	2	4
82.5	2	5
85	2 + Exemplary	5 + Exemplary

# MAT1 – Life cycle impacts

## BREEAM International New Construction 2016 Mat 01 Calculator

**BREEAM**®

### Materials Assessment tool/method and data

Note: where 'M' is indicated against a section heading, at least one item must be indicated 'Y'.

	Mandatory	Maximum	Included in LCA tool?
<b>Output Indicators available</b>			
Embodied carbon (CO2e)	M	2	Y
Embodied water OR waste processing		2	N
AND any two additional indicators		4	Y
Points		8	6

### (M) Output Life stage(s) available (for all indicators selected)

	Score:-
Cradle to Gate total	2 N
Cradle to Gate total AND End of Life	4 N
Cradle to Grave total	6 Y
Cradle to Grave total WITH operational energy (reported separately)	8 N
Cradle to grave with separate life stage reporting* to:-	12 N
a. Product stage	
b. Construction process stage	
c. Use stage (with operational energy reported separately)	
d. End of life	

### Materials Assessment Scope

	Mandatory (if present)	Present in building?	Maximum	Included in assessment?
<b>Building elements included</b>				
<b>Fabric:-</b>				
<b>Sum:-</b>				
External walls (envelope, structure and finishes)	M	Y	2,00	Y
External windows and rooflights	M	Y	2,00	Y
Foundations (including excavation)		Y	2,00	N
Internal floor finishes (incl. access floors)	M	Y	2,00	Y
Structural frame (vertical)		Y	2,00	N
Upper floors (including horizontal structure)	M	Y	2,00	Y
Basements/retaining walls (including excavation)		Y	1,00	N
External solar shading devices, access structures etc.		Y	1,00	Y
Ground/lowest floor		Y	1,00	N
Internal ceiling finishes (incl. suspended/access ceilings)		Y	1,00	N
Internal walls and partitions	M	Y	1,00	Y
Roof (including coverings)	M	Y	1,00	Y
Stairs and ramps		Y	1,00	N
Balustrades and handrails		Y	0,50	N

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## MAT1 – Life cycle impacts

- **Environmental Product Declarations (EPD) (1 credit)**
  - At least 5 different products are covered by verified EPDs
  - The EPDs must be valid and compliant with ISO 14025, ISO 21930 or EN 15804
  - Max 2 products of each product category may be counted

Product categories	
Timber	Gypsum
Concrete or cementitious	Glass
Metal	Plastic, polymer, resin, paint, chemicals and bituminous
Stone or aggregate	Animal fibre, skin, cellulose fibre
Clay-based	Other

# MAT1 – Life cycle impacts

Product range analysis		Credits	EPD
Windows & Doors	CS Series	3	✓
	MasterLine 8	3	✓
	SlimLine 38	3	✓
	ES 45-Pa	2	
	TS Series	2	
Sliding Systems	CP Series	3	✓
	Hi-Finity	3	✓
	SlimPatio 68	3	✓
Folding Systems	CF Series	2	
Curtain wall Systems	CW Series	3	CW 50 + CW 60
	CW 60 Solar	2	
Sun-screening	BS 40	2	
	BS 30, 100 Solar	2	
Balustrade	RB 10 Solar	2	

<https://www.reynaers.pt/pt-PT/arquitetos/download-cad-bim>

Download CAD & BIM

Janelas
ES 50
SlimLine 38
TS 68
CS 77
MasterLine 8
MasterLine 10
CS 68
CS 59
CS 59Pa
XS 50
Portas
Portas de correr
Fachadas
Puxadores
Jardins de Inverno
Sombreamento
Sistemas complementares
Smart Buildings

SlimLine 38
Ir para página de produto
Brochura de produto
Brochura\_EN\_SL 38
Brochura\_PT\_SL 38
Brochura\_FR\_SL 38
Memórias Descritivas
SL 38 Product Prescription PT.pdf
BIM
Reynaers\_SL 38\_Window - Revit
Reynaers\_SlimLine 38\_Window - Archicad
Documentos de Sustentabilidade
SlimLine 38 Windows - EPD
C2C Bronze Certificate

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# Innovation

## Aim:

To support innovation within the construction industry through the recognition of sustainability related benefits which are not rewarded by standard BREEAM issues

Max 10 credits can be achieved

- **Exemplary performance in existing BREEAM issues (1 credit for each exemplary performance)**
  - Refer to the individual BREEAM credits for information on exemplary performance
- **Innovation applications (1 credit for each application)**
  - Each application requires assessment of BRE
  - Reynaers innovations:
    - PV cells integrated in curtain walls, glare control systems and balustrades
    - Cradle to Cradle certified products



Certification Number  
5109

Standard Version  
3.1

Lead Assessment Body  
EPEA GmbH - Part of Drees &  
Sommer

Material Health  
Assessment Body  
EPEA GmbH - Part of Drees &  
Sommer

Effective Date  
01 October 2021

Expiration Date  
10 January 2023

## Reynaers Aluminium

has successfully achieved Cradle to Cradle Certified® Bronze  
for the product(s) under the name:

## Reynaers Aluminium window, door and façade systems

Door frame systems: CS 77 and CS 77-AP door range in all insulation variants; SL 38 in all insulation variants; Masterline 8 in standard, HI and HI+ insulation variants; Locks, hinges, glass supports, and glass are added separately to these door frame systems

Window frame systems: CS 77, CS 77-AP and CS 77-HV in all insulation variants; SL 38 in all insulation variants; Masterline 8 in standard, HI and HI+ insulation levels in 4 design variants; Door locks, hinges, glass supports, and glass are added separately to these window frame systems

Curtain wall frame systems: CW 50-HI; CW 86-EF; Glass is added separately to these curtain wall frame systems.

Sliding door systems: MasterPatio; Door locks, glass supports and glass are added separately to these sliding door systems



President & CEO  
Cradle to Cradle Products Innovation Institute

See the Cradle to Cradle Certified Product Registry at [www.c2ccertified.org](http://www.c2ccertified.org) for additional details.  
Use of the certification marks is subject to the terms and conditions of the C2CPII Certification Agreement and Trademark Use Guidelines.  
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