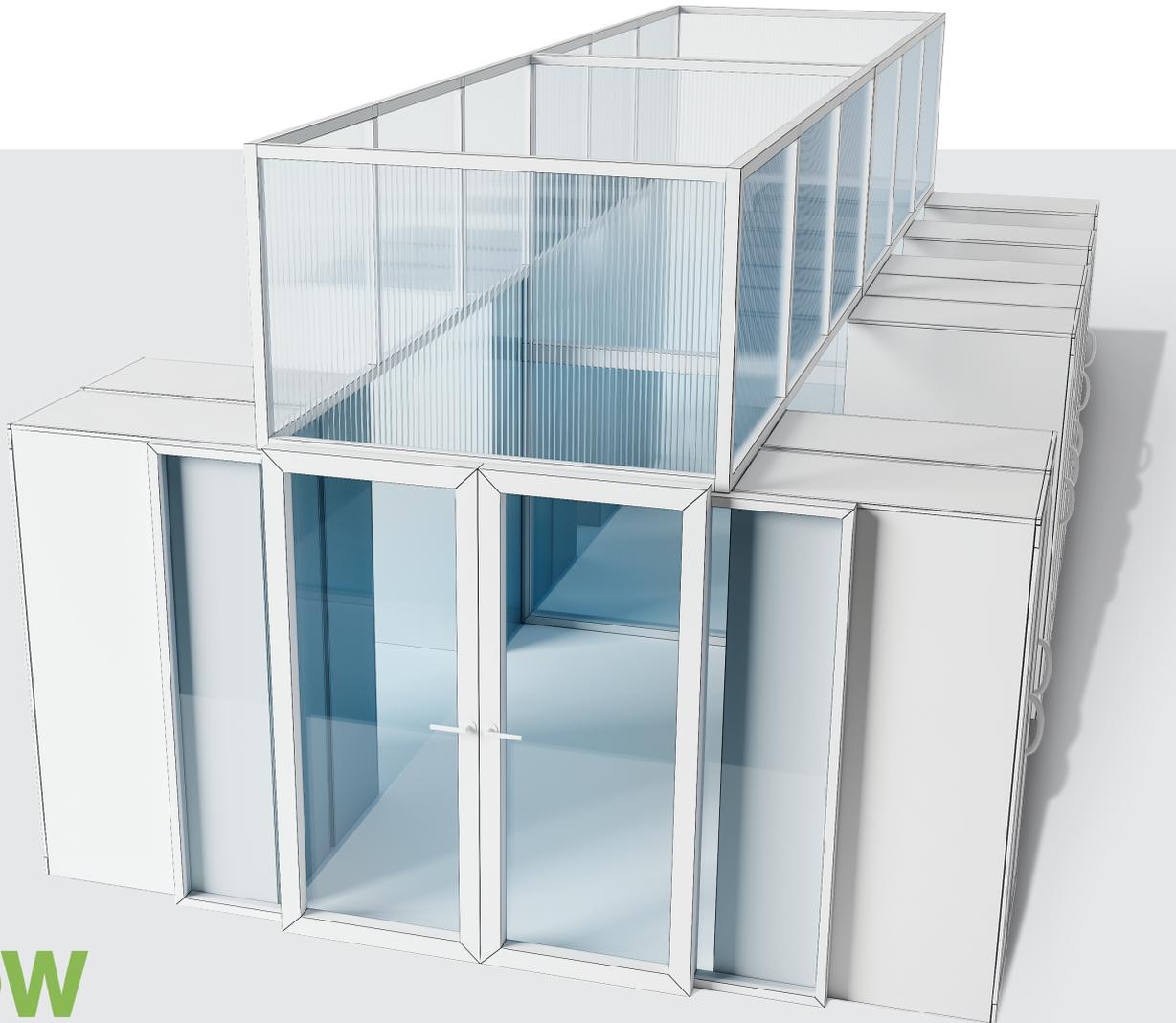




Polycarbonate Sheet Solutions



**LOW
CARBON
INNOVATIONS**

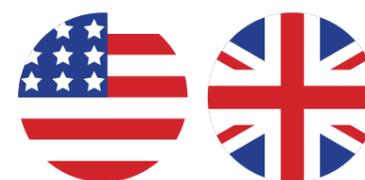
“ Your global partner for aisle containment sheet solutions.”

Brett Martin stands apart in the supply of specialist sheet solutions.

With over 65 years of polymer based sheet manufacturing under our belt, we bring the data centre industry a unique range of innovative options, designed to meet the challenge of carbon reduction.

Our extensive extrusion capacity equips us to meet the projections for data centre growth and our distribution network is long established across over 70 countries.

Our local service partners are ready now to meet your needs with our Marlon multiwall and solid sheets, delivered in your preferred format.



Uniquely placed with manufacturing plants in both the UK and USA, we are ideally equipped to deliver tariff-free international sourcing.

In every case we can support you with the exact service you need to meet your aisle containment panel requirements.

Our UK manufacturing site in Northern Ireland has easy access to all European markets and also ships to all deep-sea locations.

Based in DePere Wisconsin, APC American Polycarbonate Company is our joint venture manufacturing site for supply throughout North and South American markets.

Our next generation low carbon sheet solutions are available today.

By specifying these low embodied carbon sheets in your aisle containment systems, significant carbon savings can be achieved. Embodied Carbon savings of 200 – 500 tonnes are possible in a typical new build data centre depending on the containment specification.

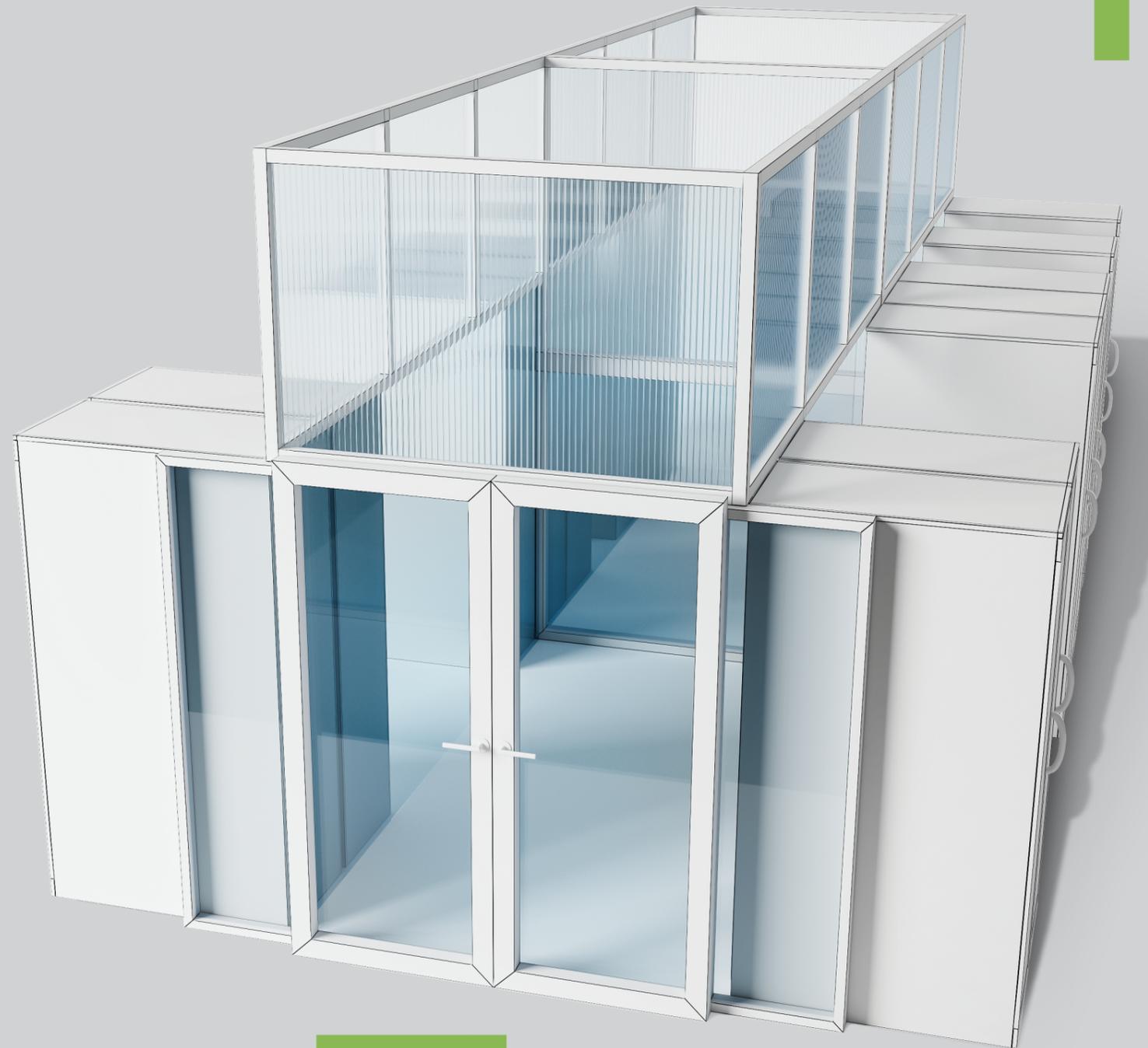
We have embraced the polymer industry's latest solutions in the drive for climate neutral polycarbonate resin with a zero-carbon footprint.

When combined with our low carbon manufacturing, powered by our onsite generated sustainable energy we can offer carbon saving of

up to 97% when compared with LCA data A1-3 for our standard polycarbonate sheet.

By adopting these new low carbon Marlon options in data centre design and fitout you can reduce scope 3 emissions with the confidence provided by our LCA data and certified performance.

UP TO
97%
CARBON
SAVING



Our path to decarbonisation

Our path to decarbonisation is combination of programmes, encompassing our own manufacturing processes and the adoption of the latest low carbon polymer solutions.



LOW CARBON EXTRUSION

Brett martin has invested heavily in sustainable energy at its Mallusk extrusion facility as a key pathway to decarbonisation. The carbon we save is equivalent to a reduction of 13,600,00 km driven by an average family car which is 340 trips around the earth.

Wind power

Our on-site turbine stands 99.5m tall from the ground to its blade tip generating 2.3MWp and saving over 800t of CO₂ per annum.

Solar power

Our 6.42MWp private wire Solar Farm is connected from a hillside above our site. This dedicated solar installation saves around 900t of CO₂ per annum.

Efficiency

We strive for carbon efficiency across every function of the business, adopting low carbon or EV solutions where possible, reducing waste in every part of our operation as we strive for a circular approach to business.



BIO CIRCULAR ATTRIBUTED RESIN

Through partnership with leading resin producers, we have introduced climate neutral bio circular attributed polycarbonate resin into our manufacturing. This replaces fossil-based feedstocks with bio attributed material, produced from recycled bio materials such as used cooking oils. In this way, the process does not compete with food production.

These net zero carbon materials are certified with a sustainable share of up to 89% and further carbon savings are achieved through the use of sustainable energy on the sites producing the resin.

This breakthrough is managed through a mass balance process and the bio attribution is certified independent by third-party ISCC PLUS certification to ensure compliance with globally recognized ecological and social sustainability requirements for bio attributed materials.



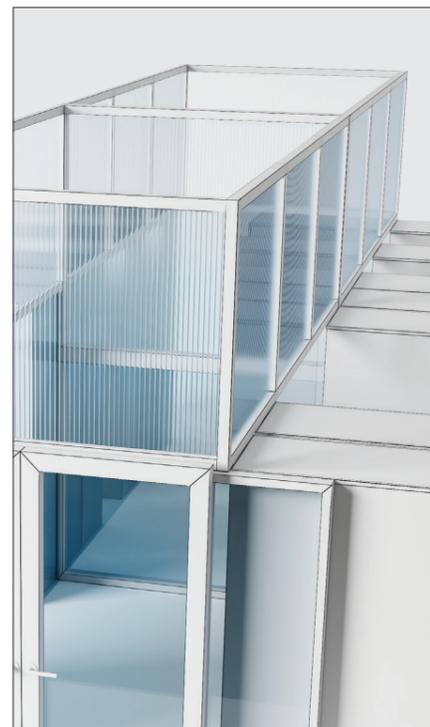
Polycarbonate Multiwall Panels

Why choose Low Embodied Carbon Multiwall sheet?

Scope 3 emissions will be the most significant part of a data centre development, so making informed decisions about the carbon footprint of both the building fabric and fitout is essential in the drive to reduce environmental impact.

Future building regulation is travelling towards a new focus on Climate Action, with the next LEED update expected to be heavily weighted towards decarbonisation, identifying embodied carbon, measured by the Life Cycle Assessments (LCA).

Brett Martin's adherence to the mass balanced approach for bio attributed and recycled materials is certified by ISCC Plus.



Marlon ST BioPlus

Produced from climate neutral, Bio Circular Attributed polycarbonate resin, Marlon ST BioPlus is the lowest carbon option for any new build or upgraded data centre project.

✔ Extruded with 100% renewable energy. ✔ ISCC Plus accredited

LCA DATA	A1-3			A-C		
	Carbon per Kg of sheet	Kg Saving A1-A3	% saving	Carbon per Kg of sheet	Kg Saving A-C	% saving
Marlon ST BioPlus	0.0912	-3.8098	-97.66%	1.098	-3.8100	-77.63%

LCA DATA Life Cycle Assessment to EN15804+A2 (2019)

Low Carbon Option

97.66%
Carbon Saving

LCA A1-3
Compared to Standard Marlon ST

Marlon ST

Standard Option

Marlon ST is our standard specification multiwall sheet.

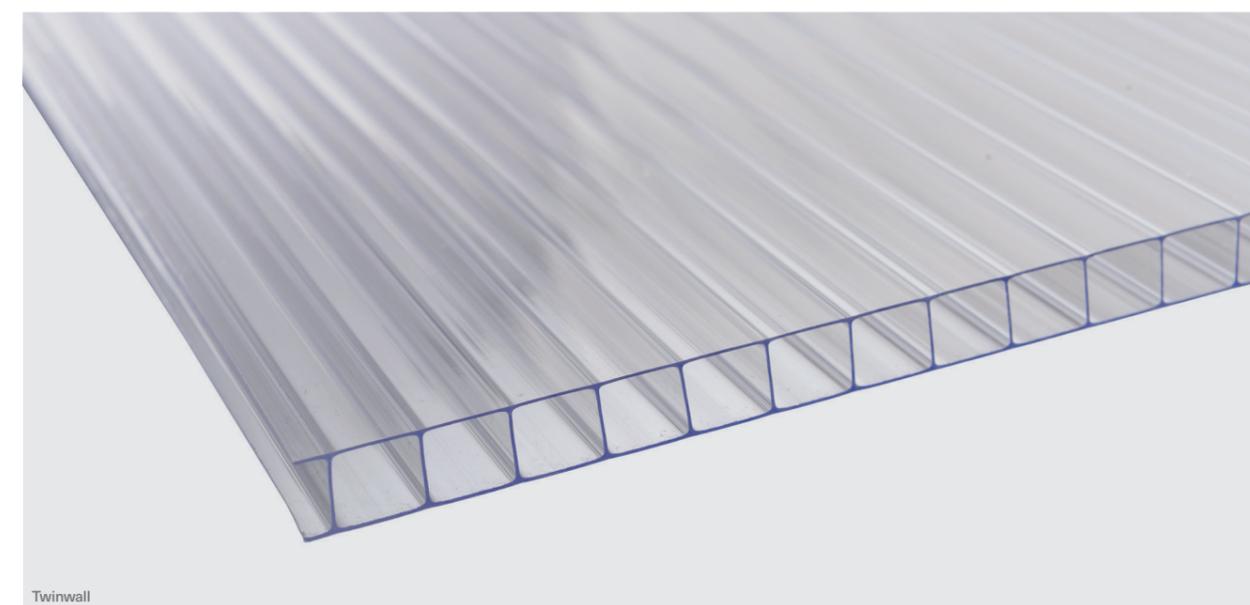
LCA DATA	A1-3	A-C
	Carbon per Kg of sheet	Carbon per Kg of sheet
Standard Marlon ST	3.901	4.908

LCA DATA Life Cycle Assessment to EN15804+A2 (2019)

	Marlon ST Sheet Thickness (mm)				
	4	6	8	10	16
Structure	Twin	Twin	Twin	Twin	Triple
Sheet thickness mm (±0.5)	4	6	8	10	16
Rib spacing (nominal) mm	6	6	10	10	20
Maximum Sheet width mm	2100	2100	2100	2100	2100
Approx weight g/m ²	800	1300	1500	1700	2700
Light transmission %					
Clear S	85	82	82	82	77
U-value W/M ² K	3.9	3.7	3.4	3.2	2.4
Falling dart Gardiner impact at 23°C Nm	21.3	27	>27	>27	>27



Triplewall



Twinwall

Polycarbonate Solid Sheet

Why choose Low Embodied Carbon Solid sheet?

Low embodied carbon solid polycarbonate sheet is the ideal choice to reduce Scope 3 emissions in the drive to reduce environmental impact. The sheet retains the identical properties of standard sheet but delivers the carbon impact.



Marlon FS BioPlus

Produced from climate neutral, Bio Circular Attributed polycarbonate resin, Marlon FS BioPlus is the lowest carbon option for any new build or upgraded data centre project.

- ✓ Extruded with 100% renewable energy.
- ✓ ISCC Plus accredited

Low Carbon Option

97%
Carbon Saving

LCA A1-3
Compared to Standard Marlon ST

LCA DATA	A1-3			A-C		
	Carbon per Kg of sheet	Kg Saving A1-A3	% saving	Carbon per Kg of sheet	Kg Saving A-C	% saving
Marlon FS BioPlus	0.0912	-3.8098	-97.66%	1.098	-3.81	-77.63%

LCA DATA Life Cycle Assessment to EN15804+A2 (2019)

Marlon FS

Standard Option

Marlon FS is our standard solid sheet polycarbonate range, delivering high performance, ideal for aisle doors.

LCA DATA	A1-3	A-C
	Carbon per Kg of sheet	Carbon per Kg of sheet
Marlon FS	3.946	4.953

LCA DATA Life Cycle Assessment to EN15804+A2 (2019)

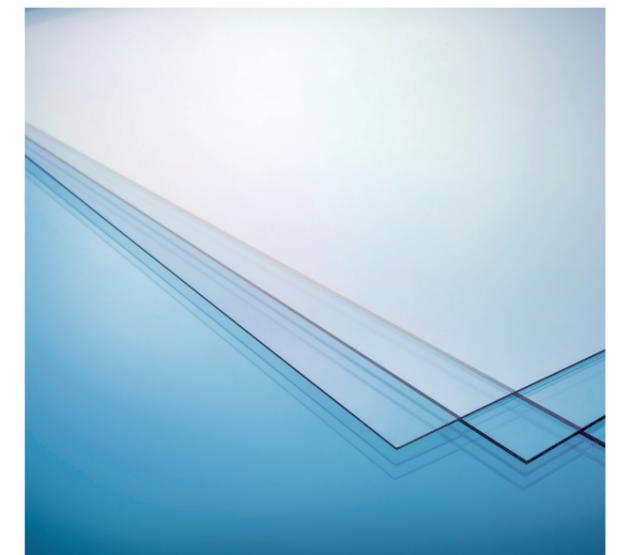


Marpet-g FS

PETg Sheet

Marpet-g FS is our clear, transparent sheet that can be used as a cost effective alternative to polycarbonate, acrylic and PVC sheets. Marpet-g FS PETg can be easily formed and fabricated. It's durability, impact resistance and optical clarity make it ideal for glazing applications.

Marpet-g FS Thickness		
3mm	4mm	5mm
6mm	8mm	



LCA Data

Marlon ST Bio Plus Polycarbonate sheet

This LCA is calculated according to: ISO 14044, ISO 14040 and EN 15804
Ecochain v4.3.1
Standard database - Ecoinvent v3.9.1 Cut-Off

The LCA background information and project dossier have been registered in the online Ecochain application in the account Brett Martin Ltd (2023). (☑ = module declared, MND = module not declared).

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
☑	☑	☑	☑	☑	MND	MND	MND	MND	MND	MND	MND	☑	☑	☑	☑	☑
Product stage					Use stage							End-of-Life stage				
A1 Raw material supply A2 Transport A3 Manufacturing					B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment							C1 De-construction demolition C2 Transport C3 Waste processing				
Construction process stage					B6 Operational energy use B7 Operational water use							C4 Disposal				
A4 Transport gate to site																
A5 Assembly / Construction installation process																
Benefits and loads beyond the system boundaries																
D Reuse- Recovery- Recycling- potential																

Marlon ST Revolve Polycarbonate sheet

This LCA is calculated according to: ISO 14044, ISO 14040 and EN 15804
Ecochain v4.3.1
Standard database - Ecoinvent v3.9.1 Cut-Off

The LCA background information and project dossier have been registered in the online Ecochain application in the account Brett Martin Ltd (Scenario 5). (☑ = module declared, MND = module not declared).

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
☑	☑	☑	☑	☑	MND	MND	MND	MND	MND	MND	MND	☑	☑	☑	☑	☑
Product stage					Use stage							End-of-Life stage				
A1 Raw material supply A2 Transport A3 Manufacturing					B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment							C1 De-construction demolition C2 Transport C3 Waste processing				
Construction process stage					B6 Operational energy use B7 Operational water use							C4 Disposal				
A4 Transport gate to site																
A5 Assembly / Construction installation process																
Benefits and loads beyond the system boundaries																
D Reuse- Recovery- Recycling- potential																

Results

Environmental impact	Unit	A1	A2	A3	A1-A3	A4	A5	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	3.339E-2	3.920E-2	1.861E-2	9.120E-2	2.907E-2	7.298E-2	1.898E-2	8.811E-1	0	-2.449E+0	-1.356E+0
GWP-f	kg CO2 eq	2.448E+0	3.917E-2	1.840E-2	2.506E+0	2.905E-2	7.228E-2	1.896E-2	8.159E-1	0	-2.420E+0	1.021E+0
GWP-b	kg CO2 eq	-2.405E+0	1.459E-5	1.807E-4	-2.405E+0	-1.137E-6	6.859E-4	1.880E-5	6.503E-2	0	-2.796E-2	-2.367E+0
GWP-luluc	kg CO2 eq	1.228E-3	2.492E-5	2.550E-5	1.278E-3	2.140E-5	3.719E-5	9.195E-6	1.980E-4	0	-9.050E-4	6.389E-4
ODP	kg CFC11 eq	1.218E-8	6.955E-10	8.910E-10	1.377E-8	4.490E-10	1.297E-9	4.022E-10	3.526E-9	0	-7.438E-7	-7.243E-7
AP	mol H+ eq	1.349E-2	6.583E-4	1.709E-4	1.432E-2	7.716E-4	2.226E-4	4.039E-5	9.238E-4	0	-6.507E-3	9.774E-3
EP-fw	kg P eq	2.437E-5	2.244E-7	1.097E-6	2.569E-5	1.241E-7	8.242E-7	1.501E-7	5.455E-6	0	-5.830E-5	-2.606E-5
EP-m	kg N eq	4.222E-3	1.642E-4	2.936E-5	4.416E-3	1.926E-4	6.770E-5	9.943E-6	3.273E-4	0	-1.323E-3	3.690E-3
EP-T	mol N eq	4.630E-2	1.811E-3	3.332E-4	4.844E-2	2.131E-3	7.433E-4	1.035E-4	3.181E-3	0	-1.479E-2	3.981E-2
POCP	kg NMVOC eq	1.329E-2	5.222E-4	1.103E-4	1.392E-2	5.808E-4	1.524E-3	6.270E-5	1.131E-3	0	-5.327E-3	1.189E-2
ADP-mm	kg Sb eq	2.561E-6	7.728E-8	1.349E-6	3.987E-6	3.388E-8	2.053E-7	6.040E-8	1.058E-6	0	-8.286E-6	-2.942E-6
ADP-f	MJ	4.165E+1	5.033E-1	2.185E-1	4.237E+1	3.541E-1	1.848E+0	2.624E-1	3.082E+0	0	-5.185E+1	-3.937E+0
WDP	m3 depriv.	1.079E+0	1.604E-3	3.089E-2	1.111E+0	8.765E-4	1.714E-2	1.084E-3	6.013E-2	0	-6.474E+0	-5.284E+0
PM	disease inc.	9.563E-8	1.906E-9	2.019E-9	9.955E-8	9.571E-10	2.367E-9	1.371E-9	1.604E-8	0	-5.281E-8	6.747E-8
IR	kBq U-235 eq	2.569E-2	1.789E-4	4.222E-4	2.629E-2	8.547E-5	2.382E-3	1.330E-4	3.729E-3	0	-1.226E-1	-8.997E-2
ETP-fw	CTUe	4.163E+0	4.677E-1	1.093E+0	5.723E+0	3.169E-1	7.823E-1	2.557E-1	8.683E+0	0	-1.760E+1	-1.842E+0
HTP-c	CTUh	2.190E-9	1.706E-11	3.804E-11	2.245E-9	1.245E-11	5.671E-11	8.455E-12	3.197E-10	0	-8.078E-10	1.834E-9
HTP-nc	CTUh	1.661E-8	3.479E-10	1.530E-9	1.848E-8	1.878E-10	1.317E-9	2.372E-10	5.520E-9	0	-4.069E-8	-1.495E-8
SQP	Pt	3.802E+0	1.702E-1	7.247E-1	4.697E+0	4.762E-2	1.650E-1	1.595E-1	2.294E+0	0	-3.323E+0	4.040E+0
Resource use	Unit	A1	A2	A3	A1-A3	A4	A5	C2	C3	C4	D	Total
PERE	MJ	1.084E+0	5.709E-3	8.692E-1	1.959E+0	2.846E-3	7.021E-2	4.125E-3	1.482E-1	0	-6.474E+0	-4.289E+0
PERM	MJ	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	1.084E+0	5.709E-3	8.692E-1	1.959E+0	2.846E-3	7.021E-2	4.125E-3	1.482E-1	0	-6.474E+0	-4.289E+0
PENRE	MJ	6.044E+1	5.350E-1	2.329E-1	6.121E+1	3.764E-1	1.443E+0	2.790E-1	3.286E+0	0	-5.566E+1	1.093E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.044E+1	5.350E-1	2.329E-1	6.121E+1	3.764E-1	1.443E+0	2.790E-1	3.286E+0	0	-5.566E+1	1.093E+1
PET	MJ	6.152E+1	5.407E-1	1.102E+0	6.317E+1	3.792E-1	1.513E+0	2.831E-1	3.435E+0	0	-6.214E+1	6.641E+0
SM	kg	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0
FW	m3	3.171E-2	5.153E-5	7.213E-4	3.248E-2	2.773E-5	7.336E-4	3.523E-5	1.774E-3	0	-1.501E-1	-1.150E-1
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	A4	A5	C2	C3	C4	D	Total
HWD	kg	6.373E-5	2.844E-6	7.375E-6	7.395E-5	1.811E-6	1.957E-6	1.669E-6	1.172E-5	0	-3.254E-1	-3.253E-1
NHWD	kg	1.434E-1	1.298E-2	6.876E-3	1.633E-1	2.748E-3	4.350E-3	1.304E-2	1.667E-1	0	-5.755E-2	2.926E-1
RWD	kg	1.748E-5	1.096E-7	2.831E-7	1.787E-5	4.742E-8	1.238E-6	8.627E-8	2.739E-6	0	-1.319E-5	8.793E-6
CRU	kg	0	0	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0	0	0	0

End-of-Life-Stage assumptions -75% recycling / 25% incineration

Results

Environmental impact	Unit	A1	A2	A3	A1-A3	A4	A5	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.619E+0	3.765E-2	1.807E-2	1.675E+0	2.907E-2	7.803E-2	1.898E-2	8.807E-1	0	-1.689E+0	9.924E-1
GWP-f	kg CO2 eq	1.610E+0	3.761E-2	1.787E-2	1.665E+0	2.905E-2	7.775E-2	1.896E-2	8.155E-1	0	-1.667E+0	9.392E-1
GWP-b	kg CO2 eq	8.666E-3	1.308E-5	1.755E-4	8.855E-3	-1.137E-6	2.401E-4	1.880E-5	6.500E-2	0	-2.140E-2	5.271E-2
GWP-luluc	kg CO2 eq	1.305E-3	2.416E-5	2.477E-5	1.354E-3	2.140E-5	4.219E-5	9.195E-6	1.979E-4	0	-8.879E-4	7.365E-4
ODP	kg CFC11 eq	5.508E-8	6.627E-10	8.654E-10	5.661E-8	4.490E-10	2.479E-9	4.022E-10	3.524E-9	0	-3.974E-7	-3.340E-7
AP	mol H+ eq	6.268E-3	6.542E-4	1.660E-4	7.088E-3	7.716E-4	2.053E-4	4.039E-5	9.233E-4	0	-4.567E-3	4.461E-3
EP-fw	kg P eq	5.111E-5	2.122E-7	1.066E-6	5.239E-5	1.241E-7	9.163E-7	1.501E-7	5.453E-6	0	-3.323E-5	2.580E-5
EP-m	kg N eq	1.439E-3	1.632E-4	2.851E-5	1.631E-3	1.926E-4	4.702E-5	9.943E-6	3.272E-4	0	-8.983E-4	1.309E-3
EP-T	mol N eq	1.599E-2	1.801E-3	3.236E-4	1.811E-2	2.131E-3	5.089E-4	1.035E-4	3.180E-3	0	-1.012E-2	1.391E-2
POCP	kg NMVOC eq	1.838E-2	5.165E-4	1.071E-4	1.900E-2	5.808E-4	1.742E-4	6.270E-5	1.131E-3	0	-3.590E-3	1.736E-2
ADP-mm	kg Sb eq	7.436E-6	7.239E-8	1.310E-6	8.819E-6	3.388E-8	2.093E-7	6.040E-8	1.057E-6	0	-8.277E-6	1.903E-6
ADP-f	MJ	3.161E+1	4.818E-1	2.123E-1	3.230E+1	3.541E-1	1.916E+0	2.624E-1	3.081E+0	0	-3.267E+1	5.250E+0
WDP	m3 depriv.	4.808E-1	1.516E-3	3.000E-2	5.123E-1	8.765E-4	8.288E-2	1.084E-3	6.010E-2	0	-3.291E+0	-2.633E+0
PM	disease inc.	5.834E-8	1.795E-9	1.961E-9	6.210E-8	9.571E-10	1.602E-9	1.371E-9	1.603E-8	0	-3.349E-8	4.856E-8
IR	kBq U-235 eq	2.380E-2	1.682E-4	4.101E-4	2.438E-2	8.547E-5	5.056E-3	1.330E-4	3.727E-3	0	-7.282E-2	-3.943E-2
ETP-fw	CTUe	4.097E+1	4.468E-1	1.061E+0	4.248E+1	3.169E-1	1.465E+0	2.557E-1	8.679E+0	0	-1.338E+1	3.981E+1
HTP-c	CTUh	1.357E-9	1.637E-11	3.694E-11	1.411E-9	1.245E-11	6.125E-11	8.455E-12	3.196E-10	0	-5.656E-10	1.247E-9
HTP-nc	CTUh	5.756E-8	3.286E-10	1.486E-9	5.937E-8	1.878E-10	1.638E-9	2.372E-10	5.517E-9	0	-2.637E-8	4.058E-8
SQP	Pt	3.537E+0	1.573E-1	7.039E-1	4.398E+0	4.762E-2	1.551E-1	1.595E-1	2.293E+0	0	-2.829E+0	4.225E+0
Resource use	Unit	A1	A2	A3	A1-A3	A4	A5	C2	C3	C4	D	Total
PERE	MJ	9.593E-1	5.374E-3	8.442E-1	1.809E+0	2.846E-3	6.883E-2	4.125E-3	1.481E-1	0	-5.076E+0	-3.043E+0
PERM	MJ	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	9.593E-1	5.374E-3	8.442E-1	1.809E+0	2.846E-3	6.883E-2	4.125E-3	1.481E-1	0	-5.076E+0	-3.043E+0
PENRE	MJ	2.851E+1	5.122E-1	2.262E-1	2.925E+1	3.764E-1	1.942E+0	2.790E-1	3.285E+0	0	-3.510E+1	3.133E-2
PENRM	MJ	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.851E+1	5.122E-1	2.262E-1	2.925E+1	3.764E-1	1.942E+0	2.790E-1	3.285E+0	0	-3.510E+1	3.133E-2
PET	MJ	2.947E+1	5.175E-1	1.070E+0	3.105E+1	3.792E-1	2.011E+0	2.831E-1	3.433E+0	0	-4.017E+1	-3.011E+0
SM	kg	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0
FW	m3	1.428E-2	4.867E-5	7.006E-4	1.502E-2	2.773E-5	2.090E-3	3.523E-5	1.774E-3	0	-7.594E-2	-5.698E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	A4	A5	C2	C3	C4	D	Total
HWD	kg	5.193E-5	2.708E-6	7.163E-6	6.180E-5	1.811E-6	9.216E-7	1.669E-6	1.172E-5	0	-1.627E-1	-1.627E-1
NHWD	kg	1.368E-1	1.193E-2	6.678E-3	1.554E-1	2.748E-3	2.706E-3	1.304E-2	1.666E-1	0	-5.755E-2	2.830E-1
RWD	kg	1.591E-5	1.026E-7	2.75								

On-site renewable energy

Our dedicated renewable wind and solar generated energy drives down the embodied carbon in our low carbon ranges.

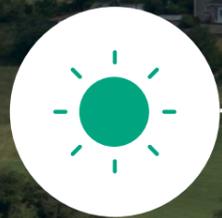
99.5m, 2.3 MWp
On-site wind turbine



20 hectare
Manufacturing site



Brett Martin HQ
Mallusk, Co. Antrim



6.42 MWp
Dedicated solar farm

Head Office & Global Sales

Brett Martin Ltd
24 Roughfort Road
Newtownabbey, Co. Antrim
Northern Ireland, BT36 4RB

3958/0325

t: +44 (0) 28 9084 9999
f: +44 (0) 28 9083 6666
e: technical@brettmartin.com
commercial@brettmartin.com

For the latest information visit
brettmartin.com

