

GWP Guide

Environmental Product Declaration Summary for Insulated Panels



PLANET PASSIONATE PROGRAMME

– OUR MISSION FOR THE PLANET

Climate change is one of the most important issues facing the world today. To protect our planet, we need to prevent a 1,5°C rise in global temperatures this century. To do this, carbon emissions need to be cut to net zero globally by 2050 - but we are currently on course to miss this goal by at least five-fold.

The built environment has a key role to play in this challenge. Today, buildings and construction together account for **36%** of global final energy use and **39%** of energy-related CO₂ emissions when upstream power generation is included.

Planet Passionate – our global sustainability programme

Planet Passionate is Kingspan's ambitious global sustainability programme that aims to impact three big global issues:

- Climate change
- Circularity
- Protection of our natural world

By setting ourselves challenging targets in the areas of energy, carbon, circularity and water, we aim to make significant advances in the sustainability of both our business operations and our products.



OUR 2030 GLOBAL COMMITMENTS



Carbon

- **65% reduction** in scope 1 and 2 GHG emissions by 2030
- **15% carbon intensity reduction** for key raw materials by 2030
- **>90% Zero emission** company funded cars-annual replacements by 2030



Energy

- **60%** direct renewable energy by 2030
- **ISO 50001** energy management system for **large sites***
- Install solar PV systems on **all owned facilities** by 2030



Circularity

- **Zero company waste** to landfill by 2030
- **1.5 Million tonnes** of recycled and renewable raw materials used annually by 2030
- **Facilitate 20** product takeback and recycling schemes by 2030



Water

- **100 million** litres of rainwater harvested annually by 2030

*Large sites: >5GWh annual energy use

OUR DECARBONISATION TARGETS

Planet Passionate
Decarbonisation Targets
that impact our products

65%

carbon out of our manufacturing operations by 2030*

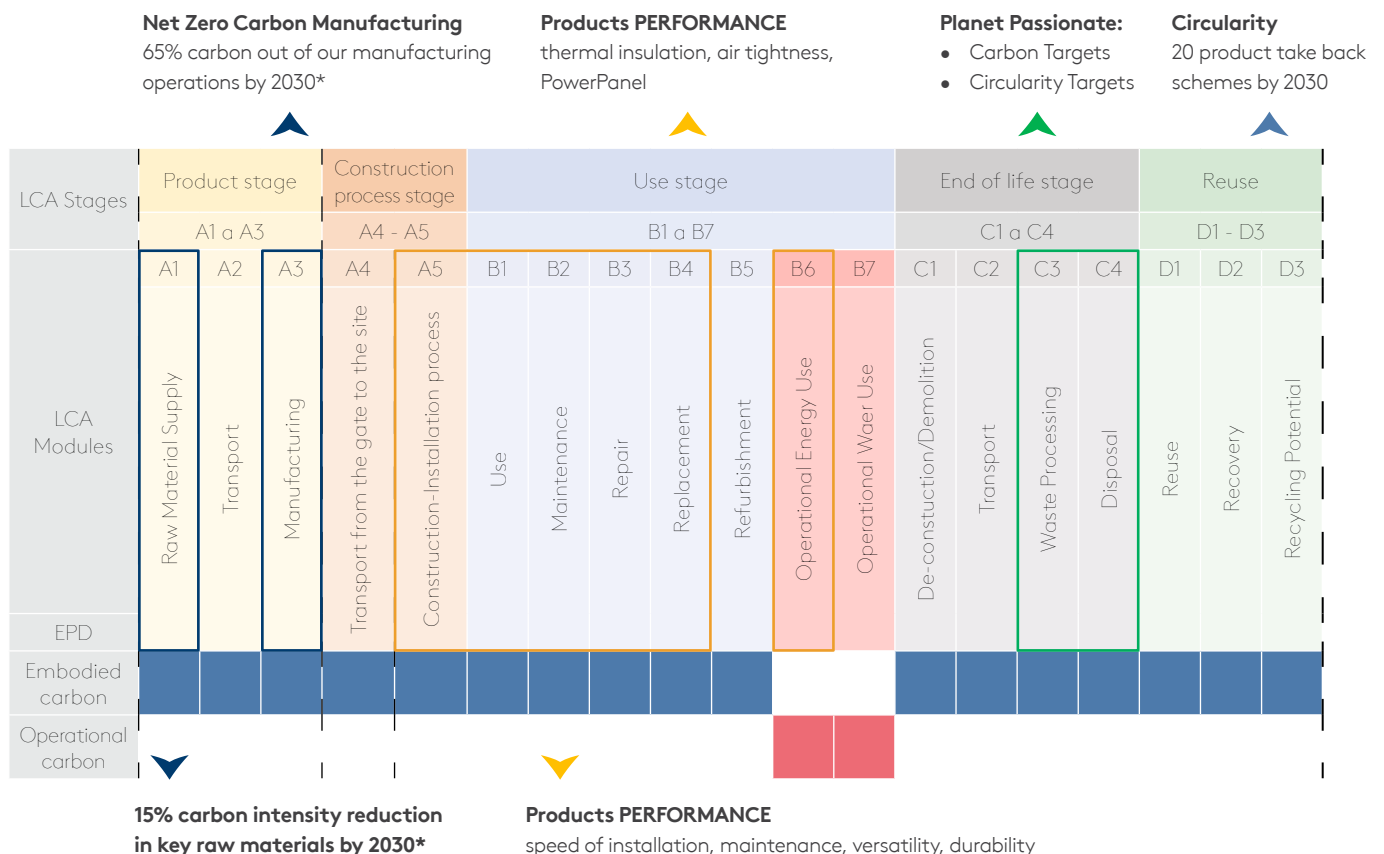
15%

carbon intensity out of key raw materials by 2030*

* When compared with a 2020 baseline



HOW OUR PLANET PASSIONATE PROGRAMME IMPACTS A PRODUCT LIFE CYCLE?



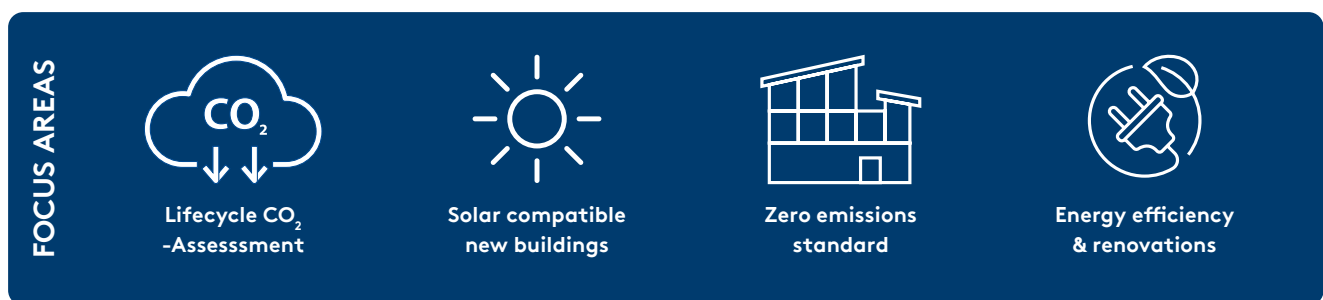
WHY CO₂ COUNTS EU BUILDING REGULATIONS

On 12 March 2024, the EU Parliament and EU Council approved the revised Energy Performance of Buildings Directive (EPBD), marking a pivotal step in the EU's climate agenda for the built environment.

A key innovation of the revised EPBD is the mandatory calculation and reporting of buildings' carbon footprints — measured as Global Warming Potential (GWP) — in line with EN 15978 and the Level(s) framework. This requirement applies to buildings over 1,000 m² from 2028, expanding to all new buildings by 2030.

Alongside GWP reporting, the EPBD introduces zero on-site fossil fuel emission standards for new buildings from 2028 (public) and 2030 (all), energy efficiency reduction targets of 16–22% for residential buildings by 2030–2035, and mandatory renovation of the worst-performing non-residential building stock.

Understanding and accurately calculating GWP values is therefore becoming a fundamental requirement for developers, designers, and building owners across the EU — and the starting point for a more sustainable built environment.



What is an EPD?

An Environmental Product Declaration (EPD) is a standardised, third-party verified document summarising a product's environmental impacts — including Global Warming Potential (GWP), ozone depletion, and water pollution — based on Life Cycle Assessment (LCA) methodology and ISO 14025.

Important — two versions of EN 15804

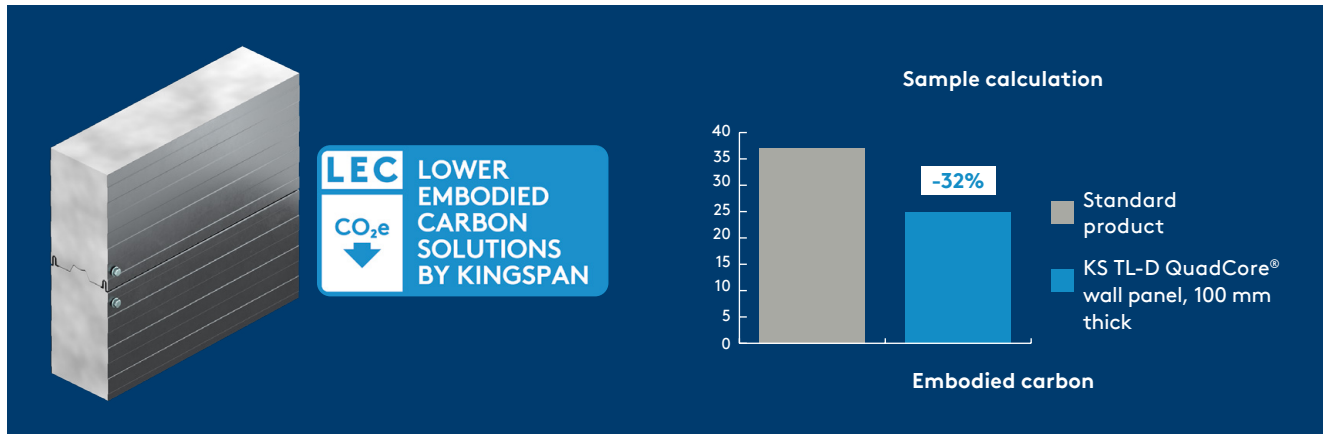
EPDs are issued under two versions of the EN 15804 standard: EN 15804+A1:2013 and the updated EN 15804+A2:2020 (mandatory since July 2022). Both remain valid, but due to differences in impact category units, results between versions cannot be directly compared. Always check which version an EPD was issued under.



THE KINGSPAN LEC PRODUCT RANGE

Kingspan LEC products have been specially developed to reduce the carbon footprint of buildings. Based on comparative EPDs in accordance with standard EN15804-A2, this innovation shows a 32 per cent* reduction in embodied carbon in modules A1-A3 (product stage) for KS-TL-D QuadCore® with a thickness of 100 mm.

The reduction in embodied carbon in our panels is achieved through responsible sourcing of raw materials with lower CO₂e intensity and through carbon reduction measures in our production facilities.



GLOBAL WARMING POTENTIAL (GWP) (KG CO₂ EQV./M²)

Wall Panels QuadCore®

KS TF QuadCore® Wall Panel (60-80 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
60	28,90	18,17	33,66	22,93	0,25	0,25	0,050	0,050	4,23	4,23	0,0058	0,0058	-7,89	-1,05
80	31,10	20,37	37,20	26,47	0,25	0,25	0,053	0,053	5,57	5,57	0,0070	0,0070	-8,02	-1,18

KS TL QuadCore® Wall Panel (100-200 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
100	35,22	23,89	42,76	31,43	0,25	0,25	0,059	0,059	7,00	7,00	0,0083	0,0083	-8,56	-1,33
120	35,44	24,71	44,25	33,52	0,25	0,25	0,061	0,061	8,27	8,27	0,0093	0,0093	-6,89	-1,44
150	38,65	27,92	49,49	38,76	0,25	0,25	0,066	0,066	10,29	10,29	0,0110	0,0110	-8,49	-1,64
170	40,26	29,53	52,33	41,60	0,25	0,25	0,069	0,069	11,51	11,51	0,0121	0,0121	-8,60	-1,76
200	44,05	33,33	58,27	47,55	0,25	0,25	0,075	0,075	13,66	13,66	0,0140	0,0140	-8,82	-1,97

KS AT QuadCore® Wall Panel (60-170 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
60	28,90	18,17	33,66	22,93	0,25	0,25	0,050	0,050	4,23	4,23	0,0058	0,0058	-7,89	-1,05
80	31,10	20,37	37,20	26,47	0,25	0,25	0,053	0,053	5,57	5,57	0,0070	0,0070	-8,02	-1,18
100	35,22	23,89	42,76	31,43	0,25	0,25	0,059	0,059	7,00	7,00	0,0083	0,0083	-8,56	-1,33
120	35,44	24,71	44,25	33,52	0,25	0,25	0,061	0,061	8,27	8,27	0,0093	0,0093	-6,91	-1,44
150	38,65	27,92	49,49	38,76	0,25	0,25	0,066	0,066	10,29	10,29	0,0110	0,0110	-8,49	-1,64
170	40,26	29,53	52,33	41,60	0,25	0,25	0,069	0,069	11,51	11,51	0,0121	0,0121	-8,60	-1,76



standard product

*average value according to EPD

GLOBAL WARMING POTENTIAL (GWP) (KG CO₂ EQV./M²)

Wall Panels K-Roc®

KS RF/KS RH C K-Roc® Wall Panel (80-240 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
80	23,24	12,37	23,63	13,01	0,02	0,17	0,14	0,06	0,20	0,13	0,02	0,04	-165,76	-5,42
100	25,75	13,90	26,18	14,59	0,02	0,17	0,16	0,07	0,23	0,14	0,03	0,05	-183,68	-5,92
120	27,95	15,64	28,42	16,38	0,03	0,17	0,17	0,08	0,25	0,15	0,03	0,06	-199,36	-6,50
150	31,40	18,23	31,93	19,08	0,03	0,17	0,19	0,10	0,28	0,18	0,03	0,07	-224,00	-7,41
175	34,23	20,36	34,80	21,27	0,03	0,17	0,21	0,11	0,30	0,19	0,04	0,08	-244,16	-8,18
200	37,05	22,48	37,67	23,47	0,03	0,17	0,22	0,12	0,33	0,21	0,04	0,10	-264,32	-8,88
220	39,56	24,41	40,23	25,47	0,04	0,17	0,24	0,14	0,35	0,23	0,04	0,10	-282,24	-9,64
240	41,76	26,30	42,46	27,42	0,04	0,17	0,25	0,15	0,37	0,24	0,04	0,11	-297,92	-10,33

KS RF/KS RH F K-Roc® Wall Panel (80-240 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
80	25,9	14,6	26,3	15,4	0,02	0,25	0,16	0,07	0,21	0,15	0,03	0,05	-249,92	-0,60
100	28,8	16,9	29,3	17,8	0,02	0,25	0,18	0,09	0,23	0,17	0,03	0,07	-278,08	-0,68
120	31,8	19,2	32,3	20,1	0,02	0,25	0,20	0,10	0,26	0,19	0,04	0,08	-306,24	-0,76
150	36,5	22,3	37,1	23,4	0,03	0,25	0,23	0,13	0,29	0,21	0,04	0,10	-352,00	-0,86
160	38,0	23,8	38,6	24,9	0,03	0,25	0,24	0,13	0,31	0,22	0,04	0,10	-366,08	-0,92
175	40,2	25,3	40,8	26,5	0,03	0,25	0,25	0,14	0,32	0,23	0,05	0,11	-387,20	-0,96
200	44,2	28,2	44,9	29,5	0,03	0,25	0,27	0,16	0,36	0,26	0,05	0,13	-425,92	-1,06
220	47,1	30,3	47,8	31,7	0,04	0,25	0,29	0,18	0,38	0,28	0,06	0,14	-454,08	-1,13
240	50,4	33,2	51,2	34,7	0,04	0,25	0,31	0,19	0,41	0,30	0,06	0,15	-485,76	-1,24



standard product

*average value according to EPD

GLOBAL WARMING POTENTIAL (GWP) (KG CO₂ EQV./M²)

Wall Panels IPN

KS TF Wall Panel (60-80 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
60	29,28	17,48	34,31	22,51	0,22	0,22	0,052	0,052	4,60	4,60	0,0067	0,0067	-11,54	-0,73
80	31,16	19,47	37,60	25,91	0,22	0,22	0,055	0,055	6,05	6,05	0,0081	0,0081	-11,55	-0,84

KS TL Wall Panel (100-200 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
100	35,6	22,9	43,8	31,0	0,22	0,22	0,063	0,063	7,57	7,57	0,0100	0,0100	-12,78	-1,13
120	36,0	24,2	45,4	33,5	0,22	0,22	0,063	0,063	8,77	8,77	0,0109	0,0109	-12,21	-1,24
150	39,44	27,32	50,99	38,87	0,22	0,22	0,069	0,069	10,83	10,83	0,0129	0,0129	-12,64	-1,53
170	41,16	29,25	54,10	42,19	0,22	0,22	0,072	0,072	12,22	12,22	0,0143	0,0143	-12,55	-1,64
200	44,33	32,45	59,56	47,68	0,22	0,22	0,078	0,078	14,33	14,33	0,0163	0,0163	-12,87	-1,98

KS AT Wall Panel (60-170 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
60	29,28	17,48	34,31	22,51	0,22	0,22	0,052	0,052	4,60	4,60	0,0067	0,0067	-11,54	-0,73
80	31,16	19,47	37,60	25,91	0,22	0,22	0,055	0,055	6,05	6,05	0,0081	0,0081	-11,55	-0,84
100	35,64	22,92	43,76	31,05	0,22	0,22	0,063	0,063	7,57	7,57	0,0100	0,0100	-12,78	-1,13
120	36,01	24,16	45,37	33,53	0,22	0,22	0,063	0,063	8,77	8,77	0,0109	0,0109	-12,21	-1,24
150	39,44	27,32	50,99	38,87	0,22	0,22	0,069	0,069	10,83	10,83	0,0129	0,0129	-12,64	-1,53
170	41,16	29,25	54,10	42,19	0,22	0,22	0,072	0,072	12,22	12,22	0,0143	0,0143	-12,55	-1,64

 LEC Variant
 standard product

*average value according to EPD

GLOBAL WARMING POTENTIAL (GWP) (KG CO₂ EQV./M²)

Architectural Facade Systems

KS Karrier KL QuadCore® Architectural Facade System (100-200 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
100	35,22	23,89	42,76	31,43	0,25	0,25	0,059	0,059	7,00	7,00	0,0083	0,0083	-8,56	-1,33
120	35,44	24,71	44,25	33,52	0,25	0,25	0,061	0,061	8,27	8,27	0,0093	0,0093	-6,91	-1,44
150	38,65	27,92	49,49	38,76	0,25	0,25	0,066	0,066	10,29	10,29	0,0110	0,0110	-8,49	-1,64
170	40,26	29,53	52,33	41,60	0,25	0,25	0,069	0,069	11,51	11,51	0,0121	0,0121	-8,60	-1,76
200	44,05	33,33	58,27	47,55	0,25	0,25	0,075	0,075	13,66	13,66	0,0140	0,0140	-8,82	-1,97

KS Karrier KL architectural facade system (100-200 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
100	35,6	22,9	43,8	31,0	0,22	0,22	0,063	0,063	7,57	7,57	0,0100	0,0100	-12,78	-1,13
120	36,0	24,2	45,4	33,5	0,22	0,22	0,063	0,063	8,77	8,77	0,0109	0,0109	-12,21	-1,24
150	39,44	27,32	50,99	38,87	0,22	0,22	0,069	0,069	10,83	10,83	0,0129	0,0129	-12,64	-1,53
170	41,16	29,25	54,10	42,19	0,22	0,22	0,072	0,072	12,22	12,22	0,0143	0,0143	-12,55	-1,64
200	44,33	32,45	59,56	47,68	0,22	0,22	0,078	0,078	14,33	14,33	0,0163	0,0163	-12,87	-1,98

KS Karrier KT K-Roc® Architectural Facade System (80-240 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
80	23,24	12,37	23,63	13,01	0,02	0,17	0,14	0,06	0,20	0,13	0,02	0,04	-165,76	-5,42
100	25,75	13,90	26,18	14,59	0,02	0,17	0,16	0,07	0,23	0,14	0,03	0,05	-183,68	-5,92
120	27,95	15,64	28,42	16,38	0,03	0,17	0,17	0,08	0,25	0,15	0,03	0,06	-199,36	-6,50
150	31,40	18,23	31,93	19,08	0,03	0,17	0,19	0,10	0,28	0,18	0,03	0,07	-224,00	-7,41
175	34,23	20,36	34,80	21,27	0,03	0,17	0,21	0,11	0,30	0,19	0,04	0,08	-244,16	-8,18
200	37,05	22,48	37,67	23,47	0,03	0,17	0,22	0,12	0,33	0,21	0,04	0,10	-264,32	-8,88
220	39,56	24,41	40,23	25,47	0,04	0,17	0,24	0,14	0,35	0,23	0,04	0,10	-282,24	-9,64
240	41,76	26,30	42,46	27,42	0,04	0,17	0,25	0,15	0,37	0,24	0,04	0,11	-297,92	-10,33

 LEC Variant
 standard product

*average value according to EPD

GLOBAL WARMING POTENTIAL (GWP) (KG CO₂ EQV./M²)

Roof Panels QuadCore®

KS RW QuadCore® Roof Panel (40-160 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
40	27,09	16,36	30,71	19,98	0,25	0,25	0,047	0,047	3,09	3,09	0,0048	0,0048	-7,78	-0,93
60	28,90	18,17	33,66	22,93	0,25	0,25	0,050	0,050	4,23	4,23	0,0058	0,0058	-7,89	-1,05
80	31,10	20,37	37,20	26,47	0,25	0,25	0,053	0,053	5,57	5,57	0,0070	0,0070	-8,02	-1,18
100	35,22	23,89	42,76	31,43	0,25	0,25	0,059	0,059	7,00	7,00	0,0083	0,0083	-8,56	-1,33
120	35,44	24,71	44,25	33,52	0,25	0,25	0,061	0,061	8,27	8,27	0,0093	0,0093	-6,91	-1,44
140	45,47	30,72	55,71	40,96	0,25	0,25	0,079	0,079	9,68	9,68	0,0114	0,0114	-11,09	-1,69
160	39,34	28,61	50,80	40,07	0,25	0,25	0,068	0,068	10,91	10,91	0,0116	0,0116	-8,55	-1,70

KS X-dek XD QuadCore® Roof System (100-140 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
100	35,22	23,89	42,76	31,43	0,25	0,25	0,059	0,059	7,00	7,00	0,0083	0,0083	-8,56	-1,33
140	45,47	30,72	55,71	40,96	0,25	0,25	0,079	0,079	9,68	9,68	0,0114	0,0114	-11,09	-1,69

KS X-dek XM QuadCore® Roof System (100-140 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
100	42,36	30,16	49,43	37,23	0,06	0,06	0,07	0,07	6,70	6,70	0,024	0,024	-11,14	-0,85
140	45,26	33,14	55,15	43,03	0,06	0,06	0,04	0,04	9,55	9,55	0,024	0,024	-11,18	-0,89

KS X-dek XG QuadCore® Roof System (100-140 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
100	38,07	25,85	44,54	32,32	0,06	0,06	0,07	0,07	6,11	6,11	0,022	0,022	-11,14	-0,85
140	40,81	28,67	50,09	37,95	0,06	0,06	0,04	0,04	8,94	8,94	0,021	0,021	-11,17	-0,88



standard product

*average value according to EPD

GLOBAL WARMING POTENTIAL (GWP) (KG CO₂ EQV./M²)

Roof Panels

KS RW Roof Panel (40-160 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
40	27,08	15,50	30,86	19,28	0,22	0,22	0,048	0,048	3,38	3,38	0,0056	0,0056	-11,21	-0,60
60	29,28	17,48	34,31	22,51	0,22	0,22	0,052	0,052	4,60	4,60	0,0067	0,0067	-11,54	-0,73
80	31,16	19,47	37,60	25,91	0,22	0,22	0,055	0,055	6,05	6,05	0,0081	0,0081	-11,55	-0,84
100	35,64	22,92	43,76	31,05	0,22	0,22	0,063	0,063	7,57	7,57	0,0100	0,0100	-12,78	-1,13
120	36,01	24,16	45,37	33,53	0,22	0,22	0,063	0,063	8,77	8,77	0,0109	0,0109	-12,21	-1,24
140	41,28	28,90	53,53	41,15	0,22	0,22	0,072	0,072	11,61	11,61	0,0137	0,0137	-13,08	-1,73
160	39,26	28,07	51,73	40,54	0,22	0,22	0,069	0,069	11,94	11,94	0,0137	0,0137	-11,79	-1,54

KS X-dek XD Roof System (100-140 mm)

Thickness	A1-A3 kg CO ₂ eq./m ²		A-C kg CO ₂ eq./m ²		C1		C2		C3		C4		D	
	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC	STD	LEC
100	35,6	22,9	43,8	31,0	0,22	0,22	0,063	0,063	7,57	7,57	0,0100	0,0100	-12,78	-1,13
140	41,3	28,9	53,5	41,1	0,22	0,22	0,072	0,072	11,61	11,61	0,0137	0,0137	-13,08	-1,73

 LEC Variant
 standard product

*average value according to EPD

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