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KORE

INSULATION

Carbon, EPDs and LCAs

What Exactly is Carbon?

Carbon is one of the 118 elements in the periodic table. When we talk about carbon, we're really using it as a shorthand term for carbon dioxide (CO₂).

CO₂ is only one of the harmful greenhouse gases that contributes to climate change. There are six others, including:

- Methane (CH₄)
- Nitrous Oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF₆)
- Nitrogen trifluoride (NF₃)

To make it easier to talk about, and to encompass all the greenhouse gases in a common unit, we use the term carbon dioxide equivalent (CO₂e) when referring to carbon.

For any quantity and type of greenhouse gas, CO₂e represents the amount of CO₂ that would have an equivalent global warming effect.

A word of caution when comparing CO₂e totals: it's crucial to ensure that the same greenhouse gases are included in the totals being compared to make accurate, like-for-like comparisons.

One of the key components of CO₂e is the Global Warming Potential (GWP). GWP is a measure of how much heat a greenhouse gas traps in the atmosphere over a specific time period, usually 100 years, compared to CO₂.

Different gases have different GWPs. For instance, methane (CH₄) has a GWP of 28-36 times that of CO₂ over 100 years, and nitrous oxide (N₂O) has a GWP of about 298 times that of CO₂. By using GWP, CO₂e provides a common scale to assess the impact of different greenhouse gases (GHGs)

CO₂e is important because humans produce it in a massive quantity and it hangs around for a long time without dissipating. It's always been around, but it's the rate of production that has accelerated massively since the start of the industrial revolution (3-5 million metric tons per year during the late 18th century, to 37 billion metric tons per year today).

The connection between carbon and climate means that efforts are being made to reduce its use. This means reducing the amount of oil we use as an ingredient, or the amount of energy we use to make and manufacture things.

It's all about doing more with less.

Did You Know?

KORE's Low Carbon Insulation has a negative Global Warming Potential. This means carbon is removed from the atmosphere during the raw material sourcing stage!

Using KORE's low carbon product range will save 2.223kg CO₂ equivalent for the production of 1kg of EPS versus standard KORE EPS.

WHY EXPANDED POLYSTYRENE



High-performance thermal insulation
material made of 98% air



Does not decompose
EPS will last the building's lifetime with no loss in performance



Water & moisture resistant
EPS can be installed in damp or wet conditions



Lightweight & practical:
It's safe and easy to use and install



Best price/performance ratio
compared to competing insulation materials



Compatible with most applications
Manufactured in almost any shape, size and density



Eco-friendly & Low Carbon Alternative
A manufacturing process with no harmful emissions



Non-toxic & Certified
CFC, HCFC free & EPD certified



Reduced Embodied Carbon
Significantly reduced embodied carbon for a number of products vs. the competition

KORE EPS

What's an Environmental Product Declaration?

An Environmental Product Declaration, or EPD, is a standardised document that provides comprehensive information about the environmental impact of a product throughout its lifecycle. This allows you, the consumer, with transparent and verified data, to make more informed decisions about the environmental performance of products.

EPDs are based on a Lifecycle Assessment, or LCA, for short. An LCA looks at the full lifecycle of a product, from raw material extraction, manufacturing, use, to disposal or recycling. You may also hear the term "cradle-to-grave" to explain a Lifecycle Assessment.

The Basics of an LCA

A lifecycle assessment is broken into several modules, also known as the "phases" of the life cycle. The primary modules, or phases are:

- Module A: Raw Material Acquisition:
 - A1: Extraction and processing of raw materials
 - A2: Transport of raw materials to the manufacturing site
 - A3: Manufacturing and production processes
- Module A4 - A5: Construction Stage
 - A4: Transport to the building site
 - A5: Installation into the building
- Module B: Construction or Manufacturing Phase:
 - B1: Use of the product
 - B2: Maintenance during the use phase
 - B3: Repair processes during the use phase
 - B4: Replacement of parts or the product itself during use
 - B5: Refurbishment during the product's use phase
 - B6: Operational energy use
 - B7: Operational water use
- Module C: End of Life
 - C1: Deconstruction or demolition of the product
 - C2: Transport of waste materials to disposal or recycling facilities

- C3: Waste processing for recycling or reuse
- C4: Final disposal, such as landfilling or incineration
- Module D: Benefits and Loads Beyond the System Boundary
 - Accounting for the benefits or the burdens of recycling, reuse and recovery beyond the primary lifecycle of the product. Module D includes the impacts of secondary materials that are recovered and used in other processes or products. This can either reduce or add to the overall environmental impact.

Outside of the primary modules in an LCA, they may also cover:

- Cradle-to-Gate: Modules A1 to A3. This focuses only on the impacts up to the point where the product leaves the manufacturer
- Cradle-to-Grave: Covers all modules from A to C, encompassing the entire lifecycle of the product from raw material extraction to disposal
- Cradle-to-Cradle: This extends the approach by considering the recycling and reuse of the product at the end of its life, closing the loop.

Each module within the LCA is assessed in various environmental impact categories. This includes greenhouse gas emissions, energy consumption, water usage, and potential effects on human health and ecosystems.

EPD Verification

Many EPDs are third-party verified. This ensures the accuracy and reliability of the data provided. KORE's Environmental Product Declarations are third-party verified by the Irish Green Building Council and EPD Ireland. They follow international standards including ISO 14025 and EN 15804 to ensure consistency and comparability across a variety of products and producers.

Sample Environmental Product Declaration

4.2.A. LCA results - EPS 70 Silver

Core Environmental impact per 1 m² EPS 70 board, 100mm thick

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3.94E+00	2.69E-01	4.92E-01	4.70E+00	4.97E-02	2.06E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	5.89E-02	0.00E+00	4.50E+00	-2.30E+00
GWP-fossil	[kg CO ₂ eq.]	3.93E+00	2.68E-01	4.85E-01	4.68E+00	4.97E-02	4.54E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	5.88E-02	0.00E+00	4.50E+00	-2.26E+00
GWP-biogenic	[kg CO ₂ eq.]	1.24E-02	1.63E-04	7.37E-03	1.99E-02	2.67E-05	-2.45E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	3.16E-05	0.00E+00	9.51E-05	-3.65E-02
GWP-luluc	[kg CO ₂ eq.]	1.28E-04	1.10E-04	3.94E-05	2.77E-04	1.77E-05	2.22E-04	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.09E-05	0.00E+00	8.56E-06	-1.87E-03
ODP	[kg CFC-11 eq.]	2.68E-09	5.98E-08	8.64E-08	1.49E-07	1.13E-08	1.25E-08	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.34E-08	0.00E+00	4.07E-09	-1.12E-07
AP	[mol H ⁺ eq.]	1.15E-02	1.55E-03	4.16E-03	1.72E-02	1.43E-04	1.71E-03	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.69E-04	0.00E+00	5.66E-04	-7.68E-03
EP-freshwater ^[1]	[kg P eq.]	1.36E-05	2.45E-06	1.75E-06	1.78E-05	3.97E-07	1.63E-06	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.70E-07	0.00E+00	4.40E-07	-3.18E-05
EP-marine	[kg N eq.]	2.22E-03	3.15E-04	1.79E-03	4.32E-03	2.82E-05	5.16E-04	ND	ND	ND	ND	ND	ND	ND	0.00E+00	3.34E-05	0.00E+00	2.66E-04	-1.36E-03
EP-terrestrial	[mol N eq.]	2.39E-02	3.53E-03	1.96E-02	4.70E-02	3.16E-04	5.60E-03	ND	ND	ND	ND	ND	ND	ND	0.00E+00	3.74E-04	0.00E+00	2.85E-03	-1.54E-02
POCP	[kg NMVOC eq.]	9.09E-03	1.11E-03	4.48E-02	5.49E-02	1.21E-04	5.66E-03	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.43E-04	0.00E+00	6.87E-04	-7.15E-03
ADP-minerals&metals ^[2]	[kg Sb eq.]	2.43E+01	6.42E-06	1.31E-06	2.43E+01	1.37E-06	1.22E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.62E-06	0.00E+00	7.19E-07	-1.53E-05
ADP-fossils ^[2]	[MJ ncv]	1.04E+02	4.02E+00	6.95E+00	1.15E+02	7.51E-01	9.04E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	8.89E-01	0.00E+00	4.02E-01	-3.98E+01
WDP ^[2]	m ³ world eq. deprived	7.10E-01	1.40E-02	1.20E-01	8.44E-01	2.12E-03	5.98E-02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.52E-03	0.00E+00	3.25E-02	-3.12E-01

GWP-total = Global Warming Potential total; GWP-fossil = Global Warming Potential fossil fuels (GWP-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; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossils = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential, deprivation-weighted water consumption.

^[1]The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ND = Module not declared; INA = Indicator not assessed.

The sample EPD above looks at the Core Environmental Impact per 1 square meter of KORE EPS70 Silver Board, cut at a thickness of 100mm.

The dataset includes:

- Module A1-A3
- Module A4-A5
- Module C1-C4
- Module D

It does not include Module B, the use stage, as in this stage all impacts are related to the use of the building over the entire lifecycle which falls outside of the control of the manufacturer.

KORE Insulation offers Environmental Product Declarations for its full range of rigid board and cavity wall insulation products. This includes EPS70 White & Silver, EPS100 White & Silver, EPS150 White, EPS200 White, EPS300 White and KORE Fill Bonded Bead.

KORE's EPD also includes data for output flows and waste categories and additional environmental impacts, including potential incidence of disease due to PM emissions and potential soil quality index.

What are the most common metrics in an EPD?

The most common metrics in an EPD include:

- Global Warming Potential: measured in kg CO₂ equivalent. This shows the product's contribution to climate change.
- Ozone Depletion Potential: measured in kg CFC-11 equivalent. This reflects the product's impact on the ozone layer.
- Acidification Potential: measured in kg SO₂ equivalent. This is the product's acid rain potential.
- Eutrophication Potential: Measured in kg PO₄³⁻ equivalent. This is an indicator of nutrient pollution in bodies of water.
- Photochemical Ozone Creation Potential: Measured in kg C₂H₄ equivalent. This relates to smog formation.

There are many other categories included within an EPD. For the most up-to-date data please contact the KORE technical team.

A1-A3 Tables for KORE EPS



The following tables are found in the current published EPDs for KORE EPS. The tables display data from A1 to A3, showing the product's core environmental impact.

The “core environmental impact” is an assessment of the main environmental impacts associated with a product throughout its life cycle.

For the full published data, please visit the KORE website. You can also find KORE's most up-to-date EPDs on the Irish Green Building Council website or the EPD Ireland database.

KORE EPS70 White

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
GWP-total	[kg CO ₂ eq.]	3.96E+00	8.55E-02	4.92E-01	4.54E+00
GWP-fossil	[kg CO ₂ eq.]	3.95E+00	8.54E-02	4.84E-01	4.52E+00
GWP-biogenic	[kg CO ₂ eq.]	1.21E-02	7.41E-05	7.37E-03	1.95E-02
GWP-luluc	[kg CO ₂ eq.]	5.69E-05	4.07E-05	3.94E-05	1.37E-04
ODP	[kg CFC-11 eq.]	2.70E-09	1.76E-08	8.64E-09	1.07E-07
AP	[mol H ⁺ eq.]	1.26E-02	1.59E-03	4.16E-03	1.83E-02
EP-freshwater[1]	[kg P eq.]	1.49E-05	1.21E-06	1.75E-06	1.79E-05
EP-marine	[kg N eq.]	2.32E-03	3.12E-04	1.79E-03	4.42E-03
EP-terrestrial	[mol N eq.]	2.49E-02	3.51E-03	1.96E-02	4.80E-02
POCP	[kg NMVOC eq.]	9.44E-03	9.43E-04	4.48E-02	5.51E-02
ADP-minerals&metals[5]	[kg Sb eq.]	1.00E-06	7.20E-07	1.31E-06	3.03E-06
ADP-fossils[6]	[MJ ncv]	1.29E+02	1.24E+00	6.95E+00	1.37E+02
WDP[3]	m ³ world eq. deprived	8.83E-01	8.09E-03	1.20E-01	9.66E-01

KORE EPS70 Silver

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
GWP-total	[kg CO ₂ eq.]	3.94E+00	2.69E-01	4.92E-01	4.70E+00
GWP-fossil	[kg CO ₂ eq.]	3.93E+00	2.68E-01	4.85E-01	4.68E+00
GWP-biogenic	[kg CO ₂ eq.]	1.24E-02	1.63E-04	7.37E-03	1.99E-02
GWP-luluc	[kg CO ₂ eq.]	1.28E-04	1.10E-04	3.94E-05	2.77E-04
ODP	[kg CFC-11 eq.]	2.68E-09	5.98E-08	8.64E-08	1.49E-07
AP	[mol H ⁺ eq.]	1.15E-02	1.55E-03	4.16E-03	1.72E-02
EP-freshwater[1]	[kg P eq.]	1.36E-05	2.45E-06	1.75E-06	1.78E-05
EP-marine	[kg N eq.]	2.22E-03	3.15E-04	1.79E-03	4.32E-03
EP-terrestrial	[mol N eq.]	2.39E-02	3.53E-03	1.96E-02	4.70E-02
POCP	[kg NMVOC eq.]	9.09E-03	1.11E-03	4.48E-02	5.49E-02
ADP-minerals&metals[5]	[kg Sb eq.]	2.43E+01	6.42E-06	1.31E-06	2.43E+01
ADP-fossils[6]	[MJ ncv]	1.04E+02	4.02E+00	6.95E+00	1.15E+02
WDP[3]	m ³ world eq. deprived	7.10E-01	1.40E-02	1.20E-01	8.44E-01

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
GWP-total	[kg CO ₂ eq.]	5.27E+00	1.14E-01	6.56E-01	6.04E-00
GWP-fossil	[kg CO ₂ eq.]	5.26E+00	1.14E-01	6.47E-01	6.02E+00
GWP-biogenic	[kg CO ₂ eq.]	1.67E-02	9.90E-05	9.84E-03	2.67E-02
GWP-luluc	[kg CO ₂ eq.]	5.69E-05	5.44E-05	5.26E-05	1.64E-04
ODP	[kg CFC-11 eq.]	2.77E-09	2.34E-08	1.15E-07	1.42E-07
AP	[mol H ⁺ eq.]	1.67E-02	2.13E-03	5.56E-03	2.44E-02
EP-freshwater[1]	[kg P eq.]	1.91E-05	1.61E-06	2.33E-06	2.31E-05
EP-marine	[kg N eq.]	3.08E-03	4.17E-04	2.39E-03	5.89E-03
EP-terrestrial	[mol N eq.]	3.31E-02	4.69E-03	2.61E-02	6.39E-02
POCP	[kg NMVOC eq.]	1.25E-02	1.26E-03	5.98E-02	7.35E-02
ADP-minerals&metals[5]	[kg Sb eq.]	1.11E-06	9.59E-07	1.75E-06	3.81E-06
ADP-fossils[6]	[MJ ncv]	1.71E+02	1.66E+00	9.28E+00	1.82E+02
WDP[3]	m ³ world eq. deprived	1.10E+00	1.08E-02	1.60E-01	1.27E+00

KORE EPS100 Silver

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
GWP-total	[kg CO ₂ eq.]	5.25E+00	3.59E-01	6.57E-01	6.26E+00
GWP-fossil	[kg CO ₂ eq.]	5.23E+00	3.59E-01	6.48E-01	6.42E+00
GWP-biogenic	[kg CO ₂ eq.]	1.72E-02	2.18E-04	9.84E-03	2.72E-02
GWP-luluc	[kg CO ₂ eq.]	1.52E-04	1.47E-04	5.26E-05	3.51E-04
ODP	[kg CFC-11 eq.]	2.74E-09	8.00E-08	1.15E-07	1.98E-07
AP	[mol H ⁺ eq.]	1.52E-02	2.07E-03	5.56E-03	2.29E-02
EP-freshwater[1]	[kg P eq.]	1.74E-05	3.28E-06	2.33E-06	2.30E-05
EP-marine	[kg N eq.]	2.95E-03	4.21E-04	2.39E-03	5.76E-03
EP-terrestrial	[mol N eq.]	3.18E-02	4.72E-03	2.61E-02	2.62E-02
POCP	[kg NMVOC eq.]	1.21E-02	1.48E-03	5.98E-02	7.33E-02
ADP-minerals&metals[5]	[kg Sb eq.]	3.25E+01	8.58E-06	1.75E-06	3.25E+01
ADP-fossils[6]	[MJ ncv]	1.39E+02	5.38E+00	9.29E+00	1.54E+02
WDP[3]	m ³ world eq. deprived	9.31E-01	1.87E-02	1.60E-01	1.11E-00

KORE EPS150 White

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
GWP-total	[kg CO ₂ eq.]	6.31E+00	1.37E-01	7.89E-01	7.23E+00
GWP-fossil	[kg CO ₂ eq.]	6.29E+00	1.37E-01	7.77E-01	7.20E+00
GWP-biogenic	[kg CO ₂ eq.]	2.04E-02	1.19E-04	1.18E-02	3.24E-02
GWP-luluc	[kg CO ₂ eq.]	5.69E-05	6.52E-05	6.32E-05	1.85E-04
ODP	[kg CFC-11 eq.]	2.82E-09	2.81E-08	1.39E-07	1.70E-07
AP	[mol H ⁺ eq.]	2.00E-02	2.55E-03	6.68E-03	2.92E-02
EP-freshwater[1]	[kg P eq.]	2.25E-05	1.93E-06	2.80E-06	2.72E-05
EP-marine	[kg N eq.]	3.68E-03	5.00E-04	2.87E-03	7.05E-03
EP-terrestrial	[mol N eq.]	3.96E-02	5.63E-03	3.14E-02	7.66E-02
POCP	[kg NMVOC eq.]	1.50E-02	1.51E-03	7.18E-02	8.83E-02
ADP-minerals&metals[5]	[kg Sb eq.]	1.19E-06	1.15E-06	2.10E-06	4.43E-06
ADP-fossils[6]	[MJ ncv]	2.05E+02	1.99E+00	1.18E+01	2.18E+02
WDP[3]	m ³ world eq. deprived	1.31E+00	1.30E-02	1.92E-01	1.52E+00

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
GWP-total	[kg CO ₂ eq.]	6.28E+00	4.31E-01	7.88E-01	7.50E+00
GWP-fossil	[kg CO ₂ eq.]	6.26E+00	4.30E-01	7.77E-01	7.47E+00
GWP-biogenic	[kg CO ₂ eq.]	2.09E-02	2.62E-04	1.18E-02	3.30E-02
GWP-luluc	[kg CO ₂ eq.]	1.71E-04	1.76E-04	6.31E-05	4.10E-04
ODP	[kg CFC-11 eq.]	2.78E-09	9.59E-08	1.39E-07	2.37E-07
AP	[mol H ⁺ eq.]	1.82E-02	2.48E-03	6.68E-03	2.74E-02
EP-freshwater[1]	[kg P eq.]	2.03E-05	3.93E-06	2.80E-06	2.71E-05
EP-marine	[kg N eq.]	3.52E-03	5.05E-04	2.87E-03	6.90E-03
EP-terrestrial	[mol N eq.]	3.80E-02	5.66E-03	3.14E-02	7.50E-02
POCP	[kg NMVOC eq.]	1.44E-02	1.77E-03	7.18E-02	8.80E-02
ADP-minerals&metals[5]	[kg Sb eq.]	3.90E+01	1.03E-05	2.09E-06	3.90E+01
ADP-fossils[6]	[MJ ncv]	1.66E+02	6.44E+00	1.11E+01	1.84E+02
WDP[3]	m ³ world eq. deprived	1.11E+00	2.24E-02	1.92E-01	1.32E+00

KORE EPS200 White

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
GWP-total	[kg CO ₂ eq.]	7.78E+00	1.15E-01	9.88E-01	8.98E+00
GWP-fossil	[kg CO ₂ eq.]	7.85E+00	1.15E-01	9.73E-01	8.94E+00
GWP-biogenic	[kg CO ₂ eq.]	2.60E-02	1.17E-04	1.48E-02	4.09E-02
GWP-luluc	[kg CO ₂ eq.]	5.70E-05	1.34E-04	7.91E-05	2.70E-04
ODP	[kg CFC-11 eq.]	2.89E-09	2.27E-08	1.73E-07	1.99E-07
AP	[mol H ⁺ eq.]	2.49E-02	1.68E-03	8.35E-03	3.50E-02
EP-freshwater[1]	[kg P eq.]	2.75E-05	1.48E-06	3.51E-06	3.25E-05
EP-marine	[kg N eq.]	4.58E-03	4.30E-04	3.59E-03	8.61E-03
EP-terrestrial	[mol N eq.]	3.18E-02	4.72E-03	2.61E-02	2.62E-02
POCP	[kg NMVOC eq.]	1.86E-02	1.28E-03	8.98E-02	1.10E-01
ADP-minerals&metals[5]	[kg Sb eq.]	1.31E-06	1.11E-06	2.63E-06	5.05E-06
ADP-fossils[6]	[MJ ncv]	2.56E+02	1.60E+00	1.40E+01	2.72E+02
WDP[3]	m ³ world eq. deprived	1.63E+00	8.68E-03	2.40E-01	1.88E+00

KORE EPS300 White

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
GWP-total	[kg CO ₂ eq.]	1.05E+01	1.55E-01	1.33E+00	1.20E+01
GWP-fossil	[kg CO ₂ eq.]	1.05E+01	1.54E-01	1.31E+00	1.20E+01
GWP-biogenic	[kg CO ₂ eq.]	3.55E-02	1.57E-04	1.99E-02	5.56E-02
GWP-luluc	[kg CO ₂ eq.]	5.70E-05	1.80E-04	1.06E-04	3.43E-04
ODP	[kg CFC-11 eq.]	3.01E-09	3.04E-08	2.33E-07	2.66E-07
AP	[mol H ⁺ eq.]	3.34E-02	2.25E-03	1.12E-02	4.69E-02
EP-freshwater[1]	[kg P eq.]	3.62E-05	1.98E-06	4.71E-06	4.29E-05
EP-marine	[kg N eq.]	6.13E-03	5.78E-04	4.83E-03	1.15E-02
EP-terrestrial	[mol N eq.]	6.61E-02	6.44E-03	5.27E-02	1.25E-01
POCP	[kg NMVOC eq.]	2.49E-02	1.71E-03	1.21E-01	1.47E-01
ADP-minerals&metals[5]	[kg Sb eq.]	1.52E-06	1.49E-06	3.53E-06	6.53E-06
ADP-fossils[6]	[MJ ncv]	3.43E+02	2.14E+00	1.87E+01	3.64E+02
WDP[3]	m ³ world eq. deprived	2.17E+00	1.16E-02	3.23E-01	2.50E+00

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
GWP-total	[kg CO ₂ eq.]	2.46E+00	3.72E-02	2.63E-01	2.76E+00
GWP-fossil	[kg CO ₂ eq.]	2.46E+00	3.71E-02	2.58E-01	2.75E+00
GWP-biogenic	[kg CO ₂ eq.]	1.00E-02	3.77E-05	4.90E-03	1.50E-02
GWP-luluc	[kg CO ₂ eq.]	2.30E-04	4.34E-05	2.17E-05	2.95E-04
ODP	[kg CFC-11 eq.]	5.24E-11	7.31E-09	5.39E-08	6.12E-08
AP	[mol H ⁺ eq.]	4.36E-03	5.42E-04	2.64E-03	7.54E-03
EP-freshwater[1]	[kg P eq.]	3.82E-06	4.77E-07	9.68E-07	5.26E-06
EP-marine	[kg N eq.]	1.15E-03	1.39E-04	1.16E-03	2.44E-03
EP-terrestrial	[mol N eq.]	3.80E-02	5.66E-03	3.14E-02	7.50E-02
POCP	[kg NMVOC eq.]	4.80E-03	4.13E-04	2.94E-02	3.46E-02
ADP-minerals&metals[5]	[kg Sb eq.]	7.90E+01	3.55E-07	4.78E-07	7.90E+01
ADP-fossils[6]	[MJ ncv]	4.07E+00	5.14E-01	3.58E+00	8.17E+00
WDP[3]	m ³ world eq. deprived	9.36E-02	2.80E-03	7.41E-02	1.70E-01

KORE Fill Original Bonded Bead

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
GWP-total	[kg CO ₂ eq.]	2.66E+00	3.72E-02	2.63E-01	2.96E+00
GWP-fossil	[kg CO ₂ eq.]	2.66E+00	3.71E-02	2.58E-01	2.95E+00
GWP-biogenic	[kg CO ₂ eq.]	9.03E+03	3.77E-05	4.90E-03	1.40E-02
GWP-luluc	[kg CO ₂ eq.]	4.00E-04	4.34E-05	2.17E-05	4.65E-04
ODP	[kg CFC-11 eq.]	2.42E-09	7.31E-09	5.39E-08	6.36E-08
AP	[mol H ⁺ eq.]	4.76E-03	5.42E-04	2.64E-03	7.94E-03
EP-freshwater[1]	[kg P eq.]	2.50E-05	4.77E-07	9.68E-07	2.65E-05
EP-marine	[kg N eq.]	1.15E-03	1.39E-04	1.16E-03	2.44E-03
EP-terrestrial	[mol N eq.]	1.25E-02	1.55E-03	1.26E-02	2.67E-02
POCP	[kg NMVOC eq.]	1.86E-02	1.28E-03	8.98E-02	1.10E-01
ADP-minerals&metals[5]	[kg Sb eq.]	8.31E-07	3.55E-07	4.78E-07	1.66E-06
ADP-fossils[6]	[MJ ncv]	8.31E+01	5.14E-01	3.58E+00	8.72E+01
WDP[3]	m ³ world eq. deprived	1.24E-01	2.80E-03	7.41E-02	2.00E-01

How to Compare EPDs

Comparing EPDs between products and manufacturers is not always straightforward.

When comparing, ensure the functional unit of the material is the same. For example, some EPDs may measure per square meter or kilogram of product, making a direct comparison impossible without conversion.

KORE’s EPDs for rigid board use a functional unit of 1-meter square with a 100mm thickness, while our KORE Fill cavity wall insulation EPDs use 1kg of loose beads as the functional unit of measurement.

You’ll also want to verify that the life cycle stages are the same. Some manufacturers include benefits and loads beyond the system boundary.

In addition, ensure that the geographical scope is the same, as some EPDs may vary between regional and global boundaries.

If in doubt, reach out to the KORE technical team to verify the data and reporting standards. We’re happy to help our customers make informed environmental decisions about the products used within projects whenever possible.

What are the Benefits of an Environmental Product Declaration

Environmental Product Declarations enable you to make data-driven decisions about the sustainability and environmental performance of products. For the manufacturer, EPDs help to drive improvements in both product design and manufacturing. Both lead to a reduction in the environmental impacts a product has through its entire lifecycle. At a high level, EPDs can help to encourage the adoption of circular economy practices.

In addition, using platforms like One Click LCA generate precise EPDs that provide a measurable advantage by eliminating the need for generic inputs, allowing for more specific and reliable assessments of a product's environmental impact. This accuracy is crucial in meeting the Royal Institute of the Architects of Ireland (RIAI) targets on embodied carbon, which emphasize reducing the carbon footprint of building materials.

For builders and developers, EPDs can help achieve green building certifications, including LEED, BREEAM and HPI (Home Performance Index) certification. EPDs often help companies comply with environmental regulations and standards which can help mitigate the risk of non-compliance.

KORE's Path to Sustainability

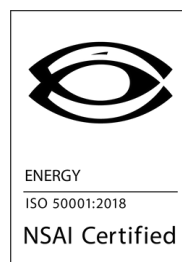
It's our mission to provide innovative products and services that empower and enable the adoption of modern methods of construction, minimise carbon emissions and deliver a more sustainable future for generations. Our long-term vision is to be a driving force for positive change in the construction industry through our people and our products. Publishing up-to-date Environmental Product Declarations is only a small part of a much larger plan.

In a world in which carbon emissions are becoming a meaningful commodity, we have reduced the risk of carbon becoming an additional cost to you. Typically, value engineering is a euphemism for cost reduction. We see value engineering as maximising the value that our customers (and their customers) receive from our products.

Our products have demonstrated a consistent improvement in performance and significant, quantifiable reductions in carbon. This is because we are invested in a programme of continuous improvement, endless monitoring and research-driven innovation. If you have questions, we have the answers. Join us as we continue to make our vision a reality.

We're on a path to a more sustainable future - from EPS recycling, reducing embodied carbon in our product range, to offering Ireland's first low-carbon Expanded Polystyrene, we're driving positive change throughout the industry.

KORE EPS



KORE **INSULATION**

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