Environmental documentation

Focus on Environmental Product Declarations (EPDs)

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Why environmental labelling or declaration?

- **Product optimisation and -development**
  - Environmental impact reduction
  - Economic savings
- **Marketing**
  - Promote your products with environmental documentation
  - Transparency
- **Competitive advantages**
  - Attract customers

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		DGNB	LEED®	BREEAM	Active House	EPD Danmark	Svane-mærket	EU-Blomsten	Indeklima-mærket	Cradle to Cradle	FSC	PEFC	ISO® Miljøledelses-certificering	Frivillig bæredygtigheds-klasse i BR
TYPE	Miljø deklaration	○	○	○	○	●	○	○	○	○	○	○	○	○
	Miljømærke/ -certificering	●	●	●	●	○	●	●	●	●	●	●	●	●
ANVENDES PÅ	Bygning	●	●	●	●	○	●	○	●	○	○	○	○	●
	Bygge produkt	○	○	○	○	●	●	●	●	●	●	●	○	○
	Virksomhed	○	○	○	○	○	●	●	○	○	○	○	●	○
BÆREDYGTIGHEDS-SØJLER	Miljø	●	●	●	●	●	●	●	○	●	●	●	●	●
	Økonomi	●	◖	◖	◖	○	○	○	○	●	●	●	○	●
	Sociale værdier	●	●	●	●	○	●	●	●	●	●	●	○	●

Environmental assessments in the construction industry – a guide to documentation, labelling and certification schemes within environmental and sustainability in the built Environment (publication in danish)
https://www.teknologisk.dk/_/media/75093_Publikation%20milj%F8vurderinger%20i%20byggebranchen%20Juni%202019.pdf

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Labelling/certification or declaration?

Miljømærker eller miljøcertificering

Leverer en vurdering af et produkt/ byggeri, dvs. et "grønt stempel", som fastslår, at dette produkt opfylder de pågældende vurderingskriterier eller -krav.

Miljødeklarationer

Giver en deklaration (typisk en kvantif- icering af dere nogle bestem noget om, hvo tigt produkt e

Miljøledelsescertificering iht. ISO® 14001:2015

Frivillig bæredygtighedsklasse i BR

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Environment or Sustainability

- Environment' is just one aspect of sustainability

- Environmental aspects:
  - Resource consumption (energy, water, etc)
  - Waste
  - Raw materials
  - Chemicals/hazardous substances
  - Life Cycle Assessment or just production?
  - Emissions to the environment (e.g. water, air, soil)
  - Possibilities for repair, reuse, recycling etc.

- Environmental documentation schemes may have different focus

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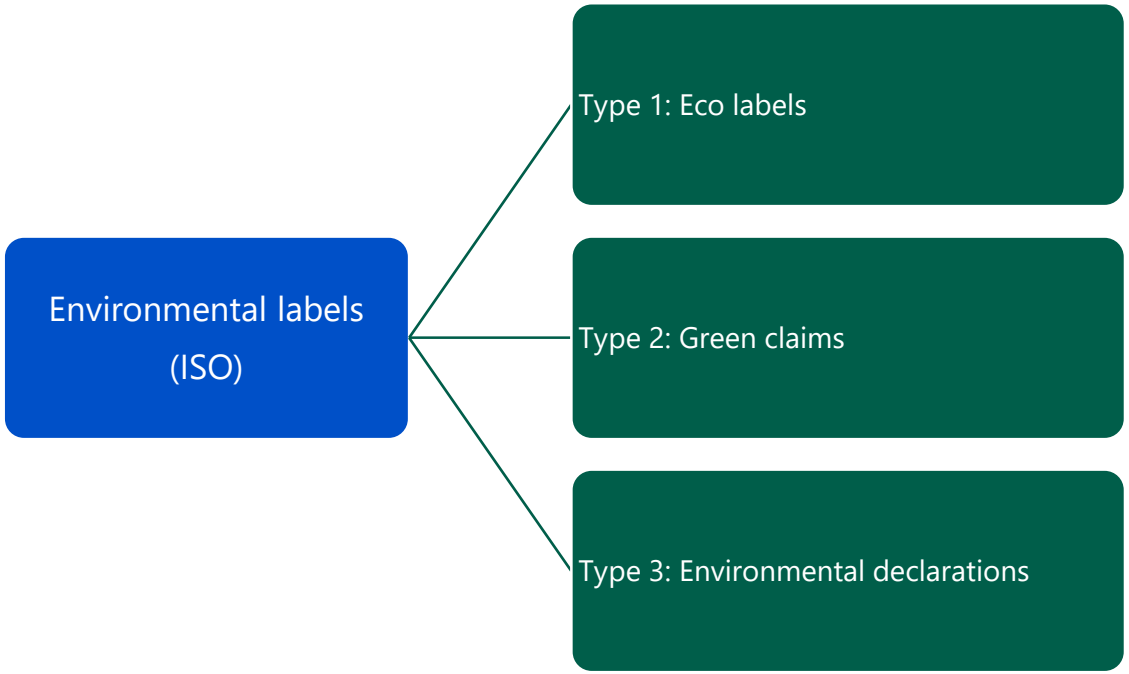
Product labels



ISO 14020:2000(en) *Environmental labels and declarations — General principles*

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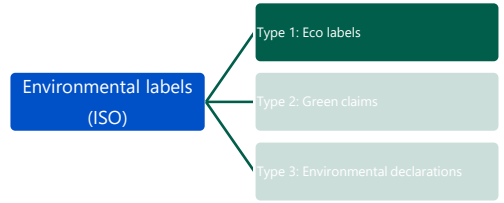
Product labelling (ecolabels, type 1), construction



Name	Country of use	Link
Blue Angel	International	https://www.blauer-engel.de/en/our-label-environment
BRE Certified Environmental profile	International	http://www.bre.co.uk/page.jsp?id=53
British Allergy Foundation Seal of Approval	UK	http://www.allergyuk.org/
Carbon reduction label	International	http://www.carbon-label.com/
Cradle to Cradle Certification	International	http://www.c2ccertified.org/
EU Ecolabel	International	http://ec.europa.eu/environment/ecolabel/index_en.htm
Eurofins Indoor Air Comfort	Europe	http://www.eurofins.com/product-testing-services/information/ecolabels,-quality-labels/indoor-air-comfort-eurofins-certified-products.aspx
GreenGuard	International	http://www.greenguard.org/
Nordic Swan Ecolabel	Scandinavia	http://www.nordic-ecolabel.org/

List based on: http://www.greenspec.co.uk/ecolabels-used-in-europe/

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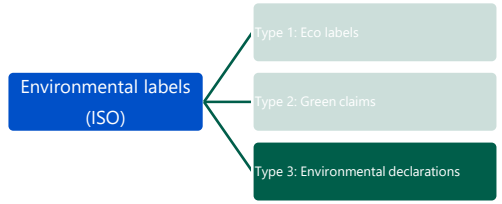
Product labelling (ecolabels, type 3), construction



Environmental Product Declaration (EPD)

Based on Life Cycle Assessment (LCA)

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Market requirements

Standardisation, CE-marking and EU-legislation

National requirements

Denmark	None at the moment
Finland	?
Norway	Statsbygg
Sweden	BVD
UK	?

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What is an EPD?

- An Environmental Product Declaration, EPD, is a *declaration* of environmental impact and emissions

- It can be used to calculate the environmental impact of a building or a building materials, considering energy- and ressource consumption along with impact on the environment
- Different building- og product designs kan be compared

- Quantitative assessments

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An EPD is a standardised and verified product declaration,

with which a manufacturer can prove/document a list of properties of their product

Which qualities are declared?

- CO_2-emissions, through Global Warming
- Other emissions (eg. CH_4, NO_x, SO_2, PM)
- Energy consumption
- Water consumption
- Waste generation and handling
- …

Considering the life cycle of the product or specific life cycle phases, e.g. production only

EN 15804: 2012+A1:2013 *Sustainability of construction works -Environmental product declarations – Core rules for the product category of construction products*

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Life Cycle Assessment (LCA) on product level

The Life Cycle of a product covers processes taking place during…

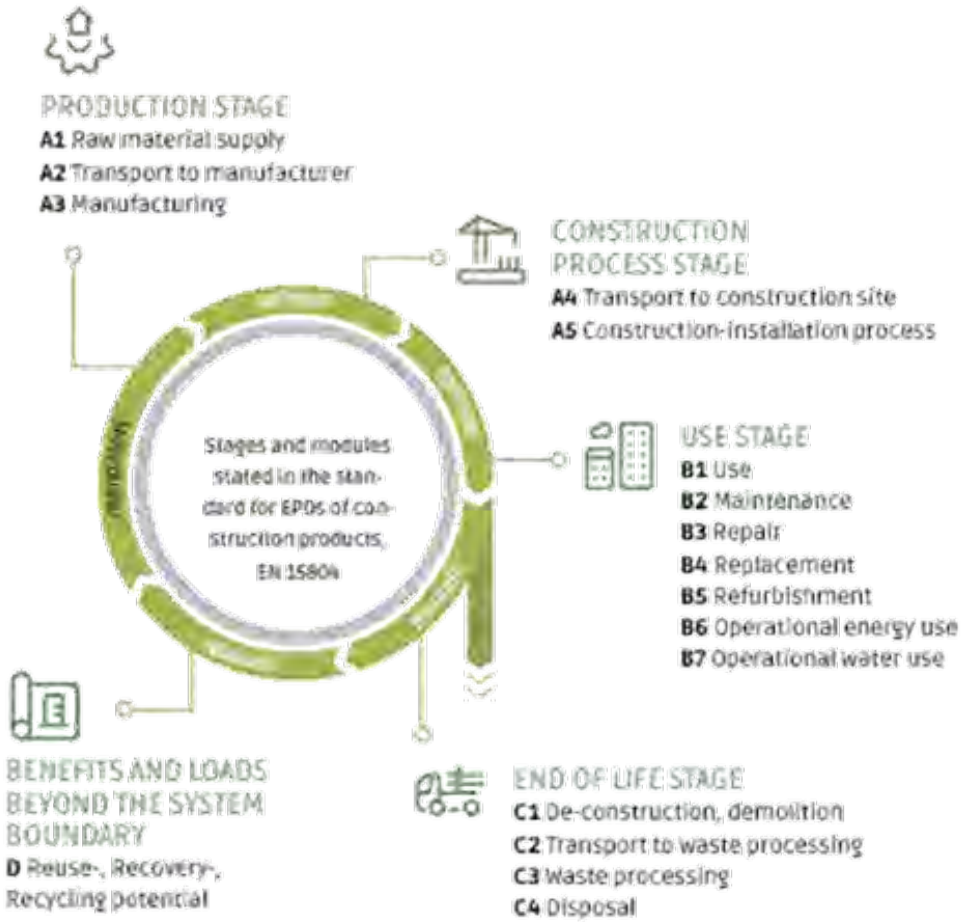
- Extraction of raw materials
- Transport and production
- Use
- Disposal/recycling, waste processing

Input

- Materials
- REACH substances
- Product description
- (indoor climate)
- (water and soil)

Output

- CO_2-emissions, through Global Warming
- Other emissions (eg. CH_4, NO_x, SO_2, PM)
- Energy consumption
- Water consumption
- Waste generation and handling
- …



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EPD types

- Industry EPD – covering a group of products, based on averaged values from a number of companies
- Product EPD – company specific
- Project EPD – only through EPD tools (under development)

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Digitalisation – EPD tools

EPD-Norge er i full gang med digitalisering av EPDer

I vinterferie uken vil 4 studenter arbeide for EPD-Norge og registrere/digitalisere allerede publiserte EPDer. I første fase er det EPDer som er utviklet uten bruk av EPD verktøy som blir digitalisert. Oliver Kusche, ekspert på digitale EPDer, fasiliteterer og har opplæring i bruk av det digitale verktøy. EPD-Norge vil oppdatere og informere fortløpende.

https://www.epd-norge.no/nyhetsarkiv/epd-norge-er-i-full-gang-med-digitalisering-av-epder-article2032-299.html

IBU EPDs: Now Digital, Thanks to IBU.data

Verified Life Cycle Assessment Data for Construction Products Is Now Available in Digital Form, Simplifying Access for Users

Increasingly, whether in the planning process or in building operation, data needs to be accessed by all those involved in a project. This means that it must be simultaneously available to all participants – ideally, in a format that can be used across all areas of specialisation. Only when this has been achieved, does the potential that digitalisation offers become truly effective. In the construction sector in particular, a great number of different stakeholders are involved, all of whom require large amounts of information from reliable sources in order to be able to efficiently plan, calculate, and evaluate. In the area of sustainable building, EPDs provide an important source of data. Therefore, Europe's largest EPD programme holder, the Institut Bauen und Umwelt e.V. (IBU), has, effective immediately, made EPDs available in digital format. The advantage: EPDs that have been published by IBU are accessible to a vast international group of users for active application in the area of building life cycle assessments.

In the construction sector, EPDs are an industry standard for the uniform documentation and publication of life cycle assessment data. At IBU, the creation, verification, publication, and management processes for EPDs have, for many years now, been carried out with the EPD Online Tool. The data, verified by independent third parties, has then always been available 24/7 online to the public. "As a result of the growing number of users and the complexity of the data involved, it no longer sufficed to provide the EPDs solely as PDF documents," explains Dr Burkhart Lehmann, Managing Director of the IBU. "For those who use EPDs to assess building life cycles, we wanted to make their job as easy as possible by providing the data in a compatible format." With the IBU.data platform, IBU has now gone digital – that is, machine-readable – with their EPDs. What this means is that the EPD data sets can now be applied directly, whether calculating life cycles of building components or those of entire buildings, to determine environmental impact over the course of the entire life cycle.

EPD Data Streamlines the Integral Planning and Life Cycle Assessment of Buildings

IBU.data may be accessed from the IBU website and, using the search and filter functions provided, searches can be narrowed to include only EPDs for a particular product or from a particular manufacturer. There is no charge for accessing this data for informational purposes or for use in calculating life cycle assessments.

At IBU.data, the life-cycle based data from the EPDs created by construction product manufacturers is provided in XML files, which are based on the expanded ILCD format (International Reference Life Cycle Data Label). By taking this approach, we make life easier for auditors and

IBU.data

https://ibu-epd.com/en/ibu-epds-ibu-data/

THE INTERNATIONAL EPD® SYSTEM LAUNCHES A NEW DATABASE WITH DIGITAL EPD

Apr

UKCoMDat-United Kingdom Construction Materials EPD/LCA Database

Developed by LCA consultants Metamis Sustainability Consulting, UKCoMDat lists construction products that are available in the UK market. The datasets follow international standards and norms and are formatted to be used in building environmental performance assessment. UKCoMDat was financially supported and distributed by the UK EcoLabel Centre, an initiative to promote ecolabelling in the United Kingdom.

UKCoMDat fulfils data quality requirements of EN 15804 for product-level environmental data and is applicable to building-level environmental assessments using EN 15978:2011 standard. Datasets are presented in ILCD EPD/LCA format and in compliant to okData format. International Database for international open data network for sustainable construction. Datasets for each product is available on 24 indicators at 17 life cycle stages and it is the most comprehensive database available for the UK market.

ENTER UKCOMDAT

EUCoMDat-European Construction Materials EPD/LCA Database

Developed by The EPD Registry™, EUCoMDat contains construction products that are manufactured and m European market. The database follows international standards and norms and is formatted to be used for building performance assessment or any other applications. EUCoMDat is financially supported and distributed by The EPD I

ENTER EUCOMDAT

This Wedne readable EP be used for the environn

All digitalize therefore enables communication of environmental impacts of products in a quantitative, credib comparable and understandable way based on an established communication format.

https://www.theepdreg

The transformation of EPD-information into the machine-readable format will broaden the opportunities for the application of EPD information in areas, such as public procurement, buildi assessment tools and other environmental calculation tools.

"The rapid global development of systems for EPD is mainly a response to the increased market need for LCA-based product-related environmental information", says Sven-Olof Ryding, senior advisor EPD International AB. "Interpreting and bench-

https://www.environdec.com/News-archive/the-international-epd-system-launches-a-new-database-with-digital-epd-data/

Betonbranchen går forrest i dokumentation af miljøaftryk

dansk byggeri dansk beton

11.9.2019 06:00:00 CEST | Dansk Byggeri

Del

UKCoMDat

UK EcoLabel Centre

åneder bliver det muligt for betonvirksomhe
terialers miljøaftryk. Det gælder uanset, om
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er kan anvende til vurdering af bæredygtig

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LINA

Your route to Environmental Product Declaration (EPD).

BRE LINA is an online life cycle assessment (LCA) tool that gives product manufacturers access to LCA data and a route to EPD. Manufacturers must be increasingly transparent about the environmental impacts of their products. EPDs based on data from LCAs provide a way of doing this, but obtaining LCA data can be difficult and costly.

BRE LINA enables companies or trade associations to produce LCA results which can then be uploaded into a BRE Hub where third-party verified EPDs can be produced.

The benefits are not limited to EPD – for example the outputs of LINA can complement an existing Environmental Management System. And in future, environmental impact data will have greater importance in sustainability rating systems such as BREEAM and CEEQUAL, and there will be further opportunities to feed EPD data into Building Information Modelling.

For more information please contact Shamir Ghumra at enquiries@bregroup.com or call 07738 134454

https://www.bregroup.com/products/tools/

Byggeplads.dk : Magasinet Gulv : Office+D

Nyheder Produktnyt Byggerier Temaer Partnere M

Grønne byggedata bliver digitale

21. oktober 2019 - 07:04 i Digitalisering

epddanmark

Find EPD'er på byggeprodukter solgt i Danmark

BUILDING GREEN

Den digitale bølge har også ramt EPD Danmark, som vil gøre det nemmere og mere tilgængeligt at finde informationer om danske miljøvaredeklarationer

EPD Danmark lancerer nu en ny hjemmeside, som på sigt vil give brugere adgang til data, der kan anvendes både på tværs af byggebranchens aktører og internationalt.

Sarah Cecilie Andersen fra EPD Danmark ser frem til at gøre data digitale og dermed gøre det lettere at anvende de muligheder, EPD'erne giver.

- Det nye site vil være i konstant udvikling til gavn for branchen. Vores digitalisering sker i trin, og første skridt på vejen er en digitalisering af EPD-databasen, der forenkler søgning blandt EPD'er på den nye hjemmeside. Når en optimal søgefunktion og database er på plads, er næste skridt at arbejde på digitalisering af selve data – både til nationalt brug i LCAbyg, men på sigt også således at data kan bruges på tværs i et internationalt dataformat, forklarer Sarah Cecilie Andersen.

Konkret ønske fra branchen

Den nye hjemmeside er et led i EPD Danmarks kommunikationsstrategi, hvor ønsket

https://www.byggeplads.dk/nyhed/2019/10/digitalisering/groenne-byggedata-bliver-digitale

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How to ensure quality of the EPD ?

- ✓ Developed according to EN15804
- ✓ Developed according to harmonised european standards
- ✓ Published by recognised programme operators
- ✓ Verified by approved third party
- ✓ Available through a recognised database

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EPD highlights

- Outcome for manufacturer:
  - EPDs (should be published through recognised ECO Platform programme Operator)
  - LCA report (not to be published, but reports the Life Cycle Assessment of the product, including hot-spot analysis of environmental impacts)

- Made in english or native language
  - English version can be published through
  - Strict rules on third party verification

- Valid for 5 years
  - Revision needed

- Digitalisation
  - EPD tools
  - Digital data format, output

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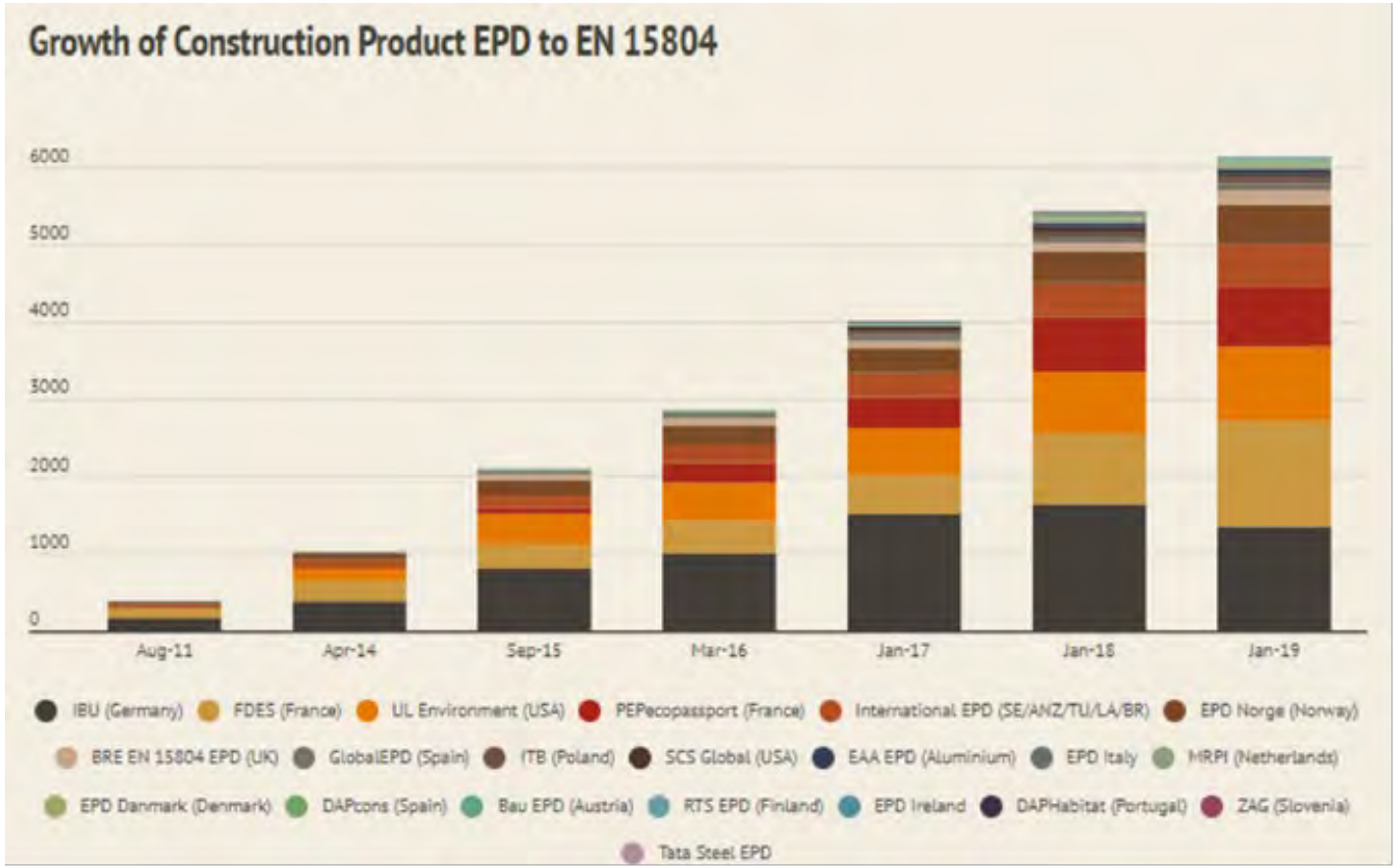
Increased demands



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(Jane Anderson, ConstructionLCA Ltd.)

Thank you for your attention

Sarah Cecilie Andersen & Morten Klamer

sara@teknologisk.dk & mkl@dti.dk

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