

New Product Category Rules for steel and aluminium products Why do we need them?

Rutger Gyllenram

rutger.gyllenram@kobolde.com

Kobolde & Partners AB / Swedish Institute of Steel Construction, SBI, SWEDEN



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12th European congress on sandwich panel and profile technology, *Thessaloniki, Greece, October 25th and 26th 2018*

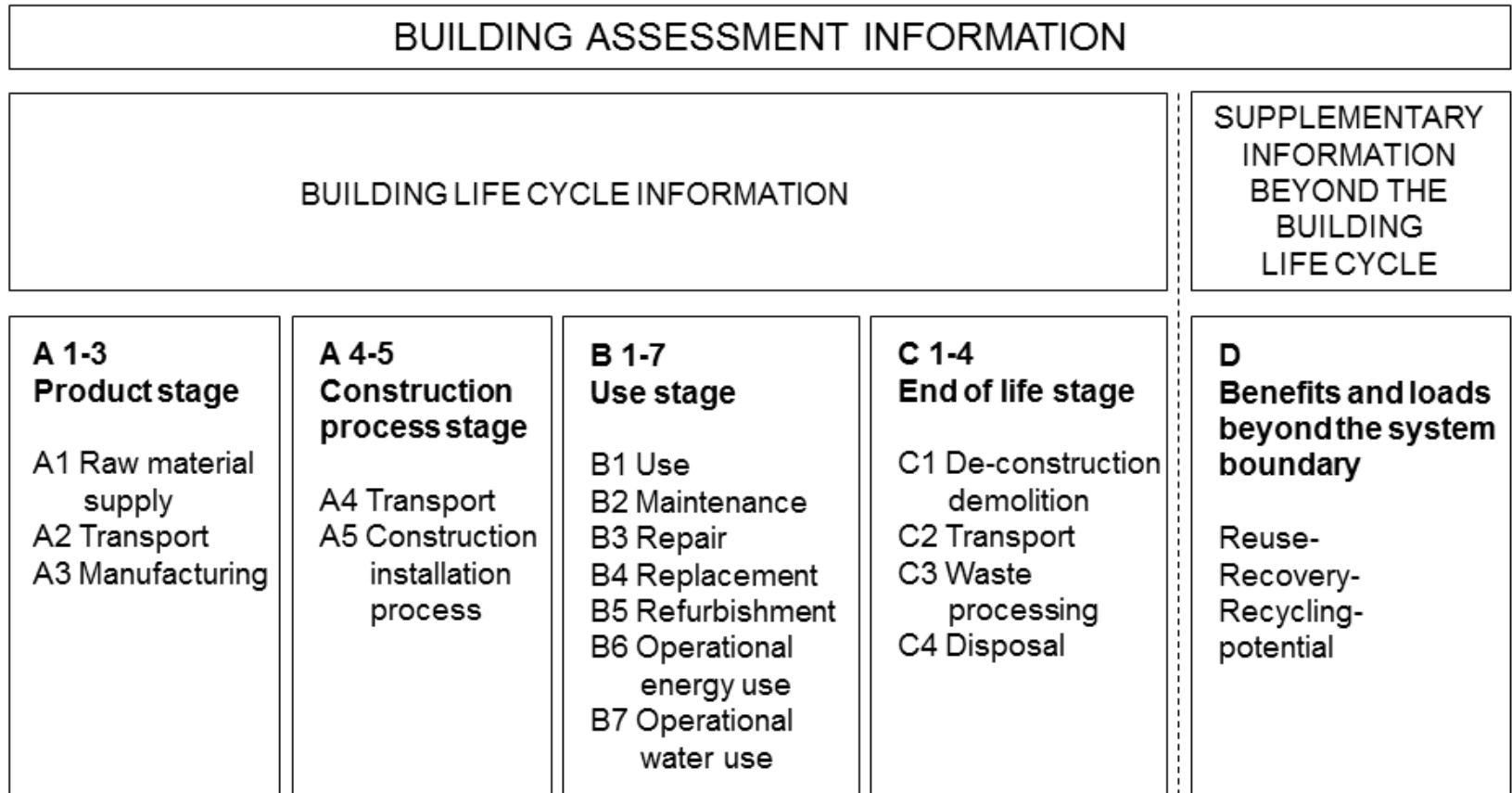


The key to sustainable construction is to build beautiful houses that people want to live and work in, houses that can change with changing requirements, that do stay healthy, economical and worthwhile to own and also make you happy when you look at them.

RG

Gardermoen, Oslo
Foto: Wikimedia Hirotomo T

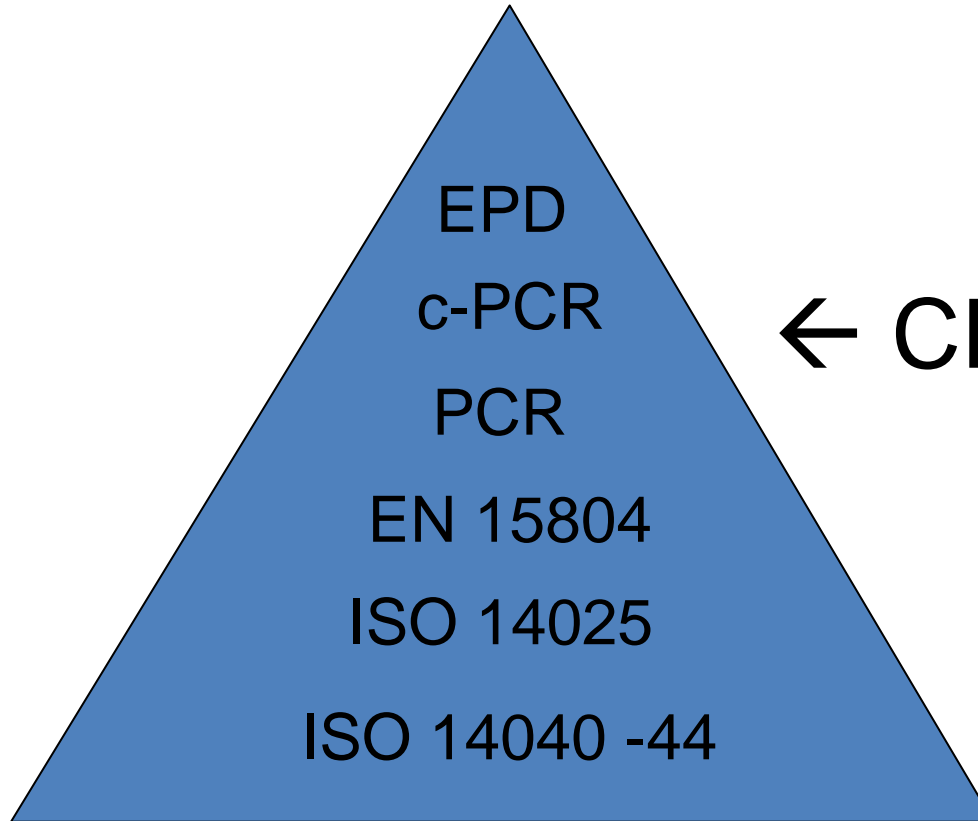
LCA The best method ?



Relevant LCA-Standards

Standard	Name
ISO 14044:2006	Environmental management -- Life cycle assessment -- Requirements and guidelines
ISO 14025:2006	Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures
ISO 14067:2018	Greenhouse gases -- Carbon footprint of products -- Requirements and guidelines for quantification
ISO 20915:2018	Life cycle inventory calculation methodology for steel products
ISO 21930:2017	Sustainability in buildings and civil engineering works -- Core rules for environmental product declarations of construction products and services
EN 15804:2012	Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

BUILDING LIFE CYCLE ASESMENT



PEF
← CPR/BWR7
GPP

BUILDING ASSESSMENT INFORMATION														
BUILDING LIFE CYCLE INFORMATION											SUPPLEMENTARY INFORMATION BEYOND BUILDING LIFE CYCLE			
A1 - A3			A4 - A5		B1 - B7					C1 - C4				D
PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE					END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3	C4	D
Raw material supply	Transport	Manufacturing	Transport	Construction - Installation process	Use	Maintenance	Repair	Replacement ^a	Refurbishment	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse, recovery, recycling, potential
			scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	scenario	
Cradle to gate + modules C and D										Mand. ^b	Mand. ^b	Mand. ^b	Mand. ^b	Mandatory ^b
Cradle to gate + modules C and D with options					Opt.	Opt.	Opt.	Opt.	Opt.	Mand.	Mand.	Mand.	Mand.	Mandatory
Cradle to grave					Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mand.	Mandatory

Mandatory environmental impacts in the amended EN 15804:

- Depletion of abiotic resources (mineral elements)
- Depletion of abiotic resources (fossil fuels)
- Acidification of soil and water
- Ozone depletion
- Global Warming Potential, GWP (fossil Carbon, biogenic Carbon, land use change)
- Eutrophication (over-fertilization of terrestrial, freshwater and marine)
- Photochemical ozone creation
- Water scarcity

Data on resource use:

- Use of renewable and non-renewable primary energy used for raw material or energy
- Use of secondary material
- Use of renewable and non-renewable secondary fuels
- Net use of fresh water

Additional, not mandatory, impact categories in the amended EN 15804:

- Human toxicity (cancer and non-cancer effects)
- Eco toxicity (terrestrial, freshwater and marine)
- Land use related impacts / Soil quality
- Particulate matter formation
- Ionising radiation (human health and ecosystem health)



PEF idea

Source: EEB

 European Association for
Panels and Profiles

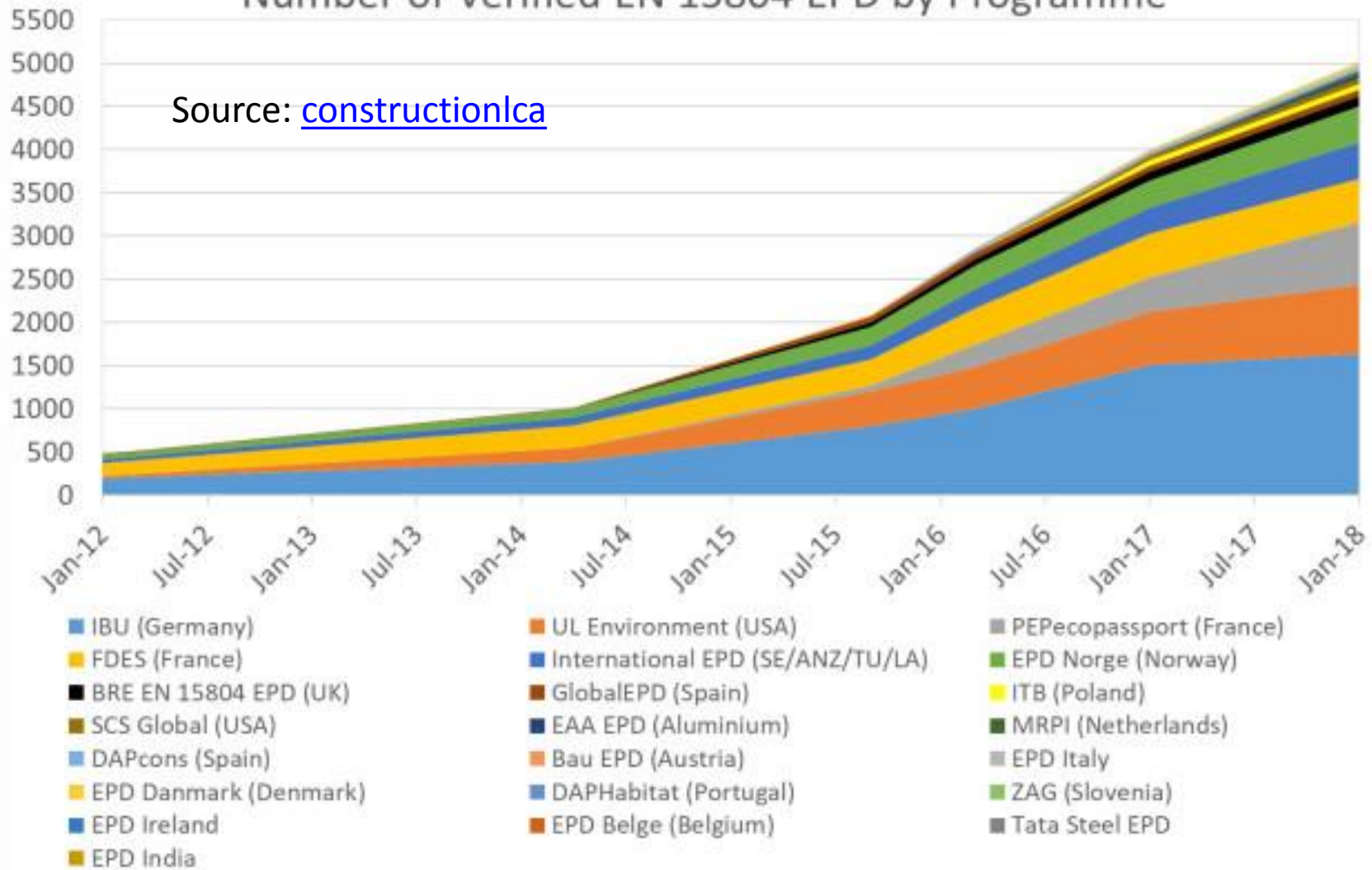
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Number of Verified EN 15804 EPD by Programme

Source: [constructionlca](http://constructionlca.com)



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Existing c-PCR standards

CEN/TC	NSB of TC	WG	NSB of WG	WI	EN reference/ track	Title	ENQ start	ENQ end	prEN (N-Doc)
103	UNI	WG 3	DIN	102007	EN 16578	Sustainability assessment - Ceramics sanitary appliances	2014-10-16	2014-12-16	763
					prEN 16810	Sustainability of construction work - Environmental product declarations - Product category rules for resilient, textile and laminate floor coverings	2014-11-27	2015-04-27	762
					prEN 16783	Thermal insulation products - Product category rules (PCR) for factory made and in-situ formed products for preparing environmental product	2014-09-04	2015-02-04	691
					prEN 16757	Sustainability of construction works — Environmental product declarations — Product Category Rules for concrete and concrete elements	2016-05-12	2016-08-12	841
					prEN 16904	Plastics piping systems - Sustainability of construction works - Product Category Rules (PCR) for plastics piping systems inside buildings	2016-06-30	2016-09-22	930
					prEN 16903	Plastics piping systems - Sustainability of construction works - Product Category Rules (PCR) for buried plastics piping systems	2016-06-30	2016-09-22	929
51	NBN	WG 6	DIN	51138	prEN 16908	Cement and building lime - Environmental product declarations - Product category rules complementary to EN 15804	2015-08-13	2015-11-13	834

Sanitary ceramics

Floor coverings

Insulation

Concrete

Plastic piping indoors

Plastic piping outdoors

Cement

New c-PCR project in TC135 WG17

Title of the proposed deliverable

Execution of steel structures and aluminium structures - Environmental Product Declarations - Product category rules complementary to EN 15804 for Steel and Aluminium structural products, and other metal products, for use in construction works.

Scope of the proposed deliverable

This European standard provides product category rules (c-PCR), that are complementary to EN 15804, for Type III environmental declarations for steel components and aluminium components fabricated from steel or aluminium constituent products to be used for structural purposes in buildings and civil engineering works where their characteristic affects the mechanical resistance and stability of these construction works or parts thereof, where there does not exist a more specific specification for the product.

This standard also provides guidance for other metal construction products where a more specific PCR as EN standard does not exist.

Purpose and justification of the proposal

EN 15804 constitutes the core PCR (Product Category Rules) for making EPDs (Environmental Product Declarations) for building products and integrated technical systems. Since different material types and products have different properties and are made in different ways **it is helpful to have standards specifying how to interpret EN 15804 for these products.**

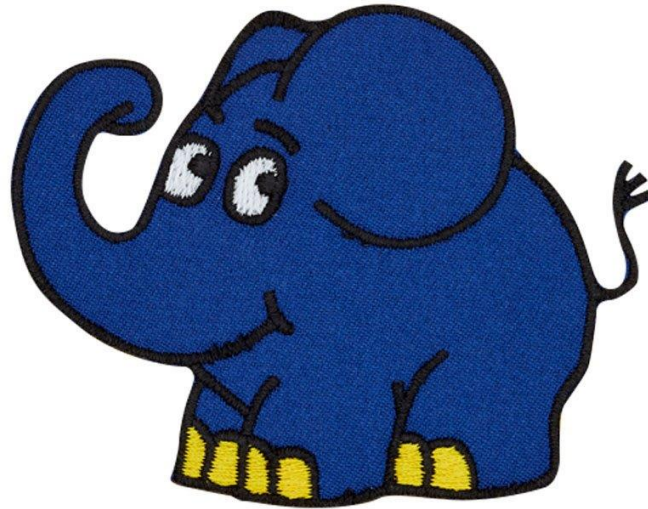
This is the case for products made from metals such as Steel, Cast Iron and Aluminium. **Such work has been done for materials like timber and concrete but not for metals apart from some minor examples.** Further justification and explanation is given in annex B Background and Q&A.

Important issues for this PCR are methods for **process subdivision as well as reuse and recycling assessment and other issues.**

Issue	Description of Issue (i.e. not fully specified in EN15804)	What does EN 15804 say?	Existing PCRs and Programme Operators	What a metal PCR could specify?
A1/A3	A1 Raw material acquisition – Is this ore beneficiation or metal production? What is in A3 – metal rolling/forming. Not such an issue if aggregating A1-A3 but could affect the A2 transport scenario (e.g. ore or coil transport)	Nothing?	Nothing?	Splitting processes between A1-A3 in terms of what should be reported in A1 and what in A3
Allocation in A1-A3	Allocation of co-products and waste scrap	Polluters pay principle. Different options with emphasis on economic allocation.	As 15804?	What allocation methods should be used in specific metal processes and how to deal with scrap generated within A1-A3 (loop back internally or allocate impacts to scrap exiting the system)

Issue	Description of Issue (i.e. not fully specified in EN15804)	What does EN 15804 say?	Existing PCRs and Programme Operators	What a metal PCR could specify?
A2, A4, C2	Transport scenarios - Intermediate products - Construction products	Nothing?	Nothing?	Typical transport distances and load utilisation rates are different between raw materials and finished products
A5	Construction impacts and where to report off site fabrication/modular construction impacts	Nothing?	Nothing?	Scrap generated is reported in Module D. Where to report off site fabrication/ modular construction impacts
Module B	Scenarios for maintenance, repair and refurbishment	Nothing?	Nothing?	Default scenarios for example repainting
C1-C3	Processes used to dismantle and process metal construction products at end of life	Nothing?	Nothing?	Default processes and reuse/recycling rates

Issue	Description of Issue (i.e. not fully specified in EN15804)	What does EN 15804 say?	Existing PCRs and Programme Operators	What a metal PCR could specify?
Module D	How to calculate net flows	Formulas in annex	Nothing?	Illustrative examples. Default quality factors for recycling
Module A3, D	Coatings/ fire protection	Nothing?	Nothing?	How to take into account in EoL scenario
Additional impact categories	how to deal with reporting optional indicators such as ecotoxicity	Will come as additional info in amended 15804	Nothing?	Justification on why additional indicators are not robust enough to be used for product comparison and therefore not reported.
Other issues....?	Dust. Noise. This is an environmental factor as well as social that we might add as additional information. Important in module A5 and C	Particulate matter to be added as an optional indicator Nothing in EN 15804 for noise but will come in the civil engineering std	Nothing?	How to take noise and dust emissions into account in construction and deconstruction.



Elefant from: www.stoffekontor.de

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Welcome to follow the work in TC135/WG17



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