

CONSTRUCTION PRODUCTS EUROPE LET'S BUILD AN EFFICIENT EUROPE

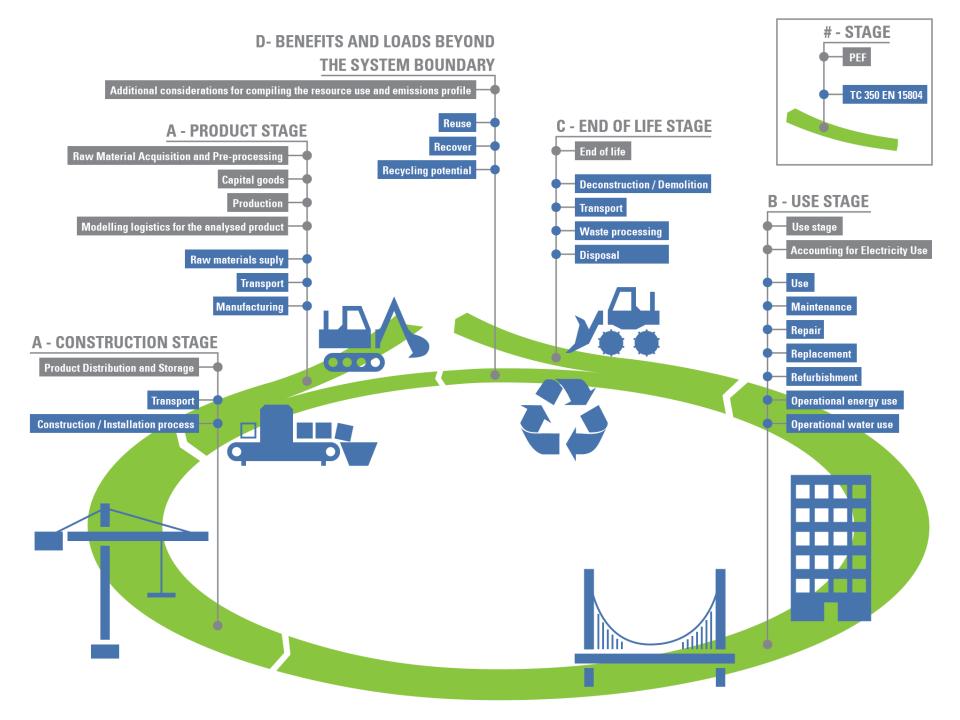
Sustainability Assessment Workshop

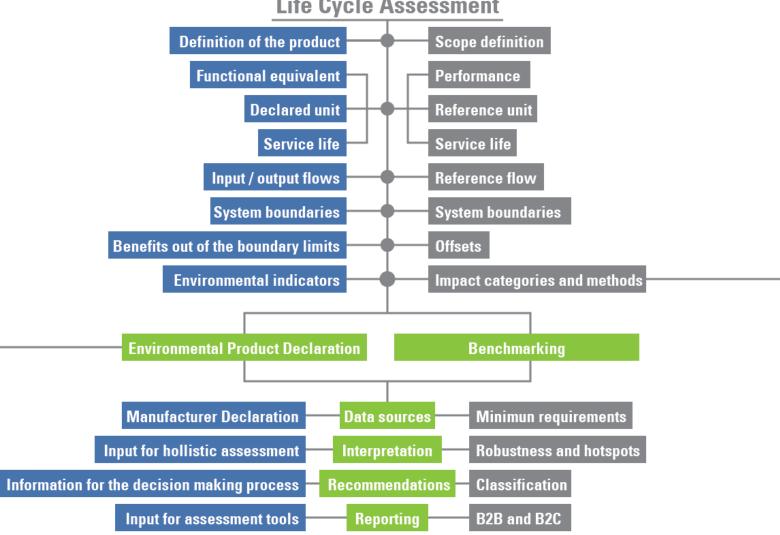
4th March 2014



Oscar Nieto

Environmental Product Declaration and PEF





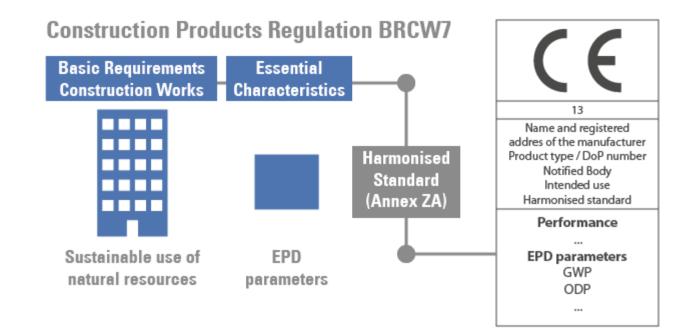
Life Cycle Assessment

Indicators and impact categories

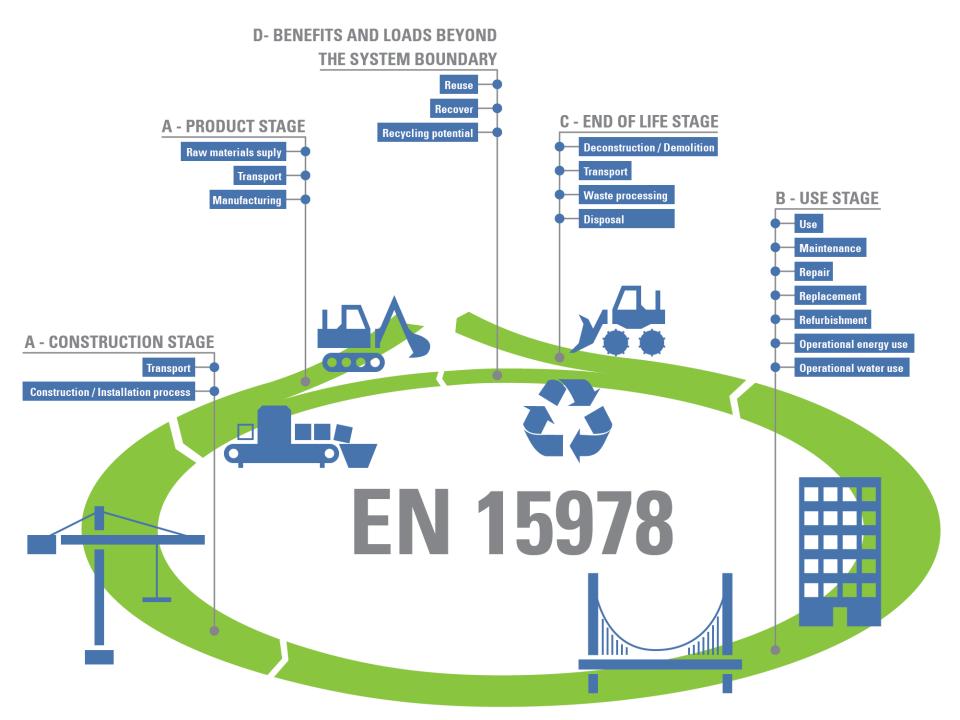
Global warming potential, GWP	kg CO2 equiv	kg CO2 equiv	Global warming potential, GWP (Bern model - 100 years)
Depletion potential of the stratospheric ozone layer, ODP;	kg CFC 11 equiv	kg CFC 11 equiv	Ozone depletion, ODP (infinite time horizon - EDIP model)
Acidification potential of land and water; AP;	kg SO2- equiv	mol H+ equiv	Acidification (accumulated exceedance model)
Eutrophication potential, EP;	kg (PO4)3- equiv	mol N equiv	Eutrophication - terrestrial (accumulated exceedance model)
	•	kg P equiv / kg N equiv	Eutrophication - aquatic fresh water / marine (EUTREND model)
Formation potential of tropospheric ozone photochemical oxidants, POCP;	kg Ethene equiv	kg NMVOC equiv	Photochemical Ozone Formation (LOTOS-EUROS model)
Abiotic Resource Depletion Potential for elements; ADP_elements	kg Sb equiv	kg Sb equiv	Resource depletion - mineral (CML2002 model)
Abiotic Resource Depletion Potential of fossil fuels ADP_fossil fuels	MJ	kg Sb equiv	Resource depletion - fossil (CML2002 model)
Use of net fresh water	m3	m3 water / local scarcity	Resource depletion water (Swiss ecoscarcity model)
Land transformation soil organic matter (SOM model)	Under discussion	kg deficit	Land transformation soil organic matter (SOM model)
Ecotoxicity for aquatic fresh water (USEtox model)	Under discussion	CTUe	Ecotoxicity for aquatic fresh water (USEtox model)
Human toxicity - cancer effects (USEtox model)	Under discussion	CTUh	Human toxicity - cancer effects (USEtox model)
Human toxicity - non-cancer effects (USEtox model)	Under discussion	CTUh	Human toxicity - non-cancer effects (USEtox model)
Particulate matter/ Respiratory Inorganics (RiskPoll model)	Under discussion	kg PM2.5 equiv	Particulate matter/ Respiratory Inorganics (RiskPoll model)
Ionising radiation (Human Health effect model)	Under discussion	kg U235 equiv to air	Ionising radiation (Human Health effect model)
Use of renewable primary energy excluding energy resources used as raw material	MJ, net calorific value 🕇		
Use of renewable primary energy resources used as raw material	MJ, net calorific value 🕇		
Use of non-renewable primary energy excluding energy resources used as raw material	MJ, net calorific value		
Use of non-renewable primary energy resources used as raw material	MJ, net calorific value		
Use of secondary material	kg		
Use of renewable secondary fuels	MJ		
Use of non-renewable secondary fuels	MJ		
Hazardous waste disposed	kg		
Non-hazardous waste disposed	kg		
Radioactive waste disposed	kg		
Components for re-use	kg		Indicators PEF TC 350
Materials for recycling	kg		
Materials for energy recovery (not being waste incineration)	kg		
Exported energy	MJ per energy carrier		

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PRODUCT STAGE		CONSTRUC- TION PRO- CESS STAGE			USE STAGE						END OF LIFE STAGE					BENEFITS AN LOADS BE- YOND THE SYSTEM BOUNDARIES	
Raw material supply	Transport	Manufacturing	Transport	Construction- installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal		Reuse- Recovery- Recycling- potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	Τ	D
Х	х	х	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	x		MND
							FU 1	m2 no	rcelar	nic sla	h						
								ne po	Toorai		<u> </u>	N	lanufact	urina			EoL
			Parame	eter				Unit				A1 A2			A3		C4
Clobel	ormain	not-r*		0.01							-			_			0.102
Global wa									CO ₂ Eq.]		-			0.223		6.05	
·	·			pheric oz				[kg Cl	-C11 Eq	.]	2.72	2E-07	2.36E	-08	6.48E-0)7	2.70E-08
ormatio	n pote	nual of t	oposphe	eric ozone	= pnotocl	nemical		[kg et	hene Eq.	.]	2.78	2.78E-03 3.45E-04		-04	3.62E-0)3	2.31E-04
Acidificat	ion pot	ential of	f land and	d water				[kg S	60 ₂ Eq.]		1.85	5E-02	E-02 3.72E-03		7.03E-03		5.80E-04
Eutrophication potential						[kg P	O ₄ ^{3–} Eq.]		5.6	61E-03 4.90E-04		-04	2.21E-0)3	1.49E-04		
Abiotic depletion potential for non fossil resources						[kg Sb Eq.]				0.0321 0.00153		150	0.0515		0.00123		
Abiotic de	epletio	n potent	ial for no	n fossil re	esources			[kg	Sb Eq.]		0.0	321	0.001	153			0.00120
	-	-		n fossil re ssil resou		•			Sb Eq.]		-	3.0	3.5		105	-	2.84
	-	-				•	FU 1r	[M	J Eq.]	nic sla	7						
	-	-					FU 1ı	[M	J Eq.]	nic sla	7	3.0	3.5	2		-	
	-	-	ial for fos	ssil resou			FU 1r	ري m2 po	J Eq.]	nic sla	7 b	3.0 N	3.5 Ianufact	2 uring		-	2.84
Abiotic de	epletio	n potent	ial for fos	eter	rces			رب m2 po	U Eq.]	nic sla	7 b	3.0 N A1	3.5 Ianufact	2 uring !	105 A3	-	2.84 EoL C4
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Basic Requirement of Construction Works 7



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Scott Gerrard Consense of License Assessor Userser Assessor Nottiggfam University Hospitals NHS Trust Acataloc Acataloc Medicing Simons JV Cent Term Man Cetritor Couch Perry & Wilkes Delta-S Mechanical & Exercise Ecologiat BGPC Cossulting					
Crist & Structural Engineer Centricite Reference: SPL-HEASOID-1	Index ensaits the spready of effect Guidan List and its assored webset to the spread of the spread of the second of the last of dual list and the second webset to the spread of the spread of the second of the spread of the	Pri	vate ass	essment sc	hemes