



<https://sol.environnement.wallonie.be/home/accueil-dechets/activites-de-construction/event-2023-dechets-ressources-construction/pagecontent.html>

# Popularisation for a non-scientific audience of the interest of EPD for the choice of materials in the building sector

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## La déclaration environnementale de produit : un outil de choix pour la sélection des matériaux ?

*The environmental product declaration: a tool of  
choice for the selection of materials?*

Sylvie GROSLAMBERT

Dr Ir – Ingénieure de recherche senior



 **Wallonie**  
service public  
SPW

# Survey

The environmental product declaration: a tool of choice for the selection of materials?



~1/3



~1/2



# Plan

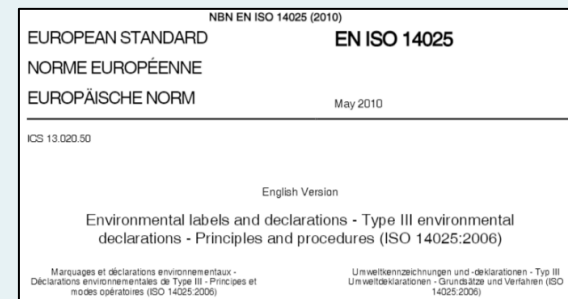
01. ENVIRONMENTAL COMMUNICATION
02. THE EPD, THE B-EPD, TOTEM  
WHAT IS LIFE CYCLE ANALYSIS (LCA)?  
WHAT INFORMATION(S) CAN BE FOUND IN A B-EPD?
03. WHAT ABOUT CIRCULARITY?
04. CONCLUSION



# 01.

## Three types of labels

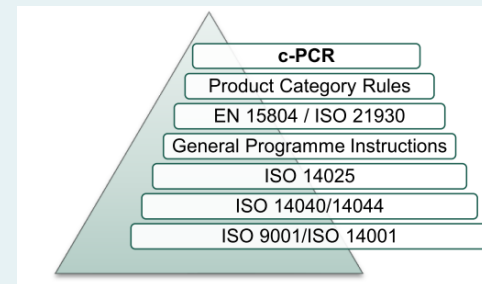
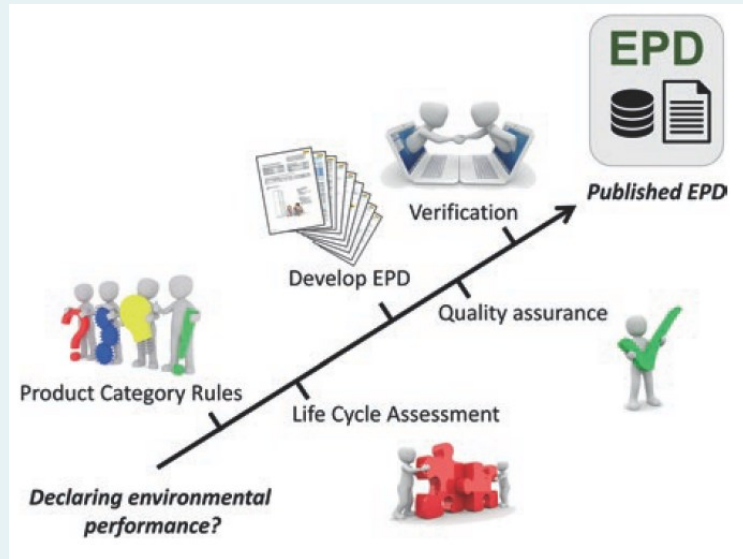
| ISO 14024 – Type 1                                 | ISO 14021 – Type 2                                 | ISO 14025 – Type 3                      |
|----------------------------------------------------|----------------------------------------------------|-----------------------------------------|
| Ecolabel                                           | Self declaration                                   | Environmental declaration<br>Ecoprofile |
| Criteria fixed by a competent agency               | Fast, partial (mono criteria)                      | Complex and complete                    |
| Multi steps<br>Multi criteria<br>LCA not mandatory | One or two criteria<br>One step (end of life, ...) | LCA = mandatory                         |



## 02.

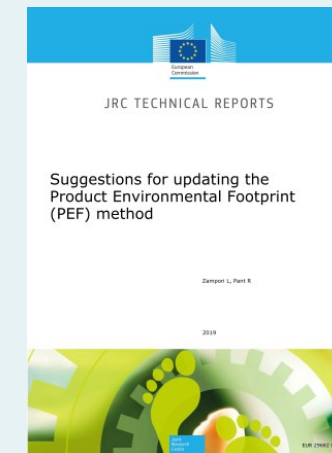
# EPD – Type III (Environmental Product Declaration)

- Environmental declaration type III
  - Ensure comparability
  - Same framework, same methodology



| Belgian Standard                                                                                                                         |     |
|------------------------------------------------------------------------------------------------------------------------------------------|-----|
| EN 15804:2012+A2:2019                                                                                                                    | NBN |
| NBN EN 15804:2012+A2:2019                                                                                                                |     |
| Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products |     |

**EPD®**  
THE INTERNATIONAL EPD® SYSTEM



Fet, A. M. (2023). *Business Transitions: A Path to Sustainability: The CapSEM Model* (p. 261). Springer Nature.

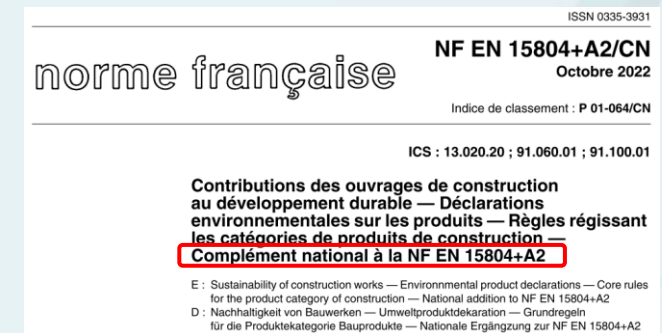
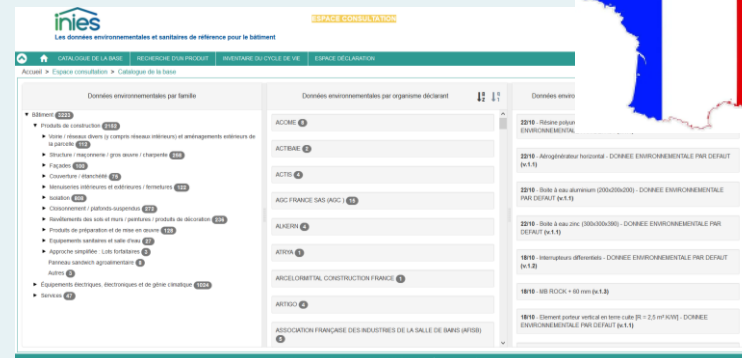
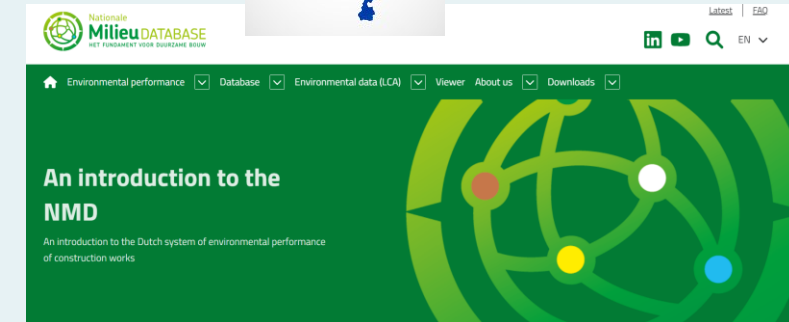


En route vers le ZD dans la construction

# 02.

## EPD – Type III

- Existence of various national programs
  - Attempt(s) at mutual recognition
  - Blocking: "national complements"
  - Under progress: harmonisation: CEN TC/350



En route vers le ZD dans la construction

# 02.

## EPD – Type III

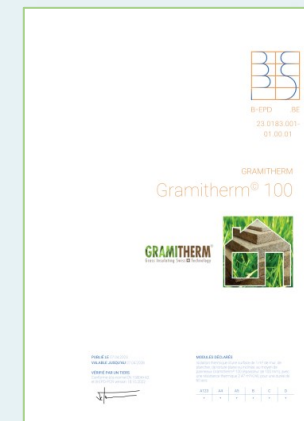
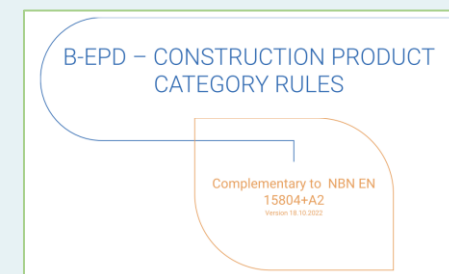
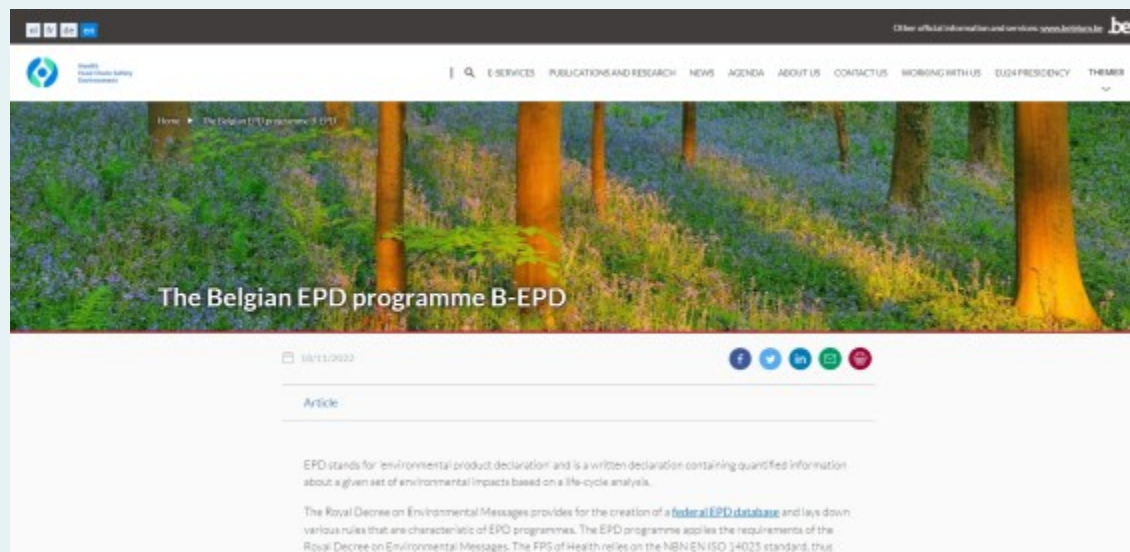


SERVICE PUBLIC FEDERAL SANTE PUBLIQUE,  
SECURITE DE LA CHAINE ALIMENTAIRE  
ET ENVIRONNEMENT

[C – 2014/24263]

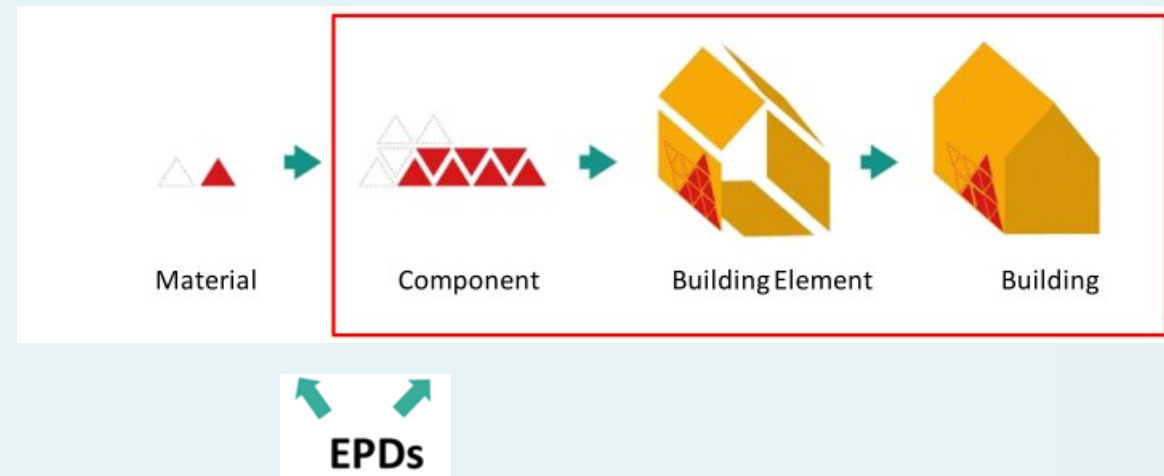
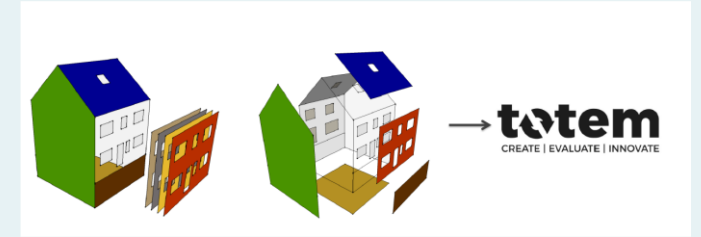
22 MAI 2014. — Arrêté royal fixant les exigences minimales pour les affichages environnementaux sur les produits de construction et pour l'enregistrement des déclarations environnementales de produits dans la base de données fédérale

- https://www.health.belgium.be/en/belgian-epd-programme-b-epd



## B-EPD

- Mandatory
  - In the case of an environmental claim (cf. AR 2014)
  - For integration in the TOTEM
    - = Tool to Optimize the Total Environmental impact of Materials
- Rapid development:
  - **126 B-EPD** (103 "EN15804+A2") (14.09.2023)
  - **28** companies/brands or federations



# 02.

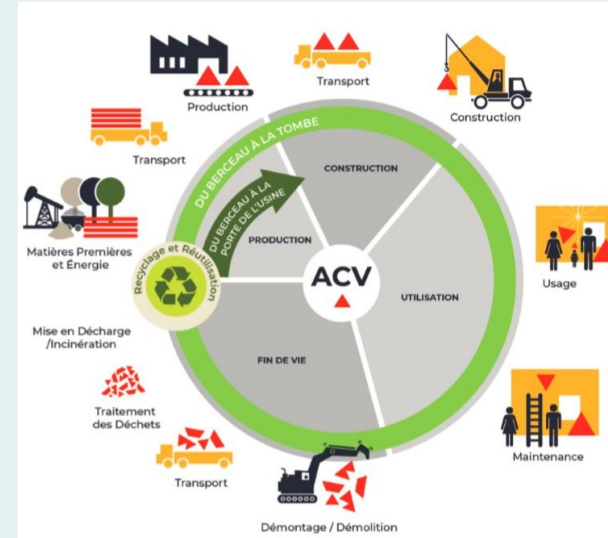
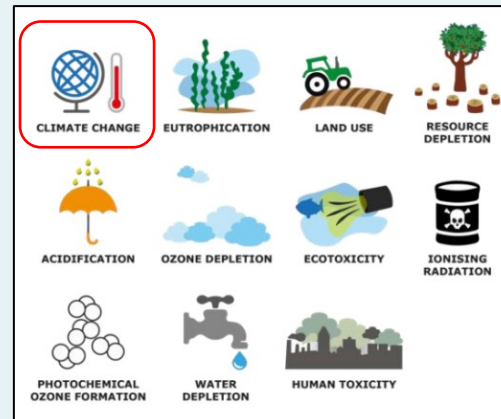
## Life Cycle Assessment (LCA)

ISO 14040/44:2006

- environmental aspects & potential impacts
- throughout the entire life cycle



GIEC/IPCC



**Diagnostic** : "what is"  
⇒ Communication

**Ecoconception** : "what will be"  
⇒ New product/process  
⇒ Improvement



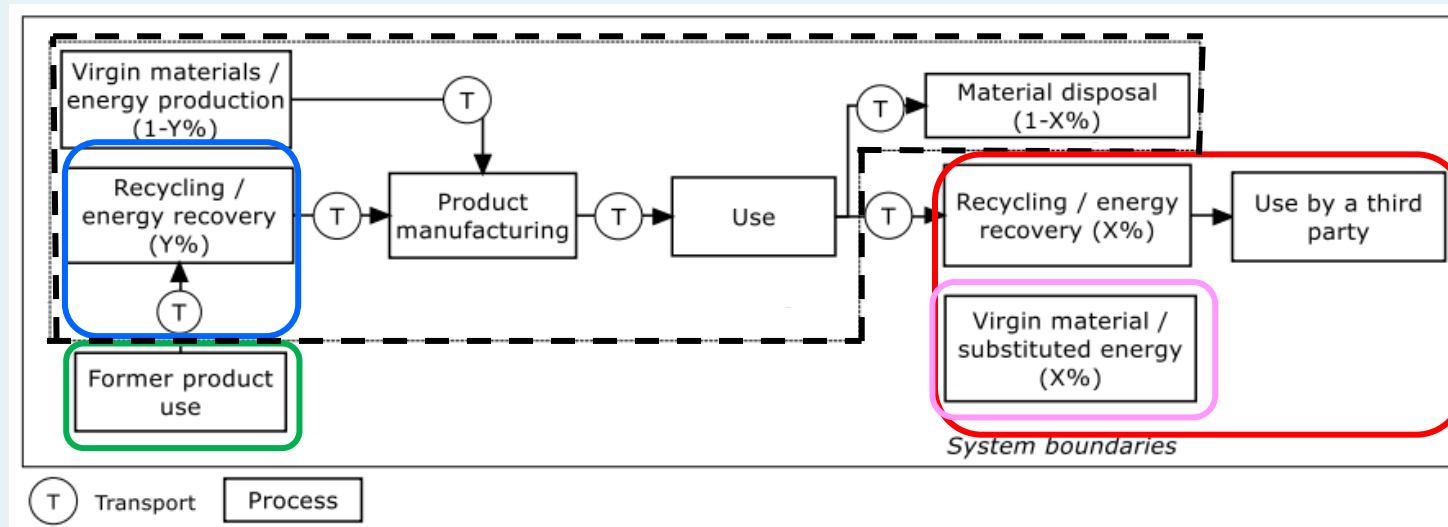
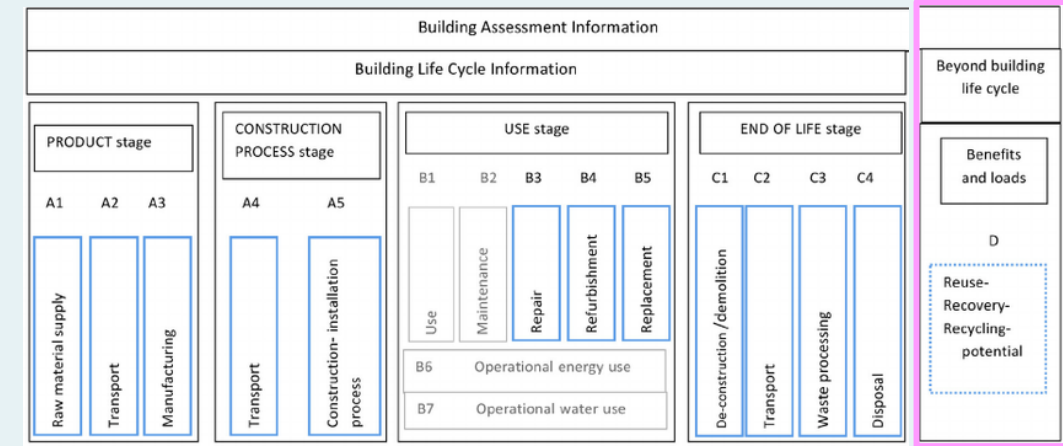
# 02.

## Life Cycle Assessment (LCA)

- Standard EN15804+A2:2019 : Buildings
- Perspective: "Cut-off"



- Recycled = "free"
- BUT recycling at the EoL
- ⇒ Module D → reused and/or recycled materials at their EoL

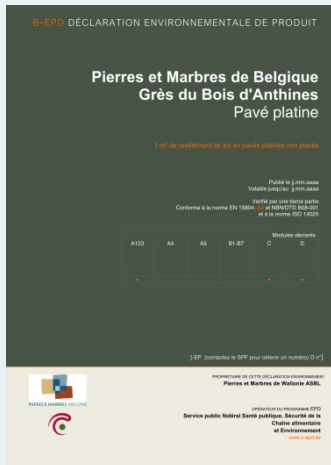


©CIRAIG.

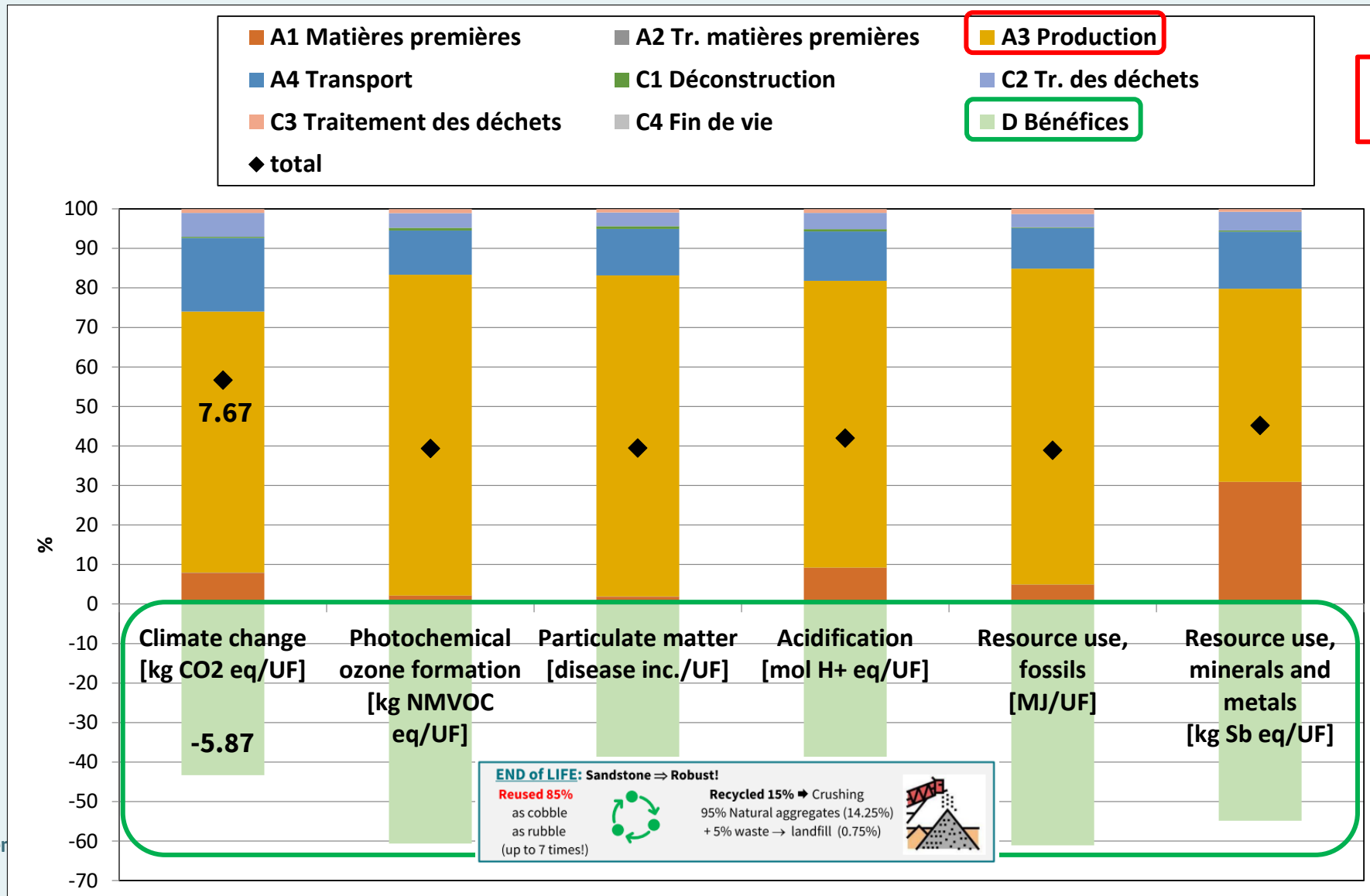
## 02.

# Sandstone cobbles (GBA)

1 m<sup>2</sup> of cobbles (= FU) – Characterisation – EN15804+A2:2019



En route vers

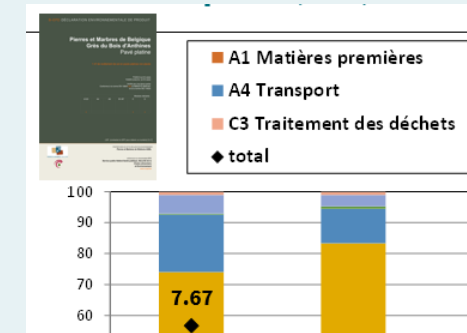


## 02.

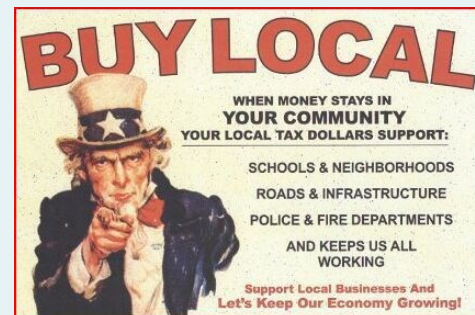
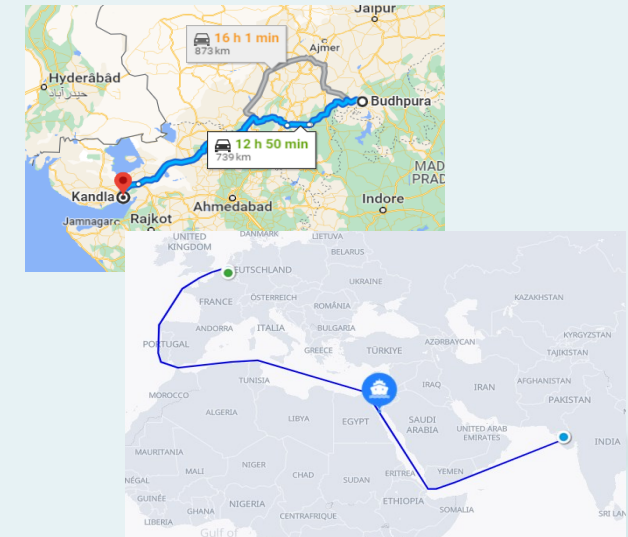
# Public procurement & Environment

Example: Walloon paving cobble stones

- What about the transport from the production site to the installation site? (A4)
- Default value B-EPD
  - Lorry  $\Rightarrow$  CC = 2.52 kg CO<sub>2</sub> eq/m<sup>2</sup>

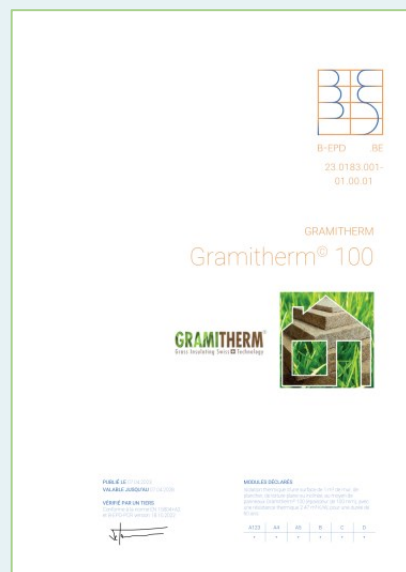


- India (Rajasthan): competitor (NB: quality?)
  - Lorry / Container transoceanic ship (~ 740/11 500 km) / Lorry  $\Rightarrow$  CC = 42.25 kg CO<sub>2</sub> eq/m<sup>2</sup>
- + Electricity!
  - Belgium : 0.248 kg CO<sub>2</sub> eq/kWh
  - India (East) : 1.83 kg CO<sub>2</sub> eq/kWh / Inde (West) : 1.63 kg CO<sub>2</sub> eq/kWh



# B-EPD: Recycled content: Resource use

## 7 UTILISATION DES RESSOURCES



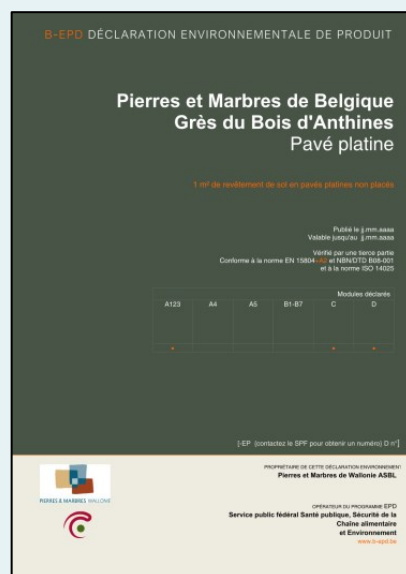
|                                        | Production            |              |                | Phase du processus de construction |                 | Phase d'utilisation |                |               |                 |                  |                                            |                                     | Phase de fin de vie            |           |                           |                |                                          |
|----------------------------------------|-----------------------|--------------|----------------|------------------------------------|-----------------|---------------------|----------------|---------------|-----------------|------------------|--------------------------------------------|-------------------------------------|--------------------------------|-----------|---------------------------|----------------|------------------------------------------|
|                                        | A1 Matières premières | A2 Transport | A3 fabrication | A4 Transport                       | A5 Installation | B1 Utilisation      | B2 Maintenance | B3 Réparation | B4 Remplacement | B5 Remise à neuf | B6 Utilisation opérationnelle de l'énergie | B7 Utilisation d'eau opérationnelle | C1 Déconstruction / démolition | Transport | C3 Traitement des déchets | C4 Élimination | D Réutilisation, valorisation, recyclage |
| PERE (MJ/UF, pouvoir calorifique net)  | 8.11E-01              | 1.08E-02     | 6.78E+00       | 2.73E-02                           | 2.40E+00        | 0.00E+00            | 0.00E+00       | 0.00E+00      | 0.00E+00        | 0.00E+00         | 0.00E+00                                   | 0.00E+00                            | 0.00E+00                       | 1.82E-02  | 4.85E+01                  | 7.78E-04       | -8.11E+00                                |
| PERM (MJ/UF, pouvoir calorifique net)  | 5.07E+01              | 0.00E+00     | 3.72E+00       | 0.00E+00                           | -3.43E+00       | 0.00E+00            | 0.00E+00       | 0.00E+00      | 0.00E+00        | 0.00E+00         | 0.00E+00                                   | 0.00E+00                            | 0.00E+00                       | 0.00E+00  | -4.84E+01                 | 0.00E+00       | 2.28E+00                                 |
| PERT (MJ/UF, pouvoir calorifique net)  | 5.15E+01              | 1.08E-02     | 1.05E+01       | 2.73E-02                           | -1.03E+00       | 0.00E+00            | 0.00E+00       | 0.00E+00      | 0.00E+00        | 0.00E+00         | 0.00E+00                                   | 0.00E+00                            | 0.00E+00                       | 1.82E-02  | 5.53E-02                  | 7.78E-04       | -5.84E+00                                |
| PENRE (MJ/UF, pouvoir calorifique net) | 2.43E+01              | 7.84E-01     | 3.32E+01       | 2.14E+00                           | 2.94E+00        | 0.00E+00            | 0.00E+00       | 0.00E+00      | 0.00E+00        | 0.00E+00         | 0.00E+00                                   | 0.00E+00                            | 0.00E+00                       | 1.29E+00  | 9.20E+00                  | 3.02E-02       | -4.32E+01                                |
| PENRM (MJ/UF, pouvoir calorifique net) | 7.34E+00              | 0.00E+00     | 2.40E+00       | 0.00E+00                           | -2.23E+00       | 0.00E+00            | 0.00E+00       | 0.00E+00      | 0.00E+00        | 0.00E+00         | 0.00E+00                                   | 0.00E+00                            | 0.00E+00                       | 0.00E+00  | -7.01E+00                 | 0.00E+00       | 8.55E-01                                 |
| PENRT (MJ/UF, pouvoir calorifique net) | 3.16E+01              | 7.84E-01     | 3.55E+01       | 2.14E+00                           | 7.06E-01        | 0.00E+00            | 0.00E+00       | 0.00E+00      | 0.00E+00        | 0.00E+00         | 0.00E+00                                   | 0.00E+00                            | 0.00E+00                       | 1.29E+00  | 2.19E+00                  | 3.02E-02       | -4.32E+01                                |
| SM (kg/UF)                             | 3.68E+00              | 0.00E+00     | 3.75E-02       | 0.00E+00                           | 7.44E-02        | 0.00E+00            | 0.00E+00       | 0.00E+00      | 0.00E+00        | 0.00E+00         | 0.00E+00                                   | 0.00E+00                            | 0.00E+00                       | 0.00E+00  | 0.00E+00                  | 0.00E+00       | 0.00E+00                                 |
| RSF (MJ/UF, pouvoir calorifique net)   | 0.00E+00              | 0.00E+00     | 0.00E+00       | 0.00E+00                           | 0.00E+00        | 0.00E+00            | 0.00E+00       | 0.00E+00      | 0.00E+00        | 0.00E+00         | 0.00E+00                                   | 0.00E+00                            | 0.00E+00                       | 0.00E+00  | 0.00E+00                  | 0.00E+00       | 0.00E+00                                 |
| NRSF (MJ/UF, pouvoir calorifique net)  | 0.00E+00              | 0.00E+00     | 0.00E+00       | 0.00E+00                           | 0.00E+00        | 0.00E+00            | 0.00E+00       | 0.00E+00      | 0.00E+00        | 0.00E+00         | 0.00E+00                                   | 0.00E+00                            | 0.00E+00                       | 0.00E+00  | 0.00E+00                  | 0.00E+00       | 0.00E+00                                 |
| FW (m³ éq. eau / UF)                   | 6.26E-03              | 1.55E-04     | 3.84E-03       | 4.43E-04                           | 5.76E-04        | 0.00E+00            | 0.00E+00       | 0.00E+00      | 0.00E+00        | 0.00E+00         | 0.00E+00                                   | 0.00E+00                            | 0.00E+00                       | 2.16E-04  | 6.26E-03                  | 3.50E-05       | -8.11E-03                                |

PERE = UTILISATION DE L'ÉNERGIE PRIMAIRE RENOUVELABLE À L'EXCLUSION DES RESSOURCES ÉNERGÉTIQUES PRIMAIRES RENOUVELABLES UTILISÉES COMME MATIÈRES PREMIÈRES ; PERM = UTILISATION DES RESSOURCES ÉNERGÉTIQUES PRIMAIRES RENOUVELABLES UTILISÉES COMME MATIÈRES PREMIÈRES ; PERT = UTILISATION TOTALE DES RESSOURCES D'ÉNERGIE PRIMAIRE RENOUVELABLES ; PENRE = UTILISATION DE L'ÉNERGIE PRIMAIRE NON RENOUVELABLE À L'EXCLUSION DES RESSOURCES ÉNERGÉTIQUES PRIMAIRES NON RENOUVELABLES UTILISÉES COMME MATIÈRES PREMIÈRES ; PENRM = UTILISATION DES RESSOURCES D'ÉNERGIE PRIMAIRE NON RENOUVELABLES UTILISÉES EN TANT QUE MATIÈRES PREMIÈRES ; PENRT = UTILISATION TOTALE DES RESSOURCES D'ÉNERGIE PRIMAIRE NON RENOUVELABLES ; SM = UTILISATION DE MATIÈRE SECONDAIRE ; RSF = UTILISATION DE COMBUSTIBLES SECONDAIRES RENOUVELABLES ; NRSF = UTILISATION DE COMBUSTIBLES SECONDAIRES NON RENOUVELABLES ; FW = UTILISATION NETTE D'EAU DOUCE



## 02.

## B-EPD: Reusable / Recyclable content: Output flows



## CATÉGORIES DE DÉCHETS ET FLUX DE PRODUCTION

|                                                        | Production            |              |                | Phase du processus de construction |                 | Phase d'utilisation |                |               |                 |                  |                                            |                                     | Phase de fin de vie            |           |                           |                | D Réutilisation, valorisation, recyclage |
|--------------------------------------------------------|-----------------------|--------------|----------------|------------------------------------|-----------------|---------------------|----------------|---------------|-----------------|------------------|--------------------------------------------|-------------------------------------|--------------------------------|-----------|---------------------------|----------------|------------------------------------------|
|                                                        | A1 Matières premières | A2 Transport | A3 fabrication | A4 Transport                       | A5 Installation | B1 Utilisation      | B2 Maintenance | B3 Réparation | B4 Remplacement | B5 Remise à neuf | B6 Utilisation opérationnelle de l'énergie | B7 Utilisation d'eau opérationnelle | C1 Déconstruction / démolition | Transport | C3 Traitement des déchets | C4 Elimination |                                          |
| Élimination des déchets dangereux (kg/UF)              | 2.74E-05              | 1.84E-07     | 2.16E-04       | 9.39E-05                           | MND             | MND                 | MND            | MND           | MND             | MND              | MND                                        | MND                                 | 1.28E-06                       | 3.08E-05  | 3.01E-06                  | 1.26E-07       | -1.09E-04                                |
| Déchets non dangereux éliminés (kg/UF)                 | 7.02E-03              | 2.91E-06     | 5.78E-02       | 1.48E-03                           | MND             | MND                 | MND            | MND           | MND             | MND              | MND                                        | MND                                 | 2.60E-05                       | 4.87E-04  | 9.71E-04                  | 1.47E+00       | -5.73E-02                                |
| Déchets radioactifs éliminés (kg/UF)                   | 3.43E-05              | 5.04E-07     | 2.50E-03       | 2.57E-04                           | MND             | MND                 | MND            | MND           | MND             | MND              | MND                                        | MND                                 | 3.56E-06                       | 8.44E-05  | 4.14E-05                  | 3.50E-07       | -1.87E-03                                |
| Composants destinés à la réutilisation (kg/UF)         | 0.00E+00              | 0.00E+00     | 0.00E+00       | 0.00E+00                           | MND             | MND                 | MND            | MND           | MND             | MND              | MND                                        | MND                                 | 0.00E+00                       | 0.00E+00  | 1.66E+02                  | 0.00E+00       | 0.00E+00                                 |
| Matériaux destinés au recyclage (kg/UF)                | 0.00E+00              | 0.00E+00     | 1.54E+00       | 0.00E+00                           | MND             | MND                 | MND            | MND           | MND             | MND              | MND                                        | MND                                 | 0.00E+00                       | 0.00E+00  | 2.79E+01                  | 0.00E+00       | 0.00E+00                                 |
| Matériaux destinés à la récupération d'énergie (kg/UF) | 0.00E+00              | 0.00E+00     | 0.00E+00       | 0.00E+00                           | MND             | MND                 | MND            | MND           | MND             | MND              | MND                                        | MND                                 | 0.00E+00                       | 0.00E+00  | 0.00E+00                  | 0.00E+00       | 0.00E+00                                 |
| Énergie fournie à l'extérieur (MJ/UF)                  | 0.00E+00              | 0.00E+00     | 0.00E+00       | 0.00E+00                           | MND             | MND                 | MND            | MND           | MND             | MND              | MND                                        | MND                                 | 0.00E+00                       | 0.00E+00  | 0.00E+00                  | 0.00E+00       | 0.00E+00                                 |

## END of LIFE: Sandstone ⇒ Robust!

**Reused 85%**  
as cobble  
as rubble  
(up to 7 times!)



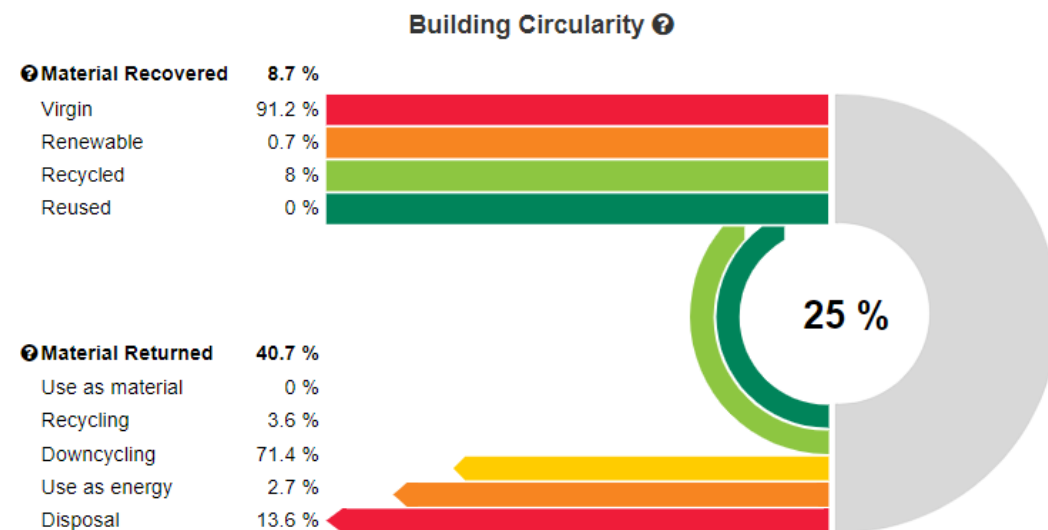
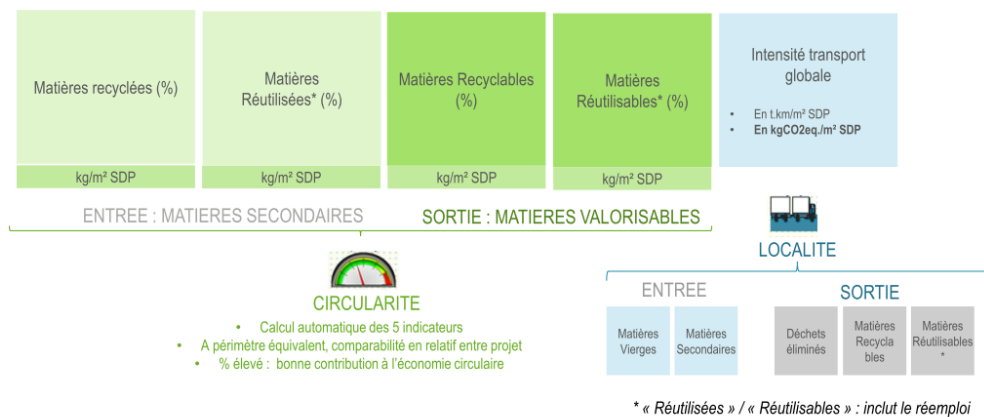
**Recycled 15% ⇒ Crushing**  
95% Natural aggregates (14.25%)  
+ 5% waste → landfill (0.75%)



# 03.

## Circularity: Quantification

### Résultats : Indicateurs de circularité et de localité calculés automatiquement



Resources, Conservation & Recycling 127 (2017) 221–232

Contents lists available at ScienceDirect

**Resources, Conservation & Recycling**

journal homepage: [www.elsevier.com/locate/resconrec](http://www.elsevier.com/locate/resconrec)

ELSEVIER

Review

**Conceptualizing the circular economy: An analysis of 114 definitions**

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**ARTICLE INFO**

**Keywords:**  
Circular economy  
4R framework  
Sustainable development  
Definitions  
Content analysis

**ABSTRACT**

The circular economy claim that it means more than just recycling. The aim of this paper is to explore the concept of the circular economy. For this purpose, 114 definitions of the circular economy concept are analyzed along 17 dimensions. Our findings show that the circular economy concept is not only about reducing, reusing and recycling, but also about developing new business models. We further find that the circular economy concept is not only about environmental quality, but also about economic prosperity. The main environmental quality is neither business model nor economic prosperity. We discuss the various circular economy definitions via this study towards the coherence of the circular economy concept; we presume that significantly varying circular economy definitions may eventually result in the collapse of the concept.

rs and practitioners. However, critics provide further evidence for these current understandings of the circular economy definitions which were coded on 17 dimensions. It is frequently depicted as a combination of environmental quality and economic prosperity. It is argued that CE necessitates a systemic shift. The circular economy concept to sustainable development is economic prosperity, followed by environmental quality. This is barely mentioned. Furthermore, the circular economy concept is not only about environmental quality. We critically analyze the circular economy concept. Overall, we hope to contribute to the circular economy concept. We critically analyze the circular economy concept. Overall, we hope to contribute to the circular economy concept.

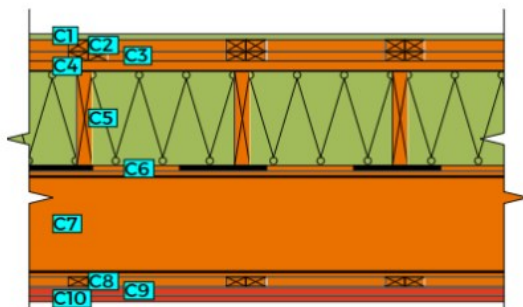




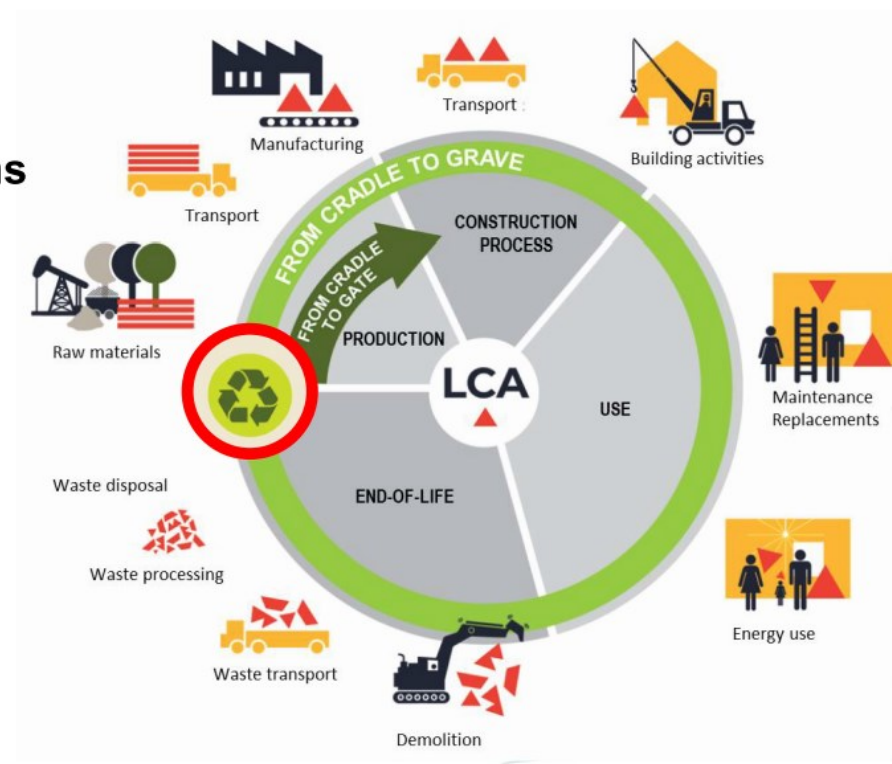




- **Potential for reuse and recycling**
  - └ Qualitative evaluation of the **reversibility potential of connections**



*Since December 2021 in TOTEM*



# B-EPD / TOTEM : Reversibility

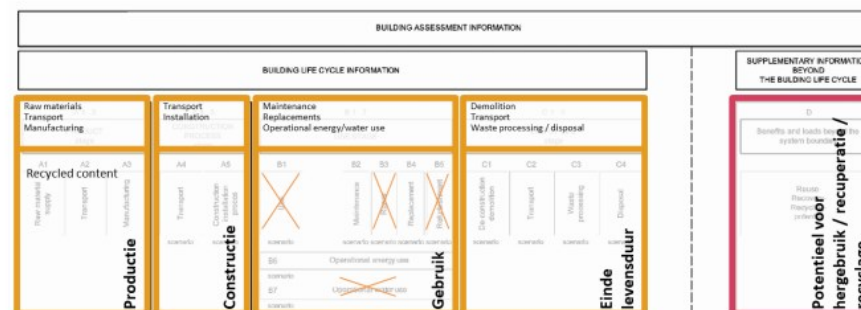
## 16 ADDITIONAL INFORMATION ON REVERSIBILITY

| Description                                                           | Type of fixing                                                                                                        | Level of reversibility                                                                                                                                                                     | Simplicity of disassembly                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Speed of disassembly                                                                                                                                          | Ease of handling (size and weight)                                                                                                                          | Robustness of material (material resistance to disassembly)                                                                                                                                                                                             | Comment |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Describe to what element or other product the product is installed to | Description of ancillary material and way of connecting. One line per way of connecting. See table below for options. | Indicate the level of reversibility based on the table below <b>per type of fixing</b> :<br>- Reversible connections<br>- Reversible connections with light dam<br>- Rev<br>- Non<br>- Non | per type of connection, choose from:<br>- simple – no specific dismantling tools required<br>- Simple – requires the use of specific though common                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Per type of connection choose from:<br>- speedy disassembly<br>- Speedy, lightweight material<br>- Speedy, material loosely laid / in bulk<br>- Rather speedy | Per type of connection choose from:<br>- Easy to manipulate (by hand (small size and limited weight): one worker should be sufficient<br>- Material easy to | Per type of connection choose from:<br>- The material resists well during disassembly<br>- Disassembly is possible but should be done carefully in order not to generate any damage<br>- Material with a long lifespan, disassembly is possible but the |         |
|                                                                       |                                                                                                                       |                                                                                                                                                                                            | <div> <p>dans la masse coulé/projeté/enduit...</p> <p>collage à chaud/à froid/colle/adhésif/tape/plâtre et mousse de collage...</p> <p>soudure</p> <p>mortier colle_joints (R ≥ Rmat)</p> <p>mortier de ciment_joints (R ≥ Rmat)</p> <p>mortier bâtard (ciment-chaux)_joints (R ≥ Rmat)</p> <p>mortier de chaux_joints (R &lt; Rmat)</p> <p>mortier d'argile_joints (R &lt; Rmat)</p> <p>sable_joints (R &lt; Rmat)</p> <p>mastic (vitrage, sanitaires...)_joints (R &lt; Rmat)</p> <p>mécanique dépendant _clous/agrafes...</p> <p>mécanique indépendante _vis/boulons/chevilles...</p> <p>mécanique autonome _équerres/crochets/sabots/clips...</p> <p>mécanique + collage (plâtre/mortier/mousse...)</p> <p>emboîtement/superposition/accollement/juxtaposition</p> <p>emboîtement + sous chape_hourdis...</p> <p>pose libre_en vrac</p> <p>pose libre_sans lestage</p> <p>pose libre_avec lestage</p> <p>pose libre_avec lestage_sous chape</p> <p>composite multicouche (d'office collé à la couche adjacente)</p> </div> |                                                                                                                                                               |                                                                                                                                                             | <div> <p><b>Non réversible</b></p> <p><b>Réversible MAIS avec endommagement</b></p> <p><b>Réversible MAIS avec endommagement</b></p> <p><b>Réversible</b></p> </div>                                                                                    |         |
| e.g. Bricks joint together to form an external wall                   | cement mortar for masonry joints (R joint ≥ Rmat)                                                                     | E.g. Non reversible connections                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                               |                                                                                                                                                             |                                                                                                                                                                                                                                                         |         |
| e.g. Insulation attached to concrete flat roof structure              | Loose laid with ballast                                                                                               | e.g. reversible connections                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                               |                                                                                                                                                             |                                                                                                                                                                                                                                                         |         |
| e.g. Insulation attached to concrete flat roof structure              | screws                                                                                                                | reversible with light repairable damage                                                                                                                                                    | simple - use of dismantling tools required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | speedy disassembly                                                                                                                                            | easy to handle manually, one workers is usually sufficient                                                                                                  | disassembly is possible but should be done carefully in order not to generate any damage                                                                                                                                                                |         |
| ...                                                                   | ...                                                                                                                   | ...                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                               |                                                                                                                                                             |                                                                                                                                                                                                                                                         |         |



→ Future

└ Calculation impact Module D  
“potential for reuse, recycling, ...”



# 03.

## Resource use - Evaluation?

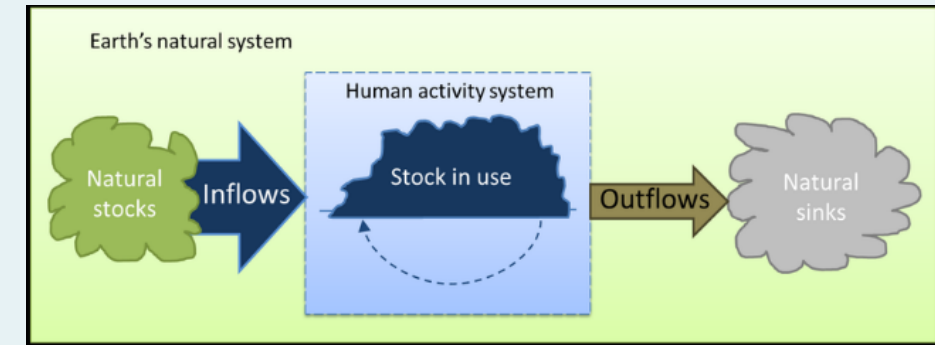
Resource depletion ("scarcity") → ???

Int J Life Cycle Assess (2016) 21:85–105

99

**Table 5** Intended versus actual AOP for select methods

| Method                                                                  | Intended area of protection                                                                                         | Actual area of protection                                       | Data used                                                                      |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------|
| ADP (Guinée and Heijungs 1995)                                          | Depletion of non-renewable resources                                                                                | Long-term depletion of (primary) abiotic resources              | Average crustal concentration, volume of the continental crust, and production |
| ADP (Van Oers et al. 2002) alternatives 1 and 2                         | Depletion of non-renewable resources                                                                                | Medium-term availability of resources                           | Mineral resources and mineral reserves                                         |
| EDIP (Hauschild and Wenzel 1998)                                        | Depletion of non-renewable resources                                                                                | Short-term availability of resources per person                 | Mineral reserves                                                               |
| Exergy (Finnveden and Östlund 1997; Dewulf et al. 2007)                 | Environmental and socioeconomic efficiencies of resource use                                                        | "Natural" stocks and flows of exergy                            | Exergy co-efficients                                                           |
| IMPACT 2002 (Joliet et al. 2003) and EI99 (Goedkoop and Spriensma 2001) | Depletion of non-renewable resources                                                                                | Medium-term availability of resources in current fleet of mines | Processed ore grades                                                           |
| ReCiPe (Goedkoop et al. 2009)                                           | Damage to resource availability—"additional net present costs that society has to pay as a result of an extraction" | Medium-term availability of resources in current fleet of mines | Processed ore grades and fuel prices                                           |
| AADP (Schneider et al. 2011)                                            | Depletion of non-renewable resources                                                                                | Medium-term availability of resources                           | Mineral resources and anthropogenic stocks                                     |
| AADP (Schneider et al. 2015)                                            | Depletion of non-renewable resources                                                                                | Medium-long term availability of resources                      | Ultimately extractable reserve estimations and anthropogenic stocks            |

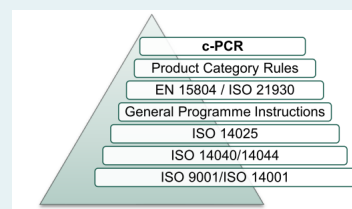
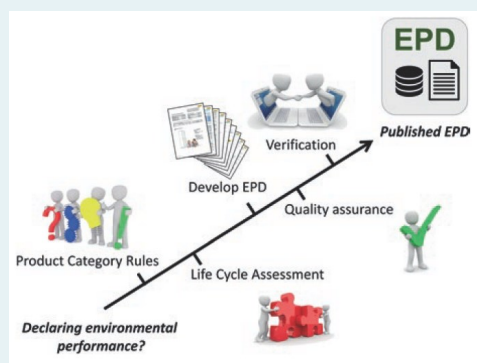


# 04.

## Conclusion

The environmental product declaration: a **tool of choice** for material selection?

→ **figuratively:** in French ("de choix") : *of excellent quality, first rate*



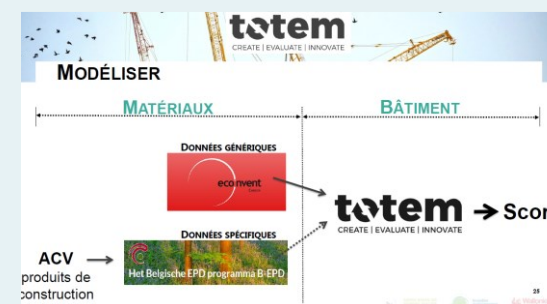
→ **literally:** *to select carefully*

Potentiel de réchauffement global

Potentiel d'épuisement abiotique pour les ressources non fossiles

Potentiel d'épuisement abiotique pour les ressources fossiles

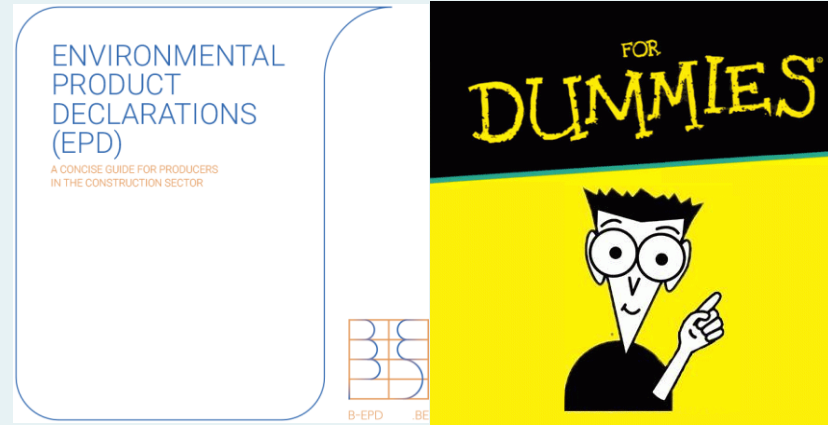
|                                                |  |  |  |  |
|------------------------------------------------|--|--|--|--|
| SM (kg/UF)                                     |  |  |  |  |
| Composants destinés à la réutilisation (kg/UF) |  |  |  |  |
| Matériaux destinés au recyclage (kg/UF)        |  |  |  |  |



## Take home message

The environmental product declaration: a tool of choice for material selection!

- Help with understanding



- Communication assistance
  - ⇒ Training for the sales teams
  - ⇒ Clear and understandable summary document
- Addendum aux (B-)EPD ?
  - ⇒ Recycled content, recyclability, ...



# Survey

The environmental product declaration: a tool of choice for the selection of materials?



>>>



3-4 persons



~1/4





# After the show

- ▶ Lots of positive feedbacks from people with different backgrounds
  - ▶ Decision makers and organisers (SPW)
  - ▶ Architects / Users of materials
  - ▶ Producers of materials
- ➔ Better understanding on the content of (B-)EPD
- ▶ Agreement that some "popularisation" is needed
- ▶ For both producers and users of materials
- ➔ Summary of main (environmental) characteristics



- Globally: ↗ demands for (B-)EPD or FDES  
⇒ more and more important for their **customers**



Biobased, renewable,  
recycled content/recyclable, ...

- ? Future obligation of EPD/TOTEM ?  
→ public procurements, permissions/incentives for building and/or renovation, ...



**GUIDE BÂTIMENT DURABLE** brussels

Rechercher dans le guide

bruxelles environnement brussels

FR

◀ Solution: TOTEM - Un outil belge pour améliorer la performance environnementale des bâtiments

### Intégrer des exigences liées aux matériaux de construction dans les marchés publics

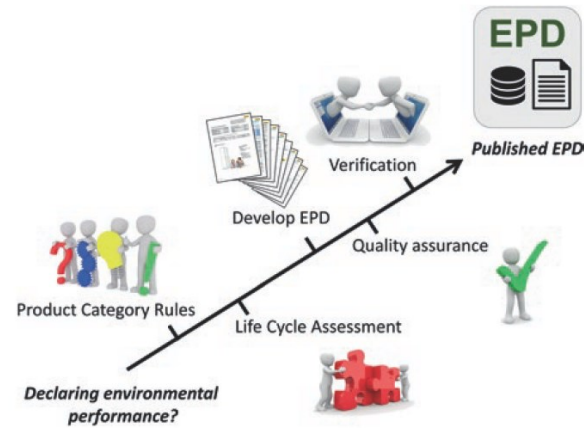
L'impact environnemental des projets de construction et de rénovation est une problématique qui se pose sur un nombre croissant de projets. On a longtemps cherché à réduire l'énergie consommée des bâtiments, notamment au travers de la PEB. Or, il serait réducteur de penser que l'impact d'un bâtiment sur l'environnement se réduit uniquement à l'énergie utilisée en phase d'utilisation. TOTEM est un outil très utile pour quantifier l'impact environnemental dû à la gestion des ressources sur toute sa durée de vie. Il devient également intéressant lorsque cette thématique veut être intégrée dans un marché public, puisqu'elle permet d'objectiver cet impact et de suivre un objectif précis tout au long d'un projet.

Ce document a pour but de donner des pistes pour l'intégration de TOTEM dans un marché public, permettant de fixer des objectifs réalistes et d'obtenir un cahier des charges cohérent. Ces pistes ne sont qu'un exemple de parcours de réflexion et d'élaboration d'un cahier des charges, et se basent sur un retour d'expérience d'accompagnements de 4 projets suivis entre 2020 et 2022. Ces 4 projets sont les suivants :

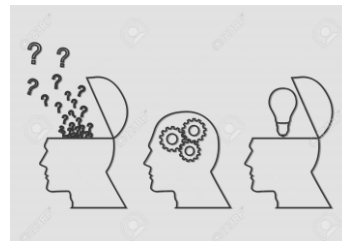
- Entre Deux Pont - Beliris : construction neuve de logements
- Clos des Mariés - SLRB : rénovation lourde de logements collectifs en logement sociaux
- Abbé - CLTB : construction neuve d'un immeuble de logements
- Trèfles - Fonds du logement : création d'un quartier durable constitué de 3 îlots d'habitations

<https://www.guidebatimentdurable.brussels/totem-outil-belge-ameliorer-performance-environnementale-batiments/integrer-exigences-liees>

# Conclusion



- ▶ Producers
- ▶ Consumers / Users
- ▶ Policy makers
- ▶ ...



**LA TERRE  
EST LA SEULE  
PLANÈTE  
OÙ TROUVER DU  
CHOCOLAT**  
**PRESERVONS-LA**

*a.*

MONDE EUROPE

## Le Parlement européen interdit les mentions environnementales non prouvées sur les produits



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17 janv. 2024 à 18:26 • 1 min

**INFO** Par la rédaction avec Belga

<https://www.rtbef.be/article/le-parlement-europeen-interdit-les-mentions-environnementales-non-prouvees-sur-les-produits-11314600>

<https://www.europarl.europa.eu/news/en/press-room/20240112IPR16772/meps-adopt-new-law-banning-greenwashing-and-misleading-product-information>



News  
European Parliament

Press room / MEPs adopt new law banning greenwashing and misleading product information

## MEPs adopt new law banning greenwashing and misleading product information

Press Releases **PLENARY SESSION** **IMCO** 17-01-2024 - 12:33



- Generic environmental claims and other misleading product information will be outlawed
- Only sustainability labels based on approved certification schemes or established by public authorities will be allowed
- Guarantee information has to be more visible and a new guarantee extension label will be introduced



Companies can no longer market their goods using unfounded claims about their environmental impact and durability. © Firn / Adobe Stock



Parliament has given its final green light to a directive that will improve product labelling and ban the use of misleading environmental claims.

