REVISED CONSTRUCTION PRODUCTS REGULATION

How the revised CPR will shape Wienerberger's business

Hans Been Architecten BNA / Jelmer van der Veer

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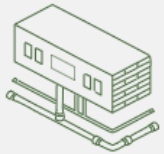
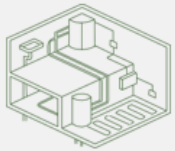
BUSINESS STRUCTURE

3 Business Areas	3 Key Facts	1 Clear Goal
 Building envelope	216 plants* and numerous partners	
 Water & Energy Management	~20,000 employees* in 28 countries across Europe, North America & India	Improving people's quality of life by providing outstanding solutions for new build, renovation, and infrastructure
 In-House Applications	€ 4,977 mn* revenues at record level	

** FY 2022*

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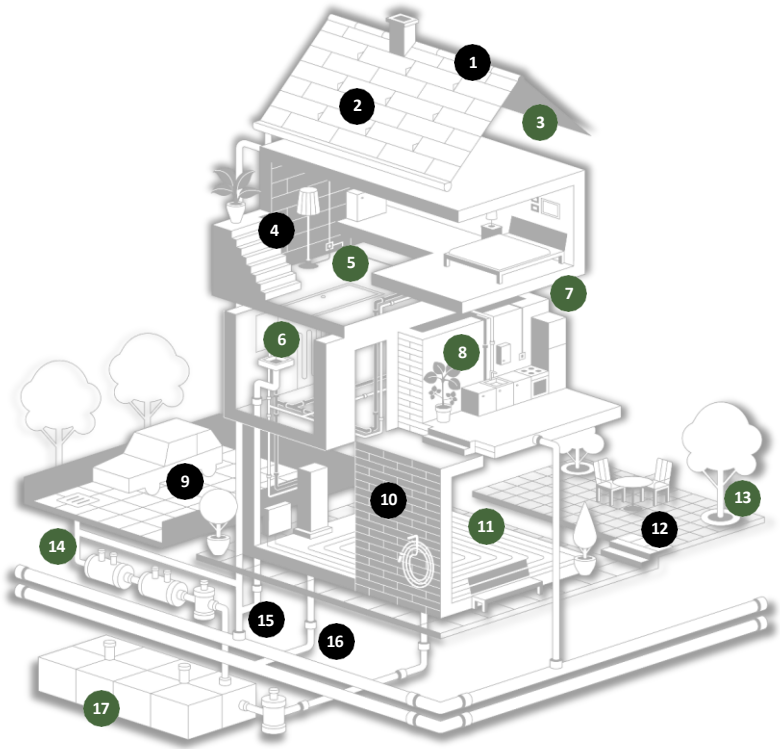
WIENERBERGER PORTFOLIO

PORTFOLIO ENHANCEMENT:
Newly introduced products & solutions since 2012, in green
Keramisch, in Nederland geproduceerd door Wienerberger
Niet-keramisch, in Nederland geproduceerd door Pipelife

1 Ceramic accessories
2 Roof tiles
3 Roof underlay
4 Clay blocks
5 Electrical installations
6 Wall heating and cooling system
7 Ceiling cooling
8 Hot and cold-water installation
9 Concrete pavers
10 Facing bricks
11 Floor heating
12 Clay pavers
13 Landscaping elements
14 Water filtration unit
15 Wastewater
16 Fresh water supply
17 Rainwater management



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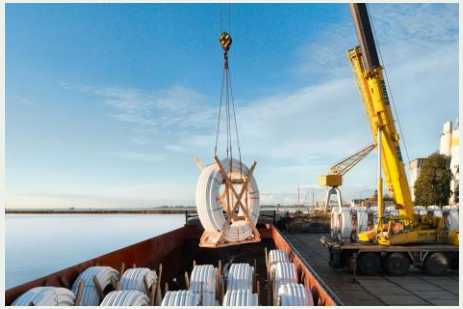
KEY TRENDS ARE SHAPING OUR BUSINESS

Climate change

Providing sustainable building products and system solutions

Regulation

Tightening regulation demands sustainable & energy-efficient building materials



Energy transition

Transition from fossil-based to renewable energy

Lack of skilled labor

Innovation, automation and prefabrication

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EXPANSION OF 2023 ESG TARGET ROADMAP UNTIL 2026

2023 Targets

Decarbonization	✓
Circularity	✓
Biodiversity	✓
Training & Development	✓
Diversity & Inclusion	✓
CSR	✓

2026 Targets

	Decarbonization
	Circularity
	Biodiversity
+	Revenue from products supporting net zero buildings
+	Water management
+	Waste management
+	Health & Safety
	Training & Development
	Diversity & Inclusion
	CSR

DUURZAAMHEID BIJ WIENERBERGER IN NEDERLAND

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WEVOLT | ENERGIEDAK

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CLICKBRICK | ZONDER MORTEL | MET RETOURGARANTIE

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CICLOBRICK | 20% SECUNDAIRE GRONDSTOFFEN

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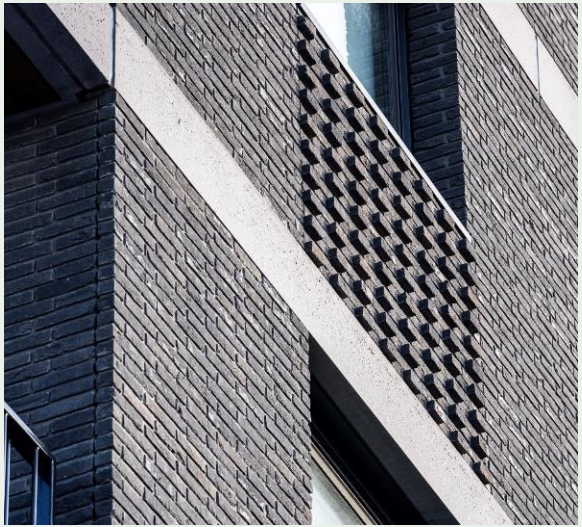
ECOBRICK | SMALLERE GEVELSTEEN



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ECOLINE | ELEKTRISCH GEPRODUCEERDE STEENSTRIP

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PURPOSE AND RELEVANCE OF THE CPR

Harmonized conditions for marketing of construction products in the EU

› a common basis to place products on the market

Harmonized technical specifications hTS (former “hEN”)

› a common **technical language** to assess the performance of construction products.

› enables building professionals to **compare product performance** from various manufacturers across different countries

› enables manufacturers to **draw up the Declaration of Performance** as defined in the CPR and affix the CE marking

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Advantage of CPR for construction products manufacturers

Construction products can circulate freely in the EU’s single market after being tested only once according to a harmonised technical specification (hTS)

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THE REVISED CPR - OVERVIEW

What is new for construction products manufacturers?

- **One single Declaration of Performance and Conformity** (DoPC) per product
- Manufacturers **must declare environmental indicators** for their products, according to EN 15804 (covered by standards)
- **New product requirements,** e.g. functional, performance, product safety requirements, product environmental aspects (recycled and by-product content…)
- **Digital Product Passport** including DoPC, general information, instructions for use, safety information, technical documentation
- **Sustainability labelling,** under certain conditions, for particular product families, only for B2C products
- **Reused products** to be regulated on a product-by-product basis through harmonized technical specifications
- **Coexistence period between previous and revised CPR:** the previous CPR will be repealed by 2039 > in between: **Acquis process**

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CPR TIMELINE: WHAT'S AHEAD

- **CPR articles related to the development of standards** applicable immediately from date of entry into force, most other articles will apply at 12 months after the date of entry into force.
- **Digital Product Passport system** to be established by a delegated act
  - 18 months later: obligation to deliver a Digital Product Passport (only mandatory for products with an applicable standard)
- **Revision of the CPR acquis** harmonized standards, European Assessment Documents and legal acts of the European Commission
  → aim: to ensure compliance of the acquis with the current and revised CPR

The new provisions of the revised CPR will effectively apply only when the relevant harmonized technical specification or European Assessment Document, based on the revised CPR, is published in the Official Journal of the EU. Until then, hENs cited in the Official Journal of the EU, under the current CPR, will continue to form the basis for CE marking of the related products being placed on the market.

EXAMPLE: Masonry Products

- 2024: start of acquis process for masonry products
- 2029 (tbc): publication of new masonry standard | timeline for roof and paver products unknown
- 2030: DoPC to include environmental indicators

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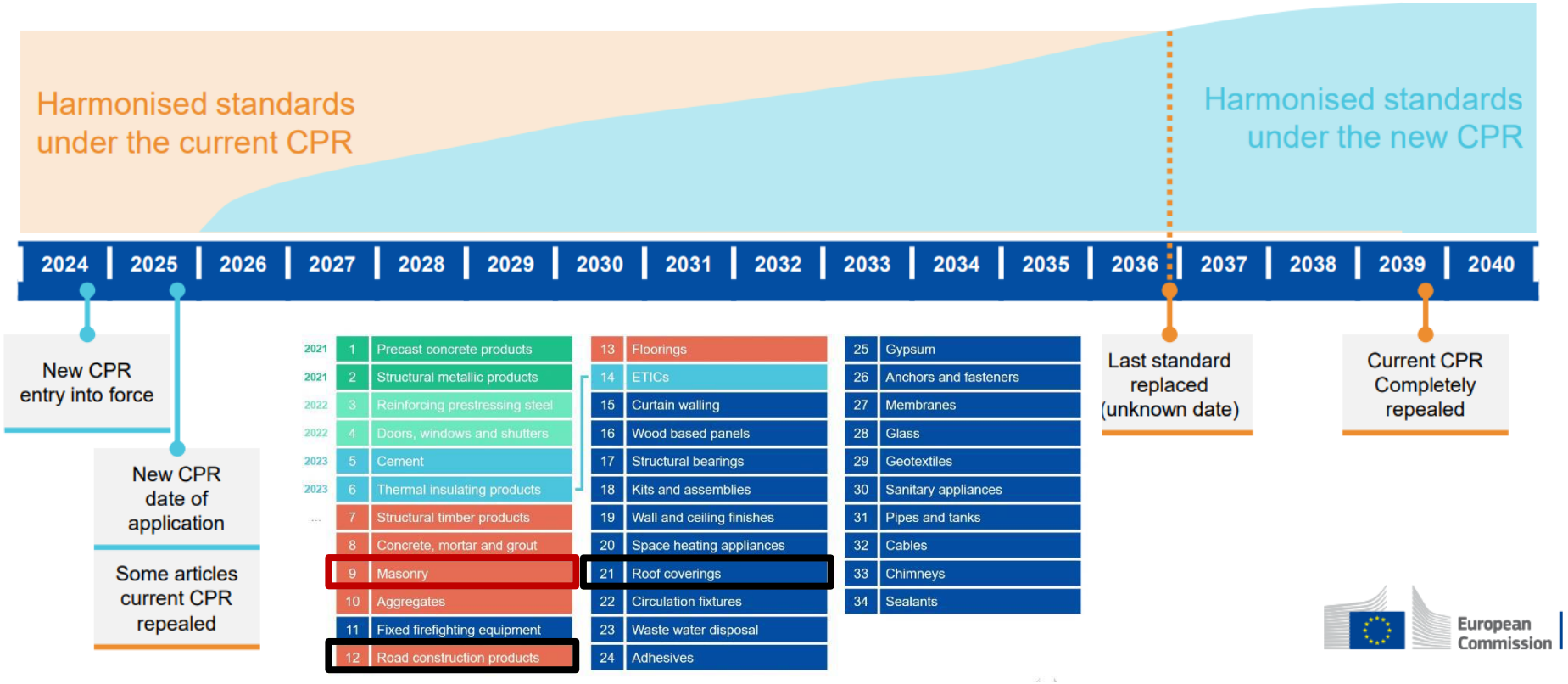
CPR TIMELINE: WHAT'S AHEAD



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CPR TIMELINE: MILESTONES

Entry into force
Preparatory phase

Date of application 1 year later
Full application to harmonised standards under the new CPR

Date fixed in a delegated act
Digital Product Passport System established

18 months after establishment
Obligation to deliver a Digital Product Passport

2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032

Standardisation requests to include all LCA indicators
Preparatory stage

Mandatory declaration of GWP indicators
Environmental declaration

Mandatory declaration of core indicators
4 years after DoA

Mandatory declaration of all LCA indicators
6 years after DoA

Example masonry products:
only after a revised standard,
based on a standardisation request,
based on the Acquis, is published

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DECLARATION OF ENVIRONMENTAL INDICATORS

- The DoPC declaration of performance and conformity (one single document will include the product's environmental sustainability
- The calculations should cover the **life cycle of the product** (in accordance with EN 15804 or future applicable standards)

Mandatory declaration of the environmental indicators only comes into force once there is a harmonised standard developed under the revised CPR and cited in the Official Journal of the European Union.

EXAMPLE: masonry products

> Masonry is late in the standardization process (2029)

> All 19 indicators will presumably have to be declared at once, irrespective of the CPR timelines

List of predetermined environmental essential characteristics to be covered by harmonised technical specifications and European assessment documents in relation to the life cycle assessment of a product:

Declaration ***as of 2025***
- ***(a) climate change effects – total;***
- ***(b) climate change effects – fossil fuels;***
- ***(c) climate change effects – biogenic;***
- ***(d) climate change effects – land use and land use change;***

Declaration ***as of 2029***
- (e) ozone depletion;
- (f) acidification potential;
- (g) eutrophication aquatic freshwater;
- (h) eutrophication aquatic marine;
- (i) eutrophication terrestrial;
- (j) photochemical ozone;
- (k) abiotic depletion – minerals, metals;
- (l) abiotic depletion – fossil fuels;
- (m) water use;

Declaration ***as of 2031***
- (n) particulate matter;
- (o) ionising radiation, human health;
- (q) eco-toxicity, freshwater;
- (p) human toxicity, cancer;
- (r) human toxicity, non-cancer;
- (s) land use related impacts.

Harmonised technical specifications shall also cover to the extent possible the ***predetermined environmental*** essential characteristic of capability to temporarily bind carbon and of other carbon removals.

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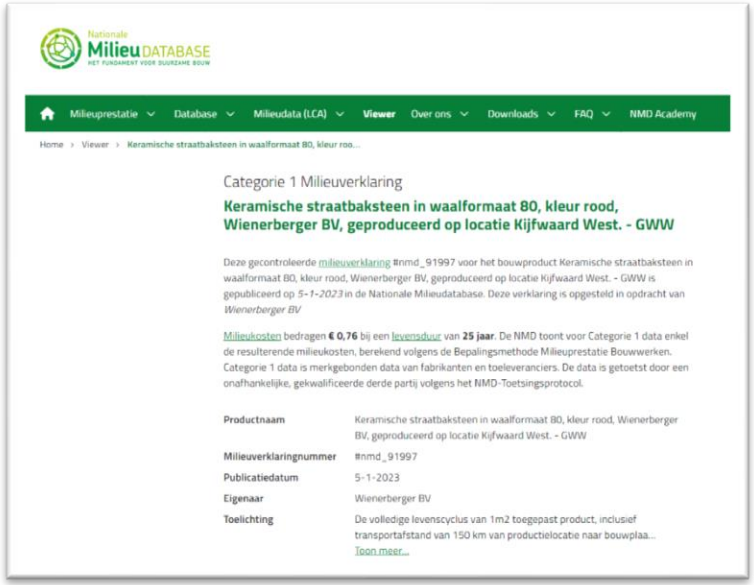
WHAT IS ALREADY AVAILABLE

Declaration of environmental indicators | EXAMPLE Wienerberger street pavers NL



Nationale Milieu DATABASE
HET FUNDAMENT VOOR DUURZAME BOUW

Milieuprestatie | Database | Milieudata (LCA) | Viewer | Over ons | Downloads | FAQ | NMD Academy

Home › Viewer › Keramische straatbaksteen in waalformaat 80, kleur roo...

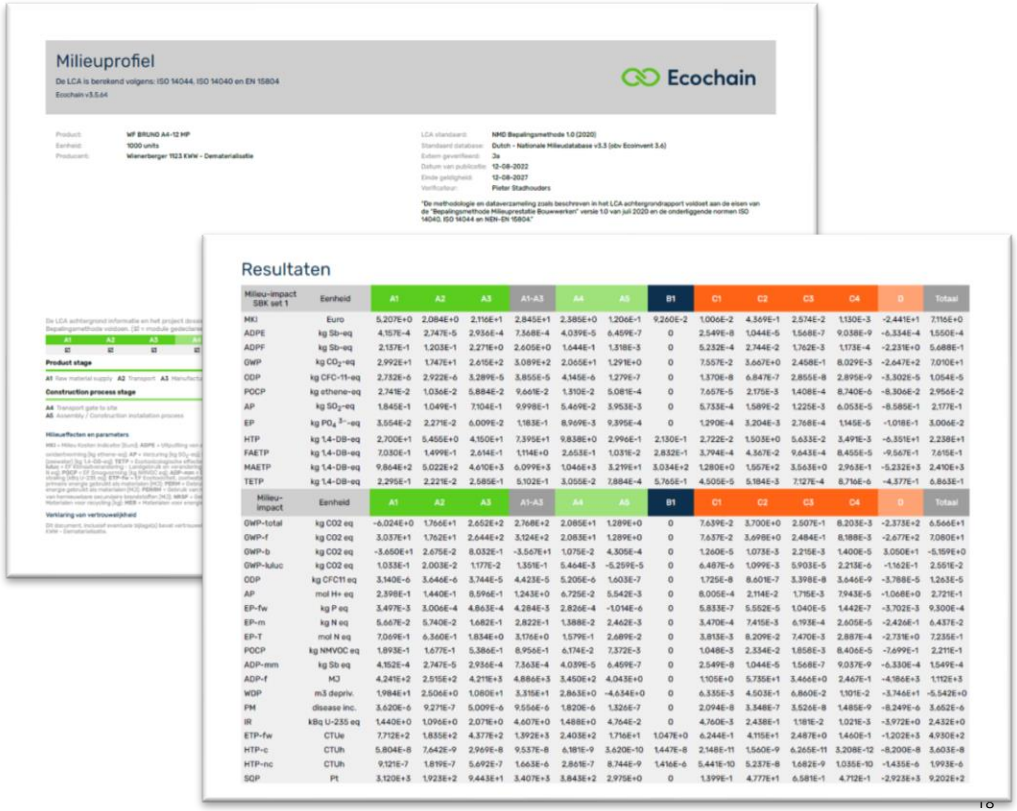
Categorie 1 Milieuverklaring

Keramische straatbaksteen in waalformaat 80, kleur rood, Wienerberger BV, geproduceerd op locatie Kijfwaard West. - GWW

Deze gecontroleerde milieuverklaring #nmd_91997 voor het bouwproduct Keramische straatbaksteen in waalformaat 80, kleur rood, Wienerberger BV, geproduceerd op locatie Kijfwaard West. - GWW is gepubliceerd op *5-1-2023* in de Nationale Milieudatabase. Deze verklaring is opgesteld in opdracht van *Wienerberger BV*

Milieukosten bedragen **€ 0,76** bij een levensduur van **25 jaar**. De NMD toont voor Categorie 1 data enkel de resulterende milieukosten, berekend volgens de Bepalingsmethode Milieuprestatie Bouwwerken. Categorie 1 data is merkgebonden data van fabrikanten en toeleveranciers. De data is getoetst door een onafhankelijke, gekwalificeerde derde partij volgens het NMD-Toetsingsprotocol.

Productnaam	Keramische straatbaksteen in waalformaat 80, kleur rood, Wienerberger BV, geproduceerd op locatie Kijfwaard West. - GWW
Milieuverklaringnummer	#nmd_91997
Publicatiedatum	5-1-2023
Eigenaar	Wienerberger BV
Toelichting	De volledige levenscyclus van 1m2 toegepast product, inclusief transportafstand van 150 km van productielocatie naar bouwplaa... Toon meer...



Milieuprofiel

De LCA is berekend volgens: ISO 14044, ISO 14040 en EN 15804
Ecochain v3.5.64

Ecochain

Product:	WF BRUNO A4-12 HP
Eenheid:	1000 units
Producent:	Wienerberger 1123 KWW - Dematerialisatie
LCA standaard:	NMD Bepalingsmethode 1.0 (2020)
Standaard database:	Dutch - Nationale Milieudatabase v3.5 (ecv Ecoinvent 3.6)
Extern geverifieerd:	Ja
Datum van publicatie:	12-08-2022
Einde geldigheid:	12-08-2027
Verificateur:	Pieter Stadhouders

"De methodologie en dataverzameling zoals beschreven in het LCA achtergrondrapport voldoet aan de eisen van de "Bepalingsmethode Milieuprestatie Bouwwerken" versie 1.0 van juli 2020 en de onderliggende normen ISO 14040, ISO 14044 en NEN-EN 15804."

Resultaten

Milieu-impact SBK set 1	Eenheid	A1	A2	A3	A1-A3	A4	A5	B1	C1	C2	C3	C4	D	Totaal
MKI	Euro	5,207E+0	2,084E+0	2,116E+1	2,845E+1	2,385E+0	1,206E-1	9,260E-2	1,006E-2	4,369E-1	2,574E-2	1,130E-3	-2,441E+1	7,116E+0
ADPE	kg Sb-eq	4,157E-4	2,747E-5	2,936E-4	7,368E-4	4,039E-5	6,459E-7	0	2,549E-8	1,044E-5	1,568E-7	9,038E-9	-6,334E-4	1,550E-4
ADPF	kg Sb-eq	2,137E-1	1,203E-1	2,271E+0	2,605E+0	1,644E-1	1,318E-3	0	5,232E-4	2,744E-2	1,762E-3	1,173E-4	-2,231E+0	5,688E-1
GWP	kg CO_2-eq	2,992E+1	1,747E+1	2,615E+2	3,089E+2	2,065E+1	1,291E+0	0	7,557E-2	3,667E+0	2,458E-1	8,029E-3	-2,647E+2	7,010E+1
ODP	kg CFC-11-eq	2,732E-6	2,922E-6	3,289E-5	3,855E-5	4,145E-6	1,279E-7	0	1,370E-8	6,847E-7	2,855E-8	2,895E-9	-3,302E-5	1,054E-5
POCP	kg ethene-eq	2,741E-2	1,036E-2	5,884E-2	9,661E-2	1,310E-2	5,081E-4	0	7,657E-5	2,175E-3	1,408E-4	8,740E-6	-8,306E-2	2,956E-2
AP	kg SO_2-eq	1,845E-1	1,049E-1	7,104E-1	9,998E-1	5,469E-2	3,953E-3	0	5,733E-4	1,589E-2	1,225E-3	6,053E-5	-8,585E-1	2,177E-1
EP	kg PO_4^{3-}-eq	3,554E-2	2,271E-2	6,009E-2	1,183E-1	8,969E-3	9,395E-4	0	1,290E-4	3,204E-3	2,768E-4	1,145E-5	-1,018E-1	3,006E-2
HTP	kg 1,4-DB-eq	2,700E+1	5,455E+0	4,150E+1	7,395E+1	9,838E+0	2,996E-1	2,130E-1	2,722E-2	1,503E+0	5,633E-2	3,491E-3	-6,351E+1	2,238E+1
FAETP	kg 1,4-DB-eq	7,030E-1	1,499E-1	2,614E-1	1,114E+0	2,653E-1	1,031E-2	2,832E-1	3,794E-4	4,367E-2	9,643E-4	8,455E-5	-9,567E-1	7,615E-1
MAETP	kg 1,4-DB-eq	9,864E+2	5,022E+2	4,610E+3	6,099E+3	1,046E+3	3,219E+1	3,034E+2	1,280E+0	1,557E+2	3,563E+0	2,963E-1	-5,232E+3	2,410E+3
TETP	kg 1,4-DB-eq	2,295E-1	2,221E-2	2,585E-1	5,102E-1	3,055E-2	7,884E-4	5,765E-1	4,505E-5	5,184E-3	7,127E-4	8,716E-6	-4,377E-1	6,863E-1
Milieu-impact	Eenheid	A1	A2	A3	A1-A3	A4	A5	B1	C1	C2	C3	C4	D	Totaal
GWP-total	kg CO2 eq	-6,024E+0	1,766E+1	2,652E+2	2,768E+2	2,085E+1	1,289E+0	0	7,639E-2	3,700E+0	2,507E-1	8,203E-3	-2,373E+2	6,566E+1
GWP-f	kg CO2 eq	3,037E+1	1,762E+1	2,644E+2	3,124E+2	2,083E+1	1,289E+0	0	7,637E-2	3,698E+0	2,484E-1	8,188E-3	-2,677E+2	7,080E+1
GWP-b	kg CO2 eq	-3,650E+1	2,675E-2	8,032E-1	-3,567E+1	1,075E-2	4,305E-4	0	1,260E-5	1,073E-3	2,215E-3	1,400E-5	3,050E+1	-5,159E+0
GWP-luluc	kg CO2 eq	1,033E-1	2,003E-2	1,177E-2	1,351E-1	5,464E-3	-5,259E-5	0	6,487E-6	1,099E-3	5,903E-5	2,213E-6	-1,162E-1	2,551E-2
ODP	kg CFC11 eq	3,140E-6	3,646E-6	3,744E-5	4,423E-5	5,205E-6	1,603E-7	0	1,725E-8	8,601E-7	3,398E-8	3,646E-9	-3,788E-5	1,263E-5
AP	mol H+ eq	2,398E-1	1,440E-1	8,596E-1	1,243E+0	6,725E-2	5,542E-3	0	8,005E-4	2,114E-2	1,715E-3	7,943E-5	-1,068E+0	2,721E-1
EP-fw	kg P eq	3,497E-3	3,006E-4	4,863E-4	4,284E-3	2,826E-4	-1,014E-6	0	5,833E-7	5,552E-5	1,040E-5	1,442E-7	-3,702E-3	9,300E-4
EP-m	kg N eq	5,667E-2	5,740E-2	1,682E-1	2,822E-1	1,388E-2	2,462E-3	0	3,470E-4	7,415E-3	6,193E-4	2,605E-5	-2,426E-1	6,437E-2
EP-T	mol N eq	7,069E-1	6,360E-1	1,834E+0	3,176E+0	1,579E-1	2,689E-2	0	3,813E-3	8,209E-2	7,470E-3	2,887E-4	-2,731E+0	7,235E-1
POCP	kg NMVOC eq	1,893E-1	1,677E-1	5,386E-1	8,956E-1	6,174E-2	7,372E-3	0	1,048E-3	2,334E-2	1,858E-3	8,406E-5	-7,699E-1	2,211E-1
ADP-mm	kg Sb eq	4,152E-4	2,747E-5	2,936E-4	7,363E-4	4,039E-5	6,459E-7	0	2,549E-8	1,044E-5	1,568E-7	9,037E-9	-6,330E-4	1,549E-4
ADP-f	MJ	4,241E+2	2,515E+2	4,211E+3	4,886E+3	3,450E+2	4,043E+0	0	1,105E+0	5,735E+1	3,466E+0	2,467E-1	-4,186E+3	1,112E+3
WDP	m3 depriv.	1,984E+1	2,506E+0	1,080E+1	3,315E+1	2,863E+0	-4,634E+0	0	6,335E-3	4,503E-1	6,860E-2	1,101E-2	-3,746E+1	-5,542E+0
PM	disease inc.	3,620E-6	9,271E-7	5,009E-6	9,556E-6	1,820E-6	1,326E-7	0	2,094E-8	3,348E-7	3,526E-8	1,485E-9	-8,249E-6	3,652E-6
IR	kBq U-235 eq	1,440E+0	1,096E+0	2,071E+0	4,607E+0	1,488E+0	4,764E-2	0	4,760E-3	2,438E-1	1,181E-2	1,021E-3	-3,972E+0	2,432E+0
ETP-fw	CTUe	7,712E+2	1,835E+2	4,377E+2	1,392E+3	2,403E+2	1,716E+1	1,047E+0	6,244E-1	4,115E+1	2,487E+0	1,460E-1	-1,202E+3	4,930E+2
HTP-c	CTUh	5,804E-8	7,642E-9	2,969E-8	9,537E-8	6,181E-9	3,620E-10	1,447E-8	2,148E-11	1,560E-9	6,265E-11	3,208E-12	-8,200E-8	3,603E-8
HTP-nc	CTUh	9,121E-7	1,819E-7	5,692E-7	1,663E-6	2,861E-7	8,744E-9	1,416E-6	5,441E-10	5,237E-8	1,682E-9	1,035E-10	-1,435E-6	1,993E-6
SQP	Pt	3,120E+3	1,923E+2	9,443E+1	3,407E+3	3,843E+2	2,975E+0	0	1,399E-1	4,777E+1	6,581E-1	4,712E-1	-2,923E+3	9,202E+2

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DECLARATION OF ENVIRONMENTAL INDICATORS

Current Environmental Product Declarations (EPDs)

- Voluntary
- Already available in the market
- Possibility of average EPDs: “group EPDs”, “industry/sector EPDs”
- Program operators are responsible for the accuracy of the EPD publication
- Contains table with environmental indicators according to EN 15804

Future declaration of environmental indicators in DoPCs

- **Mandatory** (as part of the DoPC and CE marking)
- Gradually implemented by **construction product family**
- Third-party-verification: a Notified Body will verify the manufacturer’s assessment, validate the process and verify the methodology used **(Assessment and Verification System 3+)**
- Contains table with environmental indicators according to **EN 15804**
- Part of a **digital product passport system**

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DIGITAL PRODUCT PASSPORT

DPP in line with the ESPR requirements

CPR:

- *The Digital Product Passport shall be connected through data carriers (e.g. bar codes, QR codes) which are part of the CE marking*
- *Easy digital access to product information for users and other stakeholders, e.g. authorities*
- *Improve traceability of products along the value chain*

- DPP is a structured, standardized way to share product information
- Includes DoPC, general information, instructions for use and safety information, etc.
- The DPP will be an addition to our CE label
  - Less printed information needed, i.e. content of declared properties of DoP doesn't have to be repeated on CE label
- Detailed information not yet available (delegated act)

Example of current DoP

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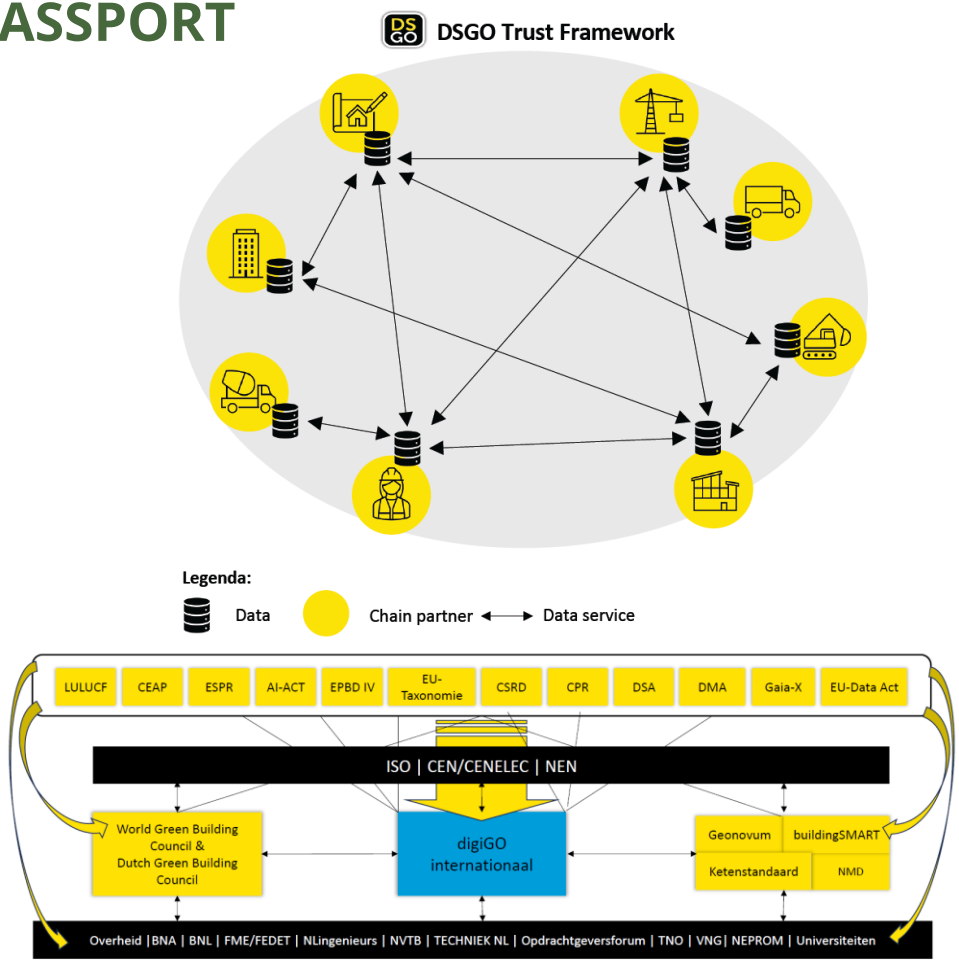
ENABLEMENT DIGITAL PRODUCT PASSPORT

Data space to enable DPP:

- To enable the EU regulation and the Digital Product Passport, a data space for the built environment is necessary
- NL initiative digiGO provides the DSGO framework (Digitaal Stelsel Gebouwde Omgeving)
- DSGO: federated ecosystem in which valid data can be securely shared within uniform agreements
- Collective ambition of all NL building associations
- Wienerberger is an active partner within digiGO/DSGO in order to provide relevant product data services

digiGO international perspective:

- Aligned with international regulation & standards



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REUSED PRODUCTS

- ***CPR:***
  - *"[…] it is important that all harmonised technical specifications are explicit in whether they cover or exclude used products from their scope."*
  - *"Such harmonised technical specifications should be applicable to used products and as long as the used product is not waste or has ceased to be waste."*
  - *"[…] Products directly re-used in a construction work should not be considered as placed on the market again and therefore not be subject to any measures under this Regulation."*

- Reuse is relevant for wienerberger (e.g. roof tiles, façade elements)
- Same reliability of declared characteristics of reused products compared to new products is key → **level playing field, safety of buildings**
- **Challenge:** the requirements in the standards for reused products have to be clear (Factory production control, Assessment and Verification System,…)

BEDANKT VOOR UW AANDACHT !

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