

Result summary

# Durabella Seamless Terrazzo

Duracryl International BV

Calculation number:	ReTHiNK-70423
Generation on:	15-04-2024
Issue date:	15-04-2024
Valid until:	15-04-2029
Status:	verified

ReTHiNK



# 1 General information

## 1.1 PRODUCT

Durabella Seamless Terrazzo

## 1.2 VALIDITY

Issue date: 15-04-2024

Valid until: 15-04-2029

## 1.3 OWNER OF THE DECLARATION



Manufacturer: Duracryl International BV

Address: Elandstraat 91, 2901 BK Capelle aan den IJssel

E-mail: info@duracryl.com

Website: www.duracryl.com

Production location: Duracryl international BV

Address production location: elandstraat 91, 2901BK Capelle aan den IJssel

## 1.4 VERIFICATION OF THE DECLARATION

The independent verification is in accordance with the ISO 14025:2011. The LCA is in compliance with ISO 14040:2006 and ISO 14044:2006. The EN 15804:2012+A2:2019 serves as the core PCR.

Internal  External

Pien van den Heuvel SO.sustainability, So. Sustainability

## 1.5 PRODUCT CATEGORY RULES

EN15804+A2:2019

## 1.6 FUNCTIONAL UNIT

m2

One square meter of Durabella Seamless Terrazzo with a thickness of 10mm. Included are production (A1-A3) of the product, assembly in the project (A4 and A5) and necessary maintenance (B2). Also including the end-of-life scenario (C1-C4) and Module D. The modules B1, B3, B4, B5, B6 and B7 are not applicable and are set equal to 0. As prescribed in EN15804+A2 module A4 is declared for 1 km and module B2 is declared for 1 year.

Calculation is made in accordance with EN15804+A2.

reference\_unit: square meter (m2)

## 1.7 CONVERSION FACTORS

Description	Value	Unit
reference_unit	1	m2
weight_per_reference_unit	20.802	kg
Conversion factor to 1 kg	0.048073	m2

## 1.8 SCOPE OF DECLARATION AND SYSTEM BOUNDARIES

This is a Cradle to gate with options, modules C1-C4 and module D LCA. The life cycle stages included are as shown below:

(X = module included, ND = module not declared)

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	ND	X	ND	ND	ND	ND	ND	X	X	X	X	X

The modules of the EN15804 contain the following:

## 1 General information

Module A1 = Raw material supply	Module B5 = Refurbishment
Module A2 = Transport	Module B6 = Operational energy use
Module A3 = Manufacturing	Module B7 = Operational water use
Module A4 = Transport	Module C1 = De-construction / Demolition
Module A5 = Construction - Installation process	Module C2 = Transport
Module B1 = Use	Module C3 = Waste Processing
Module B2 = Maintenance	Module C4 = Disposal
Module B3 = Repair	Module D = Benefits and loads beyond the product system boundaries

Module B4 = Replacement

### 1.9 COMPARABILITY

In principle, a comparison or assessment of the environmental impacts of different products is only possible if they have been prepared in accordance with EN 15804. For the evaluation of the comparability, the following aspects have to be considered in particular: PCR used, functional or declared unit, geographical reference, the definition of the system boundary, declared modules, data selection (primary or secondary data, background database, data quality), scenarios used for use and disposal phases, and the life cycle inventory (data collection, calculation methods, allocations, validity period). PCRs and general program instructions of different EPDs programs may differ. Comparability needs to be evaluated. For further guidance, see EN 15804+A2 (5.3 Comparability of EPD for construction products) and ISO 14025 (6.7.2 Requirements for comparability).

## 2 Product

### 2.1 PRODUCT DESCRIPTION

Durabella is made out of various components based on a special modified binder, marble aggregates and/or natural stones. Durabella Biopolymer is made from castor oil and is Red List Free. Durabella is a flexible terrazzo and has a 40% better sound absorption compared to traditional terrazzo.

Included in this EPD is the full Durabella system. This consists of primer, scratchcoat, Durabella, prefinish and finish. Both a textured finish and standard finish are covered by this EPD.

The lifespan of the product is set at 50 years and is based on the "SBR levensdurengids" for stone type flooring.

The weight of this system is approx. 20 kg / m2 (4.1 lbs / sq ft).

The Durabella system complies with the "Healthy Materials Lab by Parsons School of Design" Low Embodied Carbon definition. Having maximum 5 kgs of CO2 equiv. per sqm.

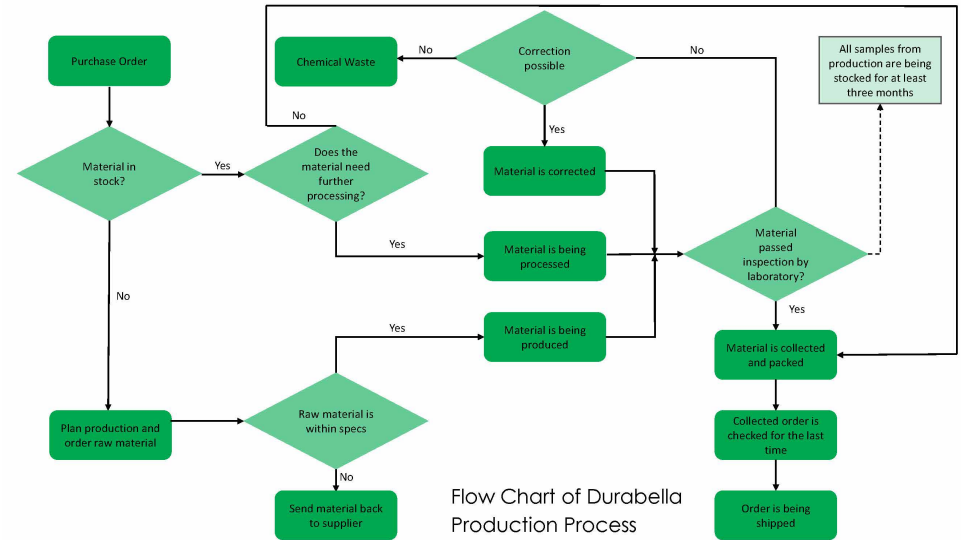
### 2.2 APPLICATION (INTENDED USE OF THE PRODUCT)

Durabella Seamless Terrazzo is an aesthetic, seamless, wear-resistant finish for areas with heavy traffic. Suitable for both new construction and renovation (6-15mm) project. Durabella is therefore often used in public buildings such as shopping malls, hotels, receptions, restaurants, convention centers, airports, banks, offices, hospitals, entrance halls, stations, public areas, etc.

### 2.3 DESCRIPTION PRODUCTION PROCESS

The Biopolymer is made by combining different ingredients in large tubs. By mixing these ingredients the components are produced and prepared for transport.

For this production only electricity is required for mixing ingredients.



### 2.4 CONSTRUCTION DESCRIPTION

For each layer the components are mixed on site and applied by either a roller or trowel (dependent on which layer is being installed). Every layer is made with the same binder. For the Durabella layer this is mixed with marble aggregates to give an authentic terrazzo look.

For this only an electric hand mixer is used on site.



## 2 Product



### 3 Results

#### 3.1 ENVIRONMENTAL IMPACT INDICATORS PER SQUARE METER

##### CORE ENVIRONMENTAL IMPACT INDICATORS EN15804+A2

Abbreviation	Unit	A1	A2	A3	A4	A5	B2	C1	C2	C3	C4	D	Total
AP	mol H+ eqv.	1.01E-1	3.87E-4	9.14E-4	1.63E-5	5.23E-3	8.93E-4	7.59E-5	8.22E-4	2.10E-4	1.04E-5	-1.64E-4	1.10E-1
GWP-total	kg CO2 eqv.	1.36E+0	6.68E-2	1.96E-1	2.81E-3	1.73E-1	1.58E-1	3.28E-2	1.42E-1	3.37E-2	1.10E-3	-4.82E-2	2.12E+0
GWP-b	kg CO2 eqv.	-6.76E+0	3.08E-5	-1.26E-3	1.30E-6	-3.38E-1	5.53E-3	3.56E-4	6.54E-5	1.94E-4	2.16E-6	-1.04E-4	-7.10E+0
GWP-f	kg CO2 eqv.	8.10E+0	6.67E-2	1.97E-1	2.81E-3	5.10E-1	1.52E-1	3.25E-2	1.42E-1	3.35E-2	1.10E-3	-4.81E-2	9.19E+0
GWP-luluc	kg CO2 eqv.	1.51E-2	2.44E-5	1.29E-4	1.03E-6	7.72E-4	7.37E-5	9.59E-6	5.19E-5	6.38E-6	3.06E-7	-2.13E-5	1.61E-2
EP-m	kg N eqv.	3.87E-2	1.36E-4	2.15E-4	5.75E-6	1.99E-3	7.17E-4	1.63E-5	2.90E-4	8.36E-5	3.58E-6	-4.63E-5	4.21E-2
EP-fw	kg P eqv.	2.86E-3	6.73E-7	6.60E-6	2.84E-8	1.44E-4	2.58E-5	1.85E-6	1.43E-6	1.04E-6	1.23E-8	-7.50E-7	3.05E-3
EP-T	mol N eqv.	3.35E-3	1.50E-3	2.40E-3	6.34E-5	7.27E-4	2.81E-3	2.00E-4	3.19E-3	9.29E-4	3.95E-5	-5.33E-4	1.47E-2
ODP	kg CFC 11 eqv.	6.20E-6	1.47E-8	2.21E-8	6.21E-10	3.17E-7	2.50E-8	1.57E-9	3.13E-8	4.35E-9	4.51E-10	-5.46E-9	6.61E-6
POCP	kg NMVOC eqv.	2.78E-2	4.29E-4	7.47E-4	1.81E-5	1.55E-3	8.42E-4	4.94E-5	9.12E-4	2.53E-4	1.15E-5	-1.54E-4	3.25E-2
ADP-f	MJ	1.18E+2	1.01E+0	3.93E+0	4.24E-2	6.41E+0	2.95E+0	4.26E-1	2.14E+0	4.50E-1	3.06E-2	-7.67E-1	1.34E+2
ADP-mm	kg Sb-eqv.	3.67E-5	1.69E-6	1.42E-5	7.12E-8	2.95E-6	3.22E-6	1.31E-7	3.59E-6	9.45E-8	1.00E-8	-9.48E-7	6.17E-5
WDP	m3 world eqv.	1.90E+2	3.60E-3	6.80E-2	1.52E-4	9.53E+0	1.47E-1	3.27E-3	7.65E-3	2.04E-3	1.37E-3	-2.69E-1	2.00E+2

**AP**=Acidification (AP) | **GWP-total**=Global warming potential (GWP-total) | **GWP-b**=Global warming potential - Biogenic (GWP-b) | **GWP-f**=Global warming potential - Fossil (GWP-f) | **GWP-luluc**=Global warming potential - Land use and land use change (GWP-luluc) | **EP-m**=Eutrophication marine (EP-m) | **EP-fw**=Eutrophication, freshwater (EP-fw) | **EP-T**=Eutrophication, terrestrial (EP-T) | **ODP**=Ozone depletion (ODP) | **POCP**=Photochemical ozone formation - human health (POCP) | **ADP-f**=Resource use, fossils (ADP-f) | **ADP-mm**=Resource use, minerals and metals (ADP-mm) | **WDP**=Water use (WDP)

### 3 Results

#### ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS EN15084+A2

Abbreviation	Unit	A1	A2	A3	A4	A5	B2	C1	C2	C3	C4	D	Total
ETP-fw	CTUe	3.52E-1	8.97E-1	3.11E+0	3.78E-2	1.38E+0	1.18E+1	4.33E-1	1.91E+0	3.65E-1	1.99E-2	-4.11E-1	1.99E+1
PM	disease incidence	1.10E-9	6.00E-9	8.85E-9	2.53E-10	2.07E-9	1.20E-8	2.49E-10	1.28E-8	4.63E-9	2.02E-10	-2.43E-9	4.57E-8
HTP-c	CTUh	2.71E-11	2.91E-11	8.71E-11	1.23E-12	2.69E-11	2.29E-10	7.43E-12	6.18E-11	8.65E-12	4.60E-13	-1.61E-11	4.62E-10
HTP-nc	CTUh	9.80E-10	9.82E-10	2.23E-9	4.14E-11	6.83E-10	4.67E-9	2.42E-10	2.09E-9	2.45E-10	1.41E-11	-4.26E-10	1.17E-8
IR	kBq U235 eqv.	9.14E-4	4.22E-3	1.07E-2	1.78E-4	1.76E-3	7.83E-3	8.81E-4	8.96E-3	1.43E-3	1.26E-4	-1.13E-3	3.59E-2
SQP	Pt	5.73E+1	8.73E-1	1.29E+0	3.68E-2	3.12E+0	1.40E+0	8.76E-2	1.85E+0	7.51E-2	6.42E-2	-3.07E-1	6.58E+1

ETP-fw=Ecotoxicity, freshwater (ETP-fw) | PM=Particulate Matter (PM) | HTP-c=Human toxicity, cancer (HTP-c) | HTP-nc=Human toxicity, non-cancer (HTP-nc) | IR=Ionising radiation, human health (IR) | SQP=Land use (SQP)

#### CLASSIFICATION OF DISCLAIMERS TO THE DECLARATION OF CORE AND ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS

ILCD classification	Indicator	Disclaimer
ILCD type / level 1	Global warming potential (GWP)	None
	Depletion potential of the stratospheric ozone layer (ODP)	None
	Potential incidence of disease due to PM emissions (PM)	None
	AAcidification potential, Accumulated Exceedance (AP)	None
ILCD type / level 2	Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater)	None
	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	None
	Formation potential of tropospheric ozone (POCP)	None
ILCD type / level 3	Potential Human exposure efficiency relative to U235 (IRP)	1
	Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)	2
	Abiotic depletion potential for fossil resources (ADP-fossil)	2
	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	2
	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2

### 3 Results

ILCD classification	Indicator	Disclaimer
	Potential Comparative Toxic Unit for humans (HTP-c)	2
	Potential Comparative Toxic Unit for humans (HTP-nc)	2
	Potential Soil quality index (SQP)	2

**Disclaimer 1** – This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

**Disclaimer 2** – The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

### 3.2 INDICATORS DESCRIBING RESOURCE USE AND ENVIRONMENTAL INFORMATION BASED ON LIFE CYCLE INVENTORY (LCI)

#### PARAMETERS DESCRIBING RESOURCE USE

Abbreviation	Unit	A1	A2	A3	A4	A5	B2	C1	C2	C3	C4	D	Total
PERE	MJ	1.06E+2	1.26E-2	2.06E-1	5.31E-4	5.32E+0	7.19E-2	4.59E-2	2.68E-2	2.56E-2	2.48E-4	-1.83E-2	1.12E+2
PERM	MJ	6.32E+1	0.00E+0	0.00E+0	0.00E+0	3.16E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.64E+1
PERT	MJ	1.69E+2	1.26E-2	2.06E-1	5.31E-4	8.50E+0	7.19E-2	4.59E-2	2.68E-2	2.56E-2	2.48E-4	-1.83E-2	1.78E+2
PENRE	MJ	5.98E+1	1.07E+0	3.47E+0	4.50E-2	3.51E+0	3.14E+0	4.56E-1	2.27E+0	4.80E-1	3.25E-2	-7.89E-1	7.35E+1
PENRM	MJ	5.84E+1	0.00E+0	7.34E-1	0.00E+0	2.96E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-4.78E-2	6.20E+1
PENRT	MJ	1.18E+2	1.07E+0	4.21E+0	4.50E-2	6.47E+0	3.14E+0	4.56E-1	2.27E+0	4.80E-1	3.25E-2	-8.37E-1	1.36E+2
SM	Kg	1.64E+1	0.00E+0	0.00E+0	0.00E+0	8.20E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.72E+1
RSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
NRSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	M3	6.48E+0	1.23E-4	2.11E-3	5.17E-6	3.24E-1	3.79E-3	2.61E-4	2.60E-4	1.50E-4	3.27E-5	-6.26E-3	6.80E+0

**PERE**=renewable primary energy ex. raw materials | **PERM**=renewable primary energy used as raw materials | **PERT**=renewable primary energy total | **PENRE**=non-renewable primary energy ex. raw materials | **PENRM**=non-renewable primary energy used as raw materials | **PENRT**=non-renewable primary energy total | **SM**=use of secondary material | **RSF**=use of renewable secondary fuels | **NRSF**=use of non-renewable secondary fuels | **FW**=use of net fresh water



### 3 Results

#### OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

Abbreviation	Unit	A1	A2	A3	A4	A5	B2	C1	C2	C3	C4	D	Total
HWD	Kg	4.49E-5	2.55E-6	4.71E-6	1.07E-7	3.12E-6	7.24E-6	3.28E-7	5.42E-6	7.85E-7	4.58E-8	-1.05E-6	6.82E-5
NHWD	Kg	5.48E-1	6.38E-2	6.21E-2	2.69E-3	5.97E-2	9.69E-2	1.26E-3	1.36E-1	6.27E-2	2.08E-1	-2.75E-3	1.24E+0
RWD	Kg	2.73E-3	6.61E-6	1.21E-5	2.78E-7	1.39E-4	1.07E-5	8.81E-7	1.40E-5	2.02E-6	2.01E-7	-1.27E-6	2.91E-3

HWD=hazardous waste disposed | NHWD=non hazardous waste disposed | RWD=radioactive waste disposed

#### ENVIRONMENTAL INFORMATION DESCRIBING OUTPUT FLOWS

Abbreviation	Unit	A1	A2	A3	A4	A5	B2	C1	C2	C3	C4	D	Total
CRU	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.03E+0	0.00E+0	0.00E+0	0.00E+0	2.06E+1	0.00E+0	0.00E+0	2.16E+1
MER	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EET	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.03E-1	2.03E-1
EEE	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.18E-1	1.18E-1

CRU=Components for re-use | MFR=Materials for recycling | MER=Materials for energy recovery | EET=Exported Energy Thermic | EEE=Exported Energy Electric

## 3 Results




### 3.3 INFORMATION ON BIOGENIC CARBON CONTENT PER SQUARE METER

#### BIOGENIC CARBON CONTENT

The following Information describes the biogenic carbon content in (the main parts of) the product at the factory gate per square meter:

Biogenic carbon content	Amount	Unit
Biogenic carbon content in the product	0	kg C
Biogenic carbon content in accompanying packaging	0	kg C

## 4 Contact information

Publisher	Operator	Owner of declaration
 <b>Duracryl International BV</b> Elandstraat 91 2901 BK Capelle aan den IJssel, NL  <b>E-mail:</b> info@duracryl.com <b>Website:</b> www.duracryl.com	 <b>Stichting NMD</b> Visseringlaan 22b 2288 ER Rijswijk, NL  <b>E-mail:</b> info@milieudatabase.nl <b>Website:</b> www.milieudatabase.nl	 <b>Duracryl International BV</b> Elandstraat 91 2901 BK Capelle aan den IJssel, NL  <b>E-mail:</b> info@duracryl.com <b>Website:</b> www.duracryl.com