# Environmental Product Declaration according to ISO 14025 and EN 15804



This declaration is for:

**Dulux Trade Diamond Matt** 

Provided by:

**AkzoNobel Decorative Paints** 





program operator
Stichting MRPI®
publisher
Stichting MRPI®
www.mrpi.nl

MRPI® registration
1.1.00370.2022
date of first issue
04-09-2017
date of this issue
11-11-2022
expiry date
11-11-2027









# **COMPANY INFORMATION**



AkzoNobel Decorative Paints Wexham Road SL2 5DS Slough, England 0333 222 70 70

https://www.akzonobel.com



# **PRODUCT**

**Dulux Trade Diamond Matt** 



#### **DECLARED UNIT/FUNCTIONAL UNIT**

All impacts are calculated using the declared unit "decoration of 1 m<sup>2</sup> of surface"



# **DESCRIPTION OF PRODUCT**

Dulux Trade Diamond Matt is a tough and cleanable emulsion with a smooth, even matt finish



# **VISUAL PRODUCT**





1.1.00370.2022

DATE OF ISSUE

11-11-2022

**EXPIRY DATE** 

11-11-2027



# **MORE INFORMATION**

https://www.duluxtradepaintexpert.co.uk/en/products/dulux-trade-diamond-matt

This MRPI®-EPD certificate is verified by ing. Kamiel Jansen, Aveco de Bondt.

The LCA study has been done by Mart van Assem & Jur Remeijn, Ecomatters.

The certificate is based on an LCA-dossier according to ISO14025 and EN15804+A2. It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'. EPDs of construction products may not be comparable if they do not comply with EN15804+A2. Declaration of SVHC that are listed on the 'Candidate List of Substances of Very High Concern for authorisation' when content exceeds the limits for registration with ECHA.



# **PROGRAM OPERATOR**

**SCOPE OF DECLARATION** 

Stichting MRPI® Kingsfordweg 151 1043GR Amsterdam



ir. J-P den Hollander, Managing director MRPI®

# DEMONSTRATION OF VERIFICATION

CEN standard EN15804 serves as the core PCR[a]

Independent verification of the declaration and data,

according to EN ISO 14025:2010:

internal:

external: X

Third party verifier:

ing. Kamiel Jansen, Aveco de Bondt

[a] PCR = Product Category Rules







#### **DETAILED PRODUCT DESCRIPTION**

Dulux Trade Diamond Matt is a tough and cleanable emulsion with a smooth, even matt finish. It contains Anti-Fade Technology\* to protect colour pigment from damage for truly long lasting colour\*\* and beautiful results. It's perfect for busy environments that require frequent cleaning as it contains unique Stain Repellent Technology, preventing stains from setting in to the surface and making cleaning up easier. It also protects against common scuffs and achieves Class 1 ISO 11998 and Type C BS 7719 scrub ratings, meaning walls withstand daily wear and tear and the finished job looks freshly painted for longer.

# \*Anti-Fade technology in Magnolia and tinting bases only

\*\* All coloured paints will show signs of fading over time as a result of UV and pollutant exposure, with different colours fading at different rates. Diamond with Anti-Fade technology will slow down the effects of this exposure, prolonging the life of your colour

# Typical Use

Suitable for interior use on all normal interior wall and ceiling surfaces, especially those subject to high traffic.

# Application Method

Brush, roller, conventional spray or airless spray. As with other water-based paints, do not apply in temperatures below 8°C (as recommended by British Standard BS 6150).

#### Pack Size

The products are packed in packaging with a capacity of 2,5L, 5L and 10L.

# Production process and conditions of delivery

During paint production, the raw materials are pre-weighed according to the percentage of each in the formulation. The pigment is then dispersed in a mixture of binder and solvent using a variety of machines. The amount and type of dispersion is product specific and depends on the type of finish required. Finally, tinter is added to correct the colour, the paint is thinned to viscosity, filtered and filled into the appropriate packaging container. All paint containers are transported from the production sites to a distribution center and finally to the customers in the UK.



COMPONENT >1% of total mass	[kg / %]
Pigments	Confidential
Binder	Confidential
Water	Confidential









The type of this EPD is Cradle-to-Gate with options. All major steps from the extraction of natural resources to the final disposal of the product are included in the environmental performance of the manufacturing phase, except those that are not relevant to the environmental performance of the product. This declaration does not imply an indicator result of zero.

This EPD is representative for products produced in the UK and EU. The paint is produced in Stowmarket, UK & Cork, Ireland and the application market is for customers in the UK. Likewise, for the end-of-life, the fate of the paint product is described within an UK and EU context.

The software GaBi 10.5.1.124 Professional is used to perform the LCA. In the model Ecoinvent 3.8 database was used.

The validity of this EPD is in correspondence with the specifications of the LCA project report.

All impacts associated with the upstream production of materials and energy are included in the system boundaries. Mining activities and controlled landfills are included in the product systems. The emissions and resource extractions derived from these processes are considered elementary exchanges between the product systems and the environment.

PROD	UCT ST	AGE	CONST	RUCTION			US	SE ST	AGE			E	ND O	F LIFE		BENEFITS AND
			PRO	CESS									STA	GE		LOADS BEYOND THE
			ST.	AGE												SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport gate to site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse- Recovery- Recycling- potential
A1	A2	<b>A3</b>	A4	A5	B1	B2	В3	B4	B5	B6	B7	C1	C2	C3	C4	D
х	х	х	x	х	x	х	Х	х	х	х	х	х	х	х	х	х

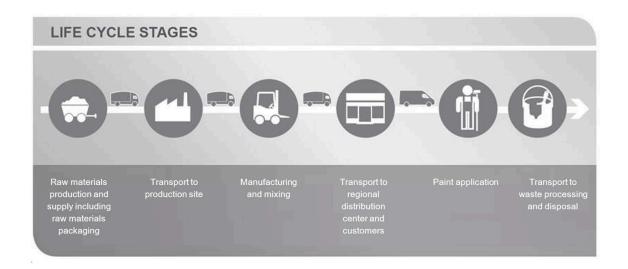
X = Modules Assessed

ND = Not Declared









LCA process diagram according to EN 15804 (7.2.1)



# **REPRESENTATIVENESS**

This EPD is representative for the 7 paint products belonging to the Dulux Trade Diamond Matt:

- 1. Dulux Trade Diamond Matt Light Base
- 2. Dulux Trade Diamond Matt Medium Base
- 3. Dulux Trade Diamond Matt Extra Deep Base
- 4. Dulux Trade Diamond Matt Pure Brilliant White
- 5. Dulux Trade Diamond Matt Magnolia
- 6. Dulux Trade Diamond Matt Light & Space Lumitec bas
- 7. Dulux Trade Diamond Matt Light & Space Absolute White

This EPD is representative for the products manufactured in the UK & Ireland and sold in the UK. The paint is produced at two production sites: Stowmarket, UK & Cork, Ireland







# **ENVIRONMENTAL IMPACT** per functional unit or declared unit (core indicators A2)

	UNIT	A1	A2	А3	A1-A3	A4	A5	В1	B2	В3	В4	В5	В6	В7	C1	C2	С3	C4	D
GWP-total	kg CO2 eq.	2.75	5.65	1.72	2.98	5.64	1.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.26	0.00	5.08	0.00
	g 0 0 2 0 q.	E-1	E-3	E-2	É-1	E-3	E-2	0.00		0.00	0.00	0.00	0.00	0.00		E-3	0.00	E-2	0.00
GWP-fossil	kg CO2 eq.	2.75	5.63	3.62	3.16	5.62	1.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.00	5.08	0.00
		E-1	E-3	E-2	E-1	E-3	E-2									E-3		E-2	ļ
GWP-biogenic	kg CO2 eq.	-2.06	2.04	-1.91	-1.92	2.05	4.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.57	0.00	8.29	0.00
		E-4	E-5	E-2	E-2	E-5	E-3									E-6		E-6	<b></b>
GWP-luluc	kg CO2 eq.	7.68	2.13	1.81	7.88	2.10	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.68	0.00	9.17	0.00
		E-4	E-6	E-5	E-4	E-6	E-7									E-7		E-7	
ODP	kg CFC11 eq.	2.40	1.35	5.19	2.59	1.35	8.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.01	0.00	3.71	0.00
		E-8	E-9	E-10	E-8	E-9	E-11									E-10		E-10	
AP	mol H+ eq.	1.98	3.02	1.27	2.14	2.86	4.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.36	0.00	1.19	0.00
		E-3	E-5	E-4	E-3	E-5	E-6									E-6		E-5	<b></b>
EP-freshwater	kg PO4 eq.	5.25 E-5	3.52	1.39 E-6	5.43 E-5	3.53	1.43 E-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.86 E-8	0.00	1.41 E-7	0.00
			E-7			E-7 9.82										2.19		4.61	-
EP-marine	kg N eq.	2.89 E-4	1.02 E-5	2.81 E-5	3.27 E-4	9.82 E-6	2.82 E-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.19 E-6	0.00	4.61 E-6	0.00
		2.91	1.11	2.93	3.32	1.07	1.55									2.39		5.05	
EP-terrestrial	mol N eq.	E-3	E-4	E-4	E-3	E-4	E-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	E-5	0.00	E-5	0.00
		1.00	3.31	8.96	1.13	3.20	1.14									7.14		1.37	
POCP	kg NMVOC eq.	E-3	E-5	E-5	E-3	E-5	E-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	E-6	0.00	E-5	0.00
ADP-mineral		5.45	1.30	5.99	6.18	1.30	1.43									2.89		3.19	
s & metals	kg Sb eq.	E-7	E-8	E-8	E-7	E-8	E-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	E-9	0.00	E-9	0.00
ADP-fossil	MJ, net	4.41	8.86	5.03	5.00	8.86	7.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97	0.00	2.73	0.00
ADP-IUSSII	calorific value	E+0	E-2	E-1	E+0	E-2	E-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	E-2	0.00	E-2	0.00
WDP	m3 world eq.	8.93	4.49	7.80	8.94	4.51	1.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	0.00	1.20	0.00
VVDF	deprived	E+0	E-4	E-3	E+0	E-4	E-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	E-4	0.00	E-3	0.00

GWP-total = Global Warming Potential total

GWP-fossil = Global Warming Potential fossil fuels

GWP-biogenic = Global Warming Potential biogenic

GWP-luluc = Global Warming Potential land use and land use change

ODP = Depletion potential of the stratospheric ozone layer

AP = Acidification Potential, Accumulated Exceedence

EP-freshwater = Eutrophication Potential, fraction of nutrients reaching freshwater end compartment

EP-marine = Eutrophication Potential, fraction of nutrients reaching marine end compartment

EP-terrestrial = Eutrophication Potential, Accumulated Exceedence

POCP = Formation potential of tropospheric ozone photochemical oxidants

ADP-minerals&metals = Abiotic Depletion Potential for non fossil resources [2]

ADP-fossil = Abiotic Depletion for fossil resources potential [2]

WDP = Water (user) deprivation potential, deprivation-weighted water consumption [2]

#### 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 experience with the indicator.







# **ENVIRONMENTAL IMPACT** per functional unit or declared unit (additional indicators A2)

	UNIT	A1	A2	А3	A1-A3	A4	A5	B1	B2	ВЗ	B4	B5	В6	В7	C1	C2	СЗ	C4	D
PM	Disease	2.48	5.19	1.56	2.69	5.22	5.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16	0.00	1.82	0.00
FIVI	incidence	E-8	E-10	E-9	E-8	E-10	E-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	E-10	0.00	E-10	0.00
IRP	kBq U235 eq.	2.14	4.46	7.91	2.27	4.47	3.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.95	0.00	1.14	0.00
IIXF	KBQ 0233 eq.	E-2	E-4	E-4	E-2	E-4	E-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	E-5	0.00	E-4	0.00
ETP-fw	CTUe	2.17	7.14	1.56	2.19	7.15	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59	0.00	2.78	0.00
E I F-IW	Croe	E+1	E-2	E-1	E+1	E-2	E+0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	E-2	0.00	E-2	0.00
HTP-c	CTUh	4.47	1.93	3.60	4.85	1.91	7.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.25	0.00	6.46	0.00
HIP-C	Cron	E-10	E-12	E-11	E-10	E-12	E-12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	E-13	0.00	E-11	0.00
HTP-nc	CTUh	3.69	6.52	3.46	3.73	6.55	6.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46	0.00	2.05	0.00
HIP-IIC	Cion	E-8	E-11	E-10	E-8	E-11	E-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	E-11	0.00	E-10	0.00
SQP		7.11	1.00	1.56	2.37	1.01	9.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.25	0.00	4.89	0.00
SQP		E-1	E-1	E+0	E+0	E-1	E-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	E-2	0.00	E-2	0.00

PM = Potential incidence of disease due to PM emissions

IRP = Potential Human exposure efficiency relative to U235 [1]

ETP-fw = Potential Comparative Toxic Unit for ecosystems [2]

HTP-c = Potential Comparative Toxic Unit for humans [2]

HTP-nc = Potential Comparative Toxic Unit for humans, non-cancer [2]

SQP = Potential soil quality index [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 experience with the indicator.







# RESOURCE USE per functional unit or declared unit (A1 / A2)

	UNIT	A1	A2	А3	A1-A3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	C3	C4	D
PERE	MJ	1.36 E-1	1.12 E-3	2.36 E-1	3.73 E-1	1.13 E-3	3.51 E-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.51 E-4	0.00	3.18 E-4	0.00
PERM	MJ	1.18 E-4	5.69 E-10	1.41 E-3	1.53 E-3	5.26 E-10	2.24 E-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17 E-10	0.00	5.27 E-10	0.00
PERT	MJ	1.36 E-1	1.12 E-3	2.37 E-1	3.74 E-1	1.13 E-3	3.51 E-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.51 E-4	0.00	3.18 E-4	0.00
PENRE	MJ	4.41 E+0	8.86 E-2	5.03 E-1	5.00 E+0	8.86 E-2	7.39 E-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97 E-2	0.00	2.73 E-2	0.00
PENRM	MJ	1.46 E-6	0.00	1.65 E-8	1.47 E-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PENRT	MJ	4.41 E+0	8.86 E-2	5.04 E-1	5.00 E+0	8.87 E-2	7.39 E-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97 E-2	0.00	2.73 E-2	0.00
SM	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RSF	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NRSF	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FW	m3	2.08 E-1	1.05 E-5	1.89 E-4	2.08 E-1	1.05 E-5	2.98 E-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.34 E-6	0.00	2.80 E-5	0.00

PERE = Use of renewable energy excluding renewable primary energy resources

PERM = Use of renewable energy resources used as raw materials

PERT = Total use of renewable primary energy resources

PENRE = Use of non-renewable primary energy resources excluding non-renewable energy resources used as raw materials

PENRM = Use of non-renewable primary energy resources used as raw materials

PENRT = Total use of non-renewable primary energy resources

SM = Use of secondary materials

RSF = Use of renewable secondary fuels

NRSF = Use of non renewable secondary fuels

FW = Use of net fresh water

# OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit (A1 / A2)

	UNIT	A1	A2	А3	A1-A3	A4	A5	B1	B2	ВЗ	B4	B5	В6	В7	C1	C2	C3	C4	D
HWD	kg	0.00	0.00	8.38 E-5	8.38 E-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NHWD	kg	0.00	0.00	2.04 E-4	2.04 E-4	0.00	1.45 E-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74 E-1	0.00
RWD	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CRU	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MFR	kg	0.00	0.00	0.00	0.00	0.00	4.60 E-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MER	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EEE	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ETE	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

HWD = Hazardous Waste Disposed

RWD = Radioactive Waste Disposed

MFR = Materials for recycling

EEE = Exported Electrical Energy

NHWD = Non Hazardous Waste Disposed

CRU = Components for reuse

MER = Materials for energy recovery

ETE = Exported Thermal Energy







# **BIOGENIC CARBON CONTENT per functional unit or declared unit (A1 / A2)**

	UNIT	A1	A2	А3	A1-A3	A4	A5	В1	B2	ВЗ	B4	В5	В6	В7	C1	C2	C3	C4	D
BCCpr	kg C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ВССра	kg C	0.00	0.00	-2.95 E-3	-2.95 E-3	0.00	2.95 E-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

BCCpr = Biogenic carbon content in product
BCCpa = Biogenic carbon content in packaging



# **CALCULATION RULES**

#### Cut off criteria

The cut-off is considered in the raw material supply stage (A1). Cut-off of inputs comprises of the raw materials, for which no appropriate proxies were found. In this study there were no cut-off inputs. The energy consumed during application, used for instance in spray applicators, has not been included due to its insignificance. For recycling of waste packaging material (metal and plastic), a cut-off approach was followed. The cut-off point is chosen to be the end of waste treatment.

# Data quality and data collection period

Specific data was collected from AkzoNobel though a questionnaire, including inquiries about paint characteristics and packaging, logistics data (e.g. transport), production information and end-of-life. The data collection period for specific data was the year 2022.

Data gaps (i.e. transport data, end of life scenarios) were covered with data generic values for transport as described in the Product Environmental Footprint Category Rules - Decorative Paints document version 1.0 published by CEPE and reviewed in April 2018. Further data gaps (i.e. end-of-life transport data) were covered with data from internal AkzoNobel LCA studies concerning the same type of products (paints and coatings). Generic data (i.e. upstream acquisition and production of raw materials, energy generation, transport, waste treatment processes) was selected from Ecoinvent 3.8 database. In the case of missing data, a relevant proxy was searched and adjusted to the corresponding unit process.

# Allocation procedure

To allocate the emissions and inputs to the manufactured products, the decision-hierarchy in ISO 14044 is used (ISO 2006). It is not possible to sub-divide the site data into a more detailed level or find physical causalities between inputs and outputs, thus allocation is done based on mass, considering the annual production of paint product for each site. The paint production is basically a process of mixing ingredients and, therefore, the environmental impact is fairly to be related to the mass of the products.



Parameter	Unit	Value
VOC content	g/l	3.7
Density	kg/l	1.39054
Coverage	m2/l	16
Number of layers	Quantity	2
Total product used	kg/m2	0.174









#### SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

#### A1. Raw materials supply

This module considers the extraction and processing of all raw materials and energy which occur upstream to the Dulux Trade Diamond Matt manufacturing process, as well as waste processing up to the end-of waste state.

# A2. Transport of raw materials to manufacturer

This includes the transport distance of the raw materials to the manufacturing facility via road.

Site	Cork Iroland	Stowmarket,	Stowmarket,	Stowmarket,
Site	Cork, Ireland	UK	UK	UK
Vehicle type used for transport	Truck	Truck	Truck	Container Ship
Distance, km	460	233	115	35
Capacity	>32 t ,64%	>32 t, 60%	>32 t, 60%	70% payload
Capacity	payload	payload	payload	70% payload
Bulk density of transported products, kg/m3	1441 kg/m3	1441 kg/m3	1441 kg/m3	1441 kg/m3

# A3. Manufacturing

This module covers the manufacturing of the Dulux Trade Diamond Matt and includes all processes linked to production such as storing, mixing, packing and internal transportation. Use of electricity, fuels and auxiliary materials in paint production is taken into account as well.

Data regarding paint production was provided for the manufacturing sites where the Dulux Trade Diamond Matt is produced: Stowmarket, UK & Cork, Ireland. Furthermore, the specific transportation distances and transportation modes for raw materials, paint packaging and transportation to customer were collected from the AkzoNobel logistics department. Primary data and site-specific data were retrieved. For electricity sources (Cork: standard market mix, Ireland; Stowmarket: 100% renewable from wind, including transmission) the Ecoinvent 3.8 dataset was used. For upstream (raw material processes) and downstream processes (application, use, and waste processing) generic data is used when no specific data is obtained.

The construction site data includes lighting, heating, offices, etc. The manufacture of production equipment and infrastructure is not included in the system boundary.

#### A4. Transport to Regional Distribution Centre and customer

All paint containers are transported from the production facility into a distribution centre and then finally to the customer. On average, the transport characteristics for this life cycle stage are the following

Production site	Cork, Ireland	Cork, Ireland	Stowmarket, UK	Stowmarket, UK
	Transport from	Transport from	Transport from	Transport from
Coatings transport type	factory to RDC	RDC to PoS	factory to RDC	RDC to PoS
Transport Type	Truck	Truck	Truck	Truck
Distance (km)	783	227.2	142.4	200
Capacity (60% payload)	>32 t	>32 t	>32 t	>32 t
Bulk density of transported products	1441 kg/m3	1441 kg/m3	1441 kg/m3	1441 kg/m3







# A5. Application and use

This module includes the environmental aspects and impacts associated with the application and of the paint. It is assumed that no energy is required during the application of this paint. The use of paintbrushes and other appliances used during application are not included. There are some raw materials added in the paint formulations which contain small amounts of solvents. The VOC emissions during application of paint are included in this module.

# C2. Transport to incineration or landfill

This module includes one-way transportation distance of the demolition or sorting site to the dump site.

End-of-life transport type	Transport to waste processing
Vehicle type	Truck 34t-40t payload average fleet
Distance	80 km
Capacity utilisation	60%
Bulk density of transported products	1040 kg/m3

# C3. Waste processing and C4. Disposal

The end of life stage is encompassed in these modules. It is assumed that paint is used as interior paint and exterior paint. In both cases, it is assumed that part of the paint is lost during application and the rest is applied.

Classification of paint, based on function	% of sold paint to landfill	% of sold paint to incineration
Interior Masonry Wall	88%	12%
Exterior, Trim and other paints	88%	12%









#### **DECLARATION OF SVHC**

None of the substances contained in the product are listed in the "Candidate List of Substances of Very High Concern for authorisation", or they do not exceed the threshold with the European Chemicals Agency.



# **REFERENCES**

- EN 15804:2012+A2:2019 Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products, of 2019.
- ISO 14040/14044 on Life Cycle Assessments
- Product Environmental Footprint Category Rules Decorative Paints version 1.0, 2018. Developed by the Technical Secretariat Decorative Paints of the European Council of the Paint, Printing Ink and Artists' Colours Industry.
- Willener, Y, 2022. Personal communication with Yasmine Willener, Commercial Strategy & Planning Project Manager, Akzo Nobel Decorative Paints, UK.
- Thinkstep GaBi Software-System and Database for Life Cycle Engineering. Copyright 1992-2018 ThinkStep AG.
- Wernet, G., Bauer, C., Steubing, B., Reinhard, J., Moreno-Ruiz, E., and Weidema, B., 2016. The ecoinvent database version 3 (part I): overview and methodology. The International Journal of Life Cycle Assessment, [online] 21(9), pp.1218–1230. Available at: <a href="http://link.springer.com/10.1007/s11367-016-1087-8">http://link.springer.com/10.1007/s11367-016-1087-8</a> [Accessed 21 12 2021.]



**REMARKS** 

None

