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Local Operator: EPD Turkey

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ENVIRONMENTAL PRODUCT DECLARATION

Laminated PVC Profiles

IN ACCORDANCE WITH ISO 14025:2006
and EN 15804:2012 - A2:2021



An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com.

Programme Information

ISO standard ISO 21930 and CEN standard EN 15804 serves as the core Product Category Rules (PCR)

Product Category Rules (PCR):

2019:14 Version 1.2.5, 2024-12-20, Construction Products and CPC 54 Construction Services, EN 15804:2012 + A2:2019 Sustainability of Construction Works

PCR review was conducted by: The Technical Committee of the International EPD® System. Review chair: Claudia A. Peña, University of Concepción, Chile

EPDs within the same product category but registered in different EPD programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison.

Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

EPD verification by individual verifier

Third party verifier: Prof. Ing. Vladimír Kočí, Ph.D., MBA, LCA Studio Šárecká 5, 16000 Prague 6 - Czech Republic

Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third party verifier:

Yes No

Ege Profil Tic. ve San. A.S. has the sole ownership, liability, and responsibility for this EPD.

The International EPD®
System

EPD International AB
Box 210 60 SE-100 31
Stockholm, Sweden
www.environdec.com

EPD Turkey

www.epdturkey.org
info@epdturkey.org

managed and run by
SÜRATAM

www.suratam.org
Nef 09 B Blok No:7/15 34415
Kagithane/Istanbul, Turkey

About Ege Profil

Founded in 1981, Turkey's leading company in the PVC industry Ege Profil Tic. ve San. A.S., has made significant investments in Turkey and abroad with the power of its 42 years of experience.

Deceuninck NV, which is a worldwide integrated group, has gained expertise in the subjects of compound, design, development, extrusion, finishing and recycling. The Group summarizes its targets and its concept of quality & service with its passion for reaching perfection.

Since the year of 2001, Ege Profil has manifested a high performance and a continuous growth. In-depth market experience and the ensured personnel motivation represent important items behind this success. The company has a horizontal organization model and the management supports personnel at each level to use initiatives and to share authority & responsibilities.

Success is rendered inevitable by the training opportunities provided to employees, importance attached to R&D activities, the implemented quality possibilities and the large information sharing generated by the group.

The investment in the Menemen Plastic Specialization Organized Industrial Zone, which commenced in 2015 with an environmental-friendly process without conceding from world standards in terms of production quality, has been fully completed and commissioned in 2017. It has a total closed area of 86.258 m² over a land of total 110.000 m², which consists of 54.968 m² manufacturing plant, 8,995 m² administrative building and 22.295 m² logistics center. During the first stage, the plant has a capacity of 60.000 tons and its infrastructure allows reaching 100.000 tons. The Company manufactures at its own plant in Kartepe/Kocaeli that has a capacity of 41.490 tons in a 34.591 m² of closed area erected of 40.667,96 m² of land.

Countries in the continents of Europe, America, Asia, Africa and Australia are among those where importation and exportation are made.

Ege Profil increases its share in the global market with each passing day.

About Ege Profil

Our production plant has the Management Systems certificates below:

- ISO 9001 Quality Management System,
- ISO 14001 Environmental Management System
- ISO 45001 Occupational Health and Safety Management System
- ISO 50001 Energy Management System
- ISO/IEC 27001 Information Security Management System

Ege Profil R&D Center, approved by the Ministry of Industry and Technology in 2017, offers its customers innovative products for domestic and emerging markets on product development-innovation, to technology and process development activities.

With research and development activities, technically innovative products with outstanding energy saving features are designed and presented to the practitioners for windows, which are an important component of the building. In the projects carried out in the R&D center, starting with the production of the PVC profile and continuing until the assembly, the demands of the practitioners and users are transformed into innovative products through analysis and simulations and presented to the market.

According to EN 14351-1:2006+A2 window standard, the tests which are described below are performed in accredited Dec-TC / Deceuninck Test Center. Dec- TC is accredited by TURKAK.

Applicable to windows and doors at the Dec-TC Test Center;

- Air permeability - TS EN 1026
- Water tightness - TS EN 1027
- Wind load resistance - TS EN 12211
- Operating Force – TS EN 12046-1
- Load bearing capacity of safety devices - TS EN 14609, TS EN 948
- Thermal conductivity calculations - TS EN 10077-1, TS EN 10077-2

EN 14351-1:2006+A2 Windows and doors - Product standard, performance specifications - Part 1: Windows and exterior doors ready for pedestrian passage, according to the test methods defined in the harmonized standard, TURKAK accreditation is carried out within the scope of TS EN ISO IEC 17025.



About Product

Deceuninck has a wide product range that is launched in different marketing areas. There is a large variety of main profiles that meets all expectations. In addition, there is also a wide auxiliary profile group, to provide solutions for all types of architectural details.

The main profiles in the system are standard frames, sashes, mullions, and glazing beads. The sliding series have also a very common platform in the range. There are also sliding frames, and sashes according to applications.

The products which are produced in Deceuninck/Menemen plant are certificated by ATG, RAL, CSTB, TSE, KOMO, ICECON.



Color Options



Technical Specifications

Legend



Frame Width	80 mm
Number of Chambers	6
Air Tightness	Class 4
Water Tightness	E1650
Wind Load	C3/B3
U_f	0.92 W/m ² K
U_w ($U_g = 0.5$ W/m ² K)	0.78 W/m ² K

Legend Art



Frame Width	70 mm
Number of Chambers	5
Air Tightness	Class 4
Water Tightness	E1500
Wind Load	C2/B3
U_f	1.1 W/m ² K
U_w ($U_g = 0.6$ W/m ² K)	0.85 W/m ² K

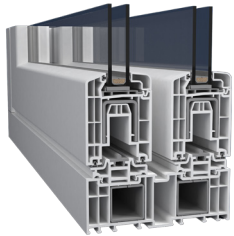
Everest Max



Frame Width	60 mm
Number of Chambers	4
Air Tightness	Class 4
Water Tightness	9A
Wind Load	C1/B2
U_f	1.4 W/m ² K
U_w ($U_g = 0.7$ W/m ² K)	1.0 W/m ² K

Technical Specifications

HS76 Lift and Slide



Glazing Thickness Options	4, 10, 14, 16, 20, 24, 28, 30, 32, 36, 40, 44 mm
Sash Width	76 mm
Number of Chambers	5
Frame Types	- (single type)

Legend Sliding



Glazing Thickness Options	24, 30, 36, 44, 52 mm
Sash Width	76 mm
Number of Chambers	5
Frame Types	- (single type)

Sliding



Glazing Thickness Options	4, 8, 16, 20, 24, 28 mm
Sash Width	48 mm
Number of Chambers	3
Frame Types	Sliding single rail, double rail, three rail frame profiles and frame with flyscreen, casing frame

Bella Sliding



Glazing Thickness Options	4, 6, 8, 20 mm
Sash Width	38 mm
Number of Chambers	2
Frame Types	Sliding single rail, double rail, three rail frame profiles and frame with flyscreen, casing frame

System Boundary

A1: Raw Material Supply

Production starts with raw materials, mainly locally sourced but some transported overseas. 'Raw material supply' also includes pre-treatment processes before the production, such as masterbatch preparation.

A2: Transportation

Transport is relevant for delivery of raw materials and other materials to the plant and the transport of materials within the plant. The transport distances and routes are calculated based on the given information from the manufacturer for 2022.

A3: Manufacturing

Production stages start with extrusion of PVC and continue with cooling, dragging and cutting for Laminated PVC Profiles and the process goes on as coating, cleaning, sleeving, drying and adhesion for Laminated PVC Profiles. Only electric energy is consumed during the manufacturing of PVC Profiles, no natural gas is consumed for the production.

A4: Transport

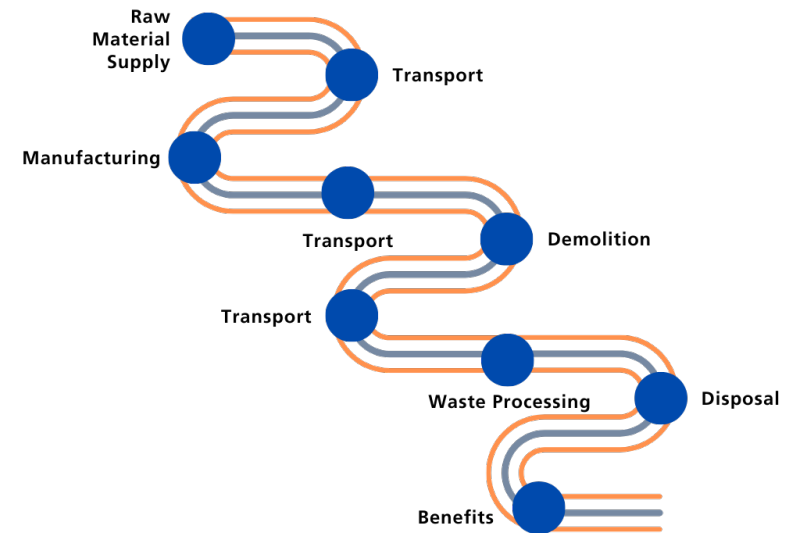
Transport of final product to customers are considered and the routes and distances are calculated accordingly. Transport routes were provided by the manufacturer for 2022.

C1: Demolition

Based on the information given by the manufacturer, no energy is used for the demolition of the considered product after it reaches end-of-life.

C2: Transport

This step includes the transport of materials after they reach their end-of-life. The average distance was assumed 25 km by truck from demolition site to a waste or recycling area.



C3: Waste Processing

It is assumed that the generated waste can be disposed of or recycled directly. Thus, no process is needed.

C4: Disposal

Considering the recycling rates in Türkiye and common practices, 10% of the PVC used in the product is assumed to be recycled and the rest of the PVC and other raw materials are assumed to be landfilled.

D: Future reuse, recycling or energy recovery potentials

The benefits of 10% recycled PVC in module C4 are considered and modelled in the LCA study.

LCA Information

Functional / Declared Unit

The declared unit is 1 kg of Laminated PVC Profile.

REACH Regulation

No substances included in the Candidate List of Substances of Very High Concern for authorization under the REACH regulations are present in this product either above the threshold for registration with the European Chemicals Agency or above 0.1% (wt/wt)

System Boundary

Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and A4 modules).

Cut-off Rules

1% cut-off is applied. Data for elementary flows to and from the product system contributing to a minimum of 99% of the declared environmental impacts have been included.

Background Data

For all LCA modelling and calculation, Ecoinvent database (v3.9.1) and SimaPro (v9.5) LCA software were used.

LCA Modelling, Calculation and Data Quality

The results of the LCA with the indicators as per EPD requirements are given in the LCA result tables. All energy calculations were obtained using Cumulative Energy Demand (LHV) methodology, while freshwater use is calculated with selected inventory flows in SimaPro according to the PCR. There are no co-product allocations within the LCA study underlying this EPD. The regional energy datasets were used for all energy calculations.

Period Under Review

The data used for LCA study concerns the year 2022.

Allocations

Energy consumption and raw material transportation were weighted according to 2022 production figures. In addition, hazardous and non-hazardous waste amounts were also allocated from the total waste generation in 2022.

LCA Information

	Product Stage			Construction Process Stage		Use Stage							End of Life Stage			Benefits and Loads	
	Raw Material Supply	Transport	Manufacturing	Transport	Construction Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction / Demolition	Transport	Waste Processing		Disposal
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules Declared	X	X	X	X	-	-	-	-	-	-	-	-	X	X	X	X	X
Geography	GLO	GLO	TR	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO
Specific Data Used	>90%					-	-	-	-	-	-	-	-	-	-	-	-
Variation - Products	0%					-	-	-	-	-	-	-	-	-	-	-	-
Variation - Sites	0%					-	-	-	-	-	-	-	-	-	-	-	-

(X = Module included)

LCA Results

Impact Category	Unit	A1-A3	A4	C1	C2	C3	C4	D
GWP - Fossil	kg CO ₂ eq	2.92	0.137	0	0.005	0.070	0.070	-0.188
GWP - Biogenic	kg CO ₂ eq	-0.108	2.61E-05	0	3.99E-06	0.001	0.193	-0.002
GWP - Luluc	kg CO ₂ eq	0.021	1.01E-04	0	2.44E-06	0.001	1.23E-05	-1.51E-04
GWP - Total	kg CO ₂ eq	2.83	0.138	0	0.005	0.071	0.264	-0.190
ODP	kg CFC-11 eq	9.00E-07	2.49E-09	0	1.14E-10	4.67E-10	3.01E-10	-1.06E-07
AP	mol H+ eq	0.016	0.002	0	1.75E-05	4.98E-04	1.09E-04	-0.001
*EP - Freshwater	kg P eq	0.001	7.37E-06	0	3.69E-07	7.99E-05	5.24E-06	-6.22E-05
EP - Marine	kg N eq	0.003	0.001	0	6.05E-06	8.34E-05	0.001	-1.47E-04
EP - Terrestrial	mol N eq	0.032	0.006	0	6.39E-05	0.001	3.80E-04	-0.001
POCP	kg NMVOC	0.011	0.002	0	2.72E-05	2.19E-04	1.94E-04	-0.001
ADPE	kg Sb eq	2.70E-05	2.55E-07	0	1.40E-08	7.47E-08	3.47E-08	-2.28E-6
ADPF	MJ	61.7	1.83	0	0.076	0.727	0.281	-5.02
WDP	m ³ depriv.	3.23	0.007	0	3.63E-04	0.039	0.011	-0.328
PM	disease inc.	1.40E-07	8.41E-09	0	5.25E-10	2.26E-09	1.96E-09	-6.42E-09
IR	kBq U-235 eq	0.284	0.002	0	9.58E-05	0.001	0.001	-0.030
ETP - FW	CTUe	32.1	1.78	0	0.073	0.396	6.89	-1.97
HTTP - C	CTUh	6.73E-09	1.27E-10	0	4.50E-12	2.98E-11	2.77E-11	-2.31E-10
HTTP - NC	CTUh	8.32E-08	1.86E-09	0	1.09E-10	1.21E-09	1.06E-09	-6.63E-09
SQP	Pt	21.5	0.981	0	0.077	0.072	0.592	-0.457
Acronyms	GWP-total: Climate change, GWP-fossil: Climate change- fossil, GWP-biogenic: Climate change - biogenic, GWP-luluc: Climate change - land use and transformation, ODP: Ozone layer depletion, AP: Acidification terrestrial and freshwater, EP-freshwater: Eutrophication freshwater, EP-marine: Eutrophication marine, EP-terrestrial: Eutrophication terrestrial, POCP: Photochemical oxidation, ADPE: Abiotic depletion - elements, ADPF: Abiotic depletion - fossil resources, WDP: Water scarcity, PM: Respiratory inorganics - particulate matter, IR: Ionising radiation, ETP-FW: Ecotoxicity freshwater, HTP-c: Cancer human health effects, HTP-nc: Non-cancer human health effects, SQP: Land use related impacts, soil quality.							
Legend	A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A4: Transport, C1: Deconstruction / demolition, C2: Transport, C3: Waste Processing, C4: Disposal, D: Future reuse. recycling or energy recovery potentials							
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.							

Resource use								
Impact Category	Unit	A1-A3	A4	C1	C2	C3	C4	D
PERE	MJ	9.34	0.032	0	0.002	0.251	0.021	-0.380
PERM	MJ	0	0	0	0	0	0	0
PERT	MJ	9.34	0.032	0	0.002	0.251	0.021	-0.380
PENRE	MJ	65.6	1.96	0	0.081	0.802	0.302	-5.31
PENRM	MJ	0	0	0	0	0	0	0
PENRT	MJ	65.6	1.96	0	0.081	0.802	0.302	-5.31
SM	kg	0.037	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0
FW	m ³	0.029	2.68E-04	0	1.51E-05	2.94E-04	2.91E-04	-0.001

Acronyms PERE: Use of renewable primary energy excluding resources used as raw materials, PERM: Use of renewable primary energy resources used as raw materials, PERT: Total use of renewable primary energy, PENRE: Use of non-renewable primary energy excluding 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, SM: Secondary material, RSF: Renewable secondary fuels, NRSF: Non-renewable secondary fuels, FW: Net use of fresh water.

Waste & Output Flows								
Impact Category	Unit	A1-A3	A4	C1	C2	C3	C4	D
HWD	kg	4.30	0	0	0	0	0	0
NHWD	kg	35.1	0	0	0	0	0	0
RWD	kg	0	0	0	0	0	0	0
CRU	kg	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	100	0	0
MER	kg	0	0	0	0	0	0	0
EE (Electrical)	MJ	0	0	0	0	0	0	0
EE (Thermal)	MJ	0	0	0	0	0	0	0

Acronyms HWD: Hazardous waste disposed, NHWD: Non-hazardous waste disposed, RWD: Radioactive waste disposed, CRU: Components for reuse, MFR: Material for recycling, MER: Materials for energy recovery, EE (Electrical): Exported energy electrical, EE (Thermal): Exported energy, Thermal.

Climate impact								
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
*GHG-GWP	kg CO ₂ eq	2.96	0.138	0	0.005	0.071	0.218	-0.189

GWP-GHG = Global Warming Potential total excl. biogenic carbon following IPCC AR5 methodology

* The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013

Legend A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A4: Transport, C1: Deconstruction / demolition, C2: Transport, C3: Waste Processing, C4: Disposal, D: Future reuse. recycling or energy recovery potentials

Glossary of Terms

Global Warming Potential, GWP	Global warming is a concept expressing warming of the atmosphere leading to climate change. One of the human activities which has the greatest effect on global warming is the burning of fossil fuels such as petroleum, coal and natural gas. In LCA, global warming is expressed in terms of the equivalent weight of carbon dioxide (CO ₂) emitted.
Ozone Depletion Potential, ODP	Ozone layer depletion is a concept expressing the reduction of ozone in the stratosphere and depletion of the ozone layer (the 'ozone hole') as a consequence of emissions of man-made resources such as CFCs, HCFCs, chlorine, bromine, etc. Damage to the ozone layer reduces its ability to prevent UV light entering the earth's atmosphere, increasing the amount of carcinogenic UVB light hitting the earth's surface. In LCA, ozone layer depletion is expressed in terms of the equivalent weight of CFC-11 emitted.
Acidification Potential, AP	Acidification is an impact category expressing the toxic impact that acidifying substances have on soil, underground water-courses, ground water, organisms, ecosystems and materials. Reaction of acidic gases with water in the atmosphere creates 'acid rain'. The formation of acid rains causes a reduction in biodiversity. In LCA, acidification is expressed in terms of the equivalent weight of sulphur dioxide (SO ₂) emitted.
Eutrophication Potential, EP	It is an abnormal proliferation of vegetation in the aquatic ecosystems caused by the addition of nutrients into rivers, lakes or ocean which determinates a lack of oxygen. The eutrophication potential is mainly influenced by emission into water of phosphates and nitrates. Its occurrence can lead to damage to ecosystems, increasing mortality of aquatic fauna and flora and to loss of species that are dependent on low-nutrient environments. In LCA, EP is expressed in mass of PO ₄ ³⁻ eq.
Formation potential of tropospheric ozone photochemical oxidants, POCP	POCP is the formation of reactive substances (mainly ozone) which are injurious to human health and ecosystems and which also may damage crops. This problem is also indicated with "summer smog". In LCA, POCP is expressed in kg C ₂ H ₄ eq.
Abiotic Depletion Potential, ADP	In LCA, resource depletion is one of the impact categories expressing how much of the world's natural resources (petroleum, iron ore, etc.) are used up. It has global, regional and local aspects of impact and expresses the amount of mineral/ fossil fuel used. In LCA, fossil and non-fossil resource depletion are expressed in terms of the MJ and Sb eq. respectively.

References

/ISO 9001:2015/ Quality Management Systems

/ISO 50001:2018/ Energy Management Systems

/GPI/ General Programme Instructions of the International EPD® System. Version 4.0.

/ISO 14020:2000/ Environmental Labels and Declarations — General principles

/EN 15804:2012+A2:2019/ Sustainability of construction works - Environmental Product Declarations — Core rules for the product category of construction products

/ISO 14025/ DIN EN ISO 14025:2009-11: Environmental labels and declarations - Type III environmental declarations — Principles and procedures

/ISO 14040/44/ DIN EN ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework (ISO 14040:2006) and Requirements and guidelines (ISO 14044:2006)

/PCR for Construction Products and Construction Services/ Prepared by IVL Swedish Environmental Research Institute, Swedish Environmental Protection Agency, SP Trä, Swedish Wood Preservation Institute, Swedisol, SCDA, Svenskt Limträ AB, SSAB, The International EPD System, 2019:14 Version 1.11 DATE 2019-12-20

/The International EPD® System/ The International EPD® System is a programme for type III environmental declarations, maintaining a system to verify and register EPD@s as well as keeping a library of EPD@s and PCRs in accordance with ISO 14025. www.environdec.com

/Ecoinvent / Ecoinvent Centre, www.ecoinvent.org

/SimaPro/ SimaPro LCA Software, Pré Consultants, the Netherlands, www.pre-sustainability.com

Contact

Programme

The International EPD® System
www.environdec.com

EPD International AB
Box 210 60
SE-100 31 Stockholm, Sweden

Programme operator

www.environdec.com
info@environdec.com



THE INTERNATIONAL EPD® SYSTEM

EPD registered through fully aligned regional programme:
EPD Turkey
www.epdturkey.org
info@epdturkey.org

SÜRATAM A.S.
Nef 09 B Blok No:7/15, 34415
Kagithane / Istanbul, TÜRKIYE
www.suratam.org



ENVIRONMENTAL PRODUCT DECLARATIONS

Owner of the declaration

EGE PROFİL
TİCARET VE SANAYİ A.Ş.

Ege Profil Tic. ve San. A.S.

Menemen Plastik İhtisas Organize Sanayi Bölgesi,
Atatürk Plastik O.S.B Mahallesi 5. Cadde No:4
Menemen-İZMİR, TÜRKIYE

export@deceuninck.com
www.egeprofil.com.tr

LCA practitioner and EPD Design



Turkey:
Nef 09 B Blok NO:7/46-47
34415 Kagithane/Istanbul, TÜRKIYE
+90 212 281 13 33

The United Kingdom:
4 Clear Water Place
Oxford OX2 7NL, UK
0 800 722 0185

www.metsims.com
info@metims.com

3rd party verifier



Prof. Ing. Vladimír Kočí, Ph. D., MBA

LCA Studio
Šárecká 1962/5, 160 00
Prague 6 - Czech Republic
www.lcastudio.cz

deceuninck