

SARAY®

ENVIRONMENTAL PRODUCT DECLARATION

In accordance
with ISO 14025 and EN 15804:2012+A2:2019 for

A2 Composite Panels

Programme:

The International EPD® System
www.environdec.com

Programme Operator:

EPD International AB

Local Operator:

EPD Turkey

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S-P-4080

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ENVIRONMENTAL PRODUCT DECLARATIONS



THE INTERNATIONAL EPD® SYSTEM

Programme Information

Programme

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Product Category Rules (PCR): 2019:14 Version 1.11, 2021-02-05, Construction Products and CPC 54 Construction Services, EN 15804:2012 + A2:2019 Sustainability of Construction Works

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

EPD process certification

EPD verification

Third party verifier: Prof. Vladimir Koci

Approved by: The International EPD® System

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

Yes

No

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804.

About the Company

Since 1980, Saray Aluminium has been playing a major role in the construction of future architectural buildings with its leading and innovative interior & exterior construction solutions.

Saray manufactures aluminium door&window, curtain wall (facade) and handrail systems, aluminium composite panel, PVC door&window systems, shutter systems, various types of industrial profiles for the sectors such as machinery, lighting, elevator etc. and standard section profiles in various shapes and sizes.

Saray is among the first Turkey's Top 200 Industrial Enterprises and exports %55 of total production more than 60 countries in Europe, Asia, Africa; with its high export amounts Saray receives the "Export Stars of Turkey" award in every year.

Saray Aluminium has CE, ISO 9001, ISO 14001 Qualanod, Qualicoat, TS EN 755, TS EN 12020, SEPRO and GOST-R quality certificates. Saray is a fully integrated enterprise with its aluminium powder coating, aluminium anodizing, extrusion, casting, aluminium composite panel and pvc extrusion, shutter production facilities. With a total of 100.000 sqm covered area, production facilities are located in Cerkezkoy/Tekirdag and Gunesli/Istanbul.



Product Information

LCA Study presented in this report assesses the potential environmental impacts of A2 Composite Panels during their life cycle from raw material supply to disposal.

Saray Al Composite Panels consist of mineral core bonded between two Aluminium panel sheets.

| Raw Material | % |
|------------------------------------|-------|
| Aluminium Sheet, kg/m ² | 20-30 |
| Mineral Filler, kg/m ² | 60-70 |
| Adhesive, kg/m ² | 0-5 |
| Others, kg/m ² | 0-5 |

Saray Al Composite Panels are very rigid and strong despite their light weight. Aluminium sheets are painted in any kind of colour, in PVDF or Polyester coatings, including a wide range of metallic and non-metallic colours as well as patterns that imitate other materials, such as wood or marble.

Applications of Saray Al Composite Panels are not limited to external building cladding, but can also be used in any form of cladding such as partitions, false ceilings etc. Al Composite Panels are also widely used within the signage industry as an alternative to heavier, more expensive substrates.

The UN CPC code of the product is 4299, fabricated metal products-Other fabricated metal.

Technical Specifications

| Propoerties | Unit | Value |
|----------------------|-------------------|-----------------|
| Thickness | mm | 4 |
| Weight | kg/m ² | 8.4 |
| Thermal Conductivity | W/mK | 0.056 |
| Core | | Mineral Filling |

LCA Informations

Declared Unit 1 m² of A2 Composite Panel

Time Representativeness 2020

Database(s) and LCA Software Used Ecoinvent 3.6, SimaPro 9.1

The inventory for the LCA study is based on the 2020 production figures for Aluminium Composite Panel by SARAY production plants in Çerkezköy, Turkey.

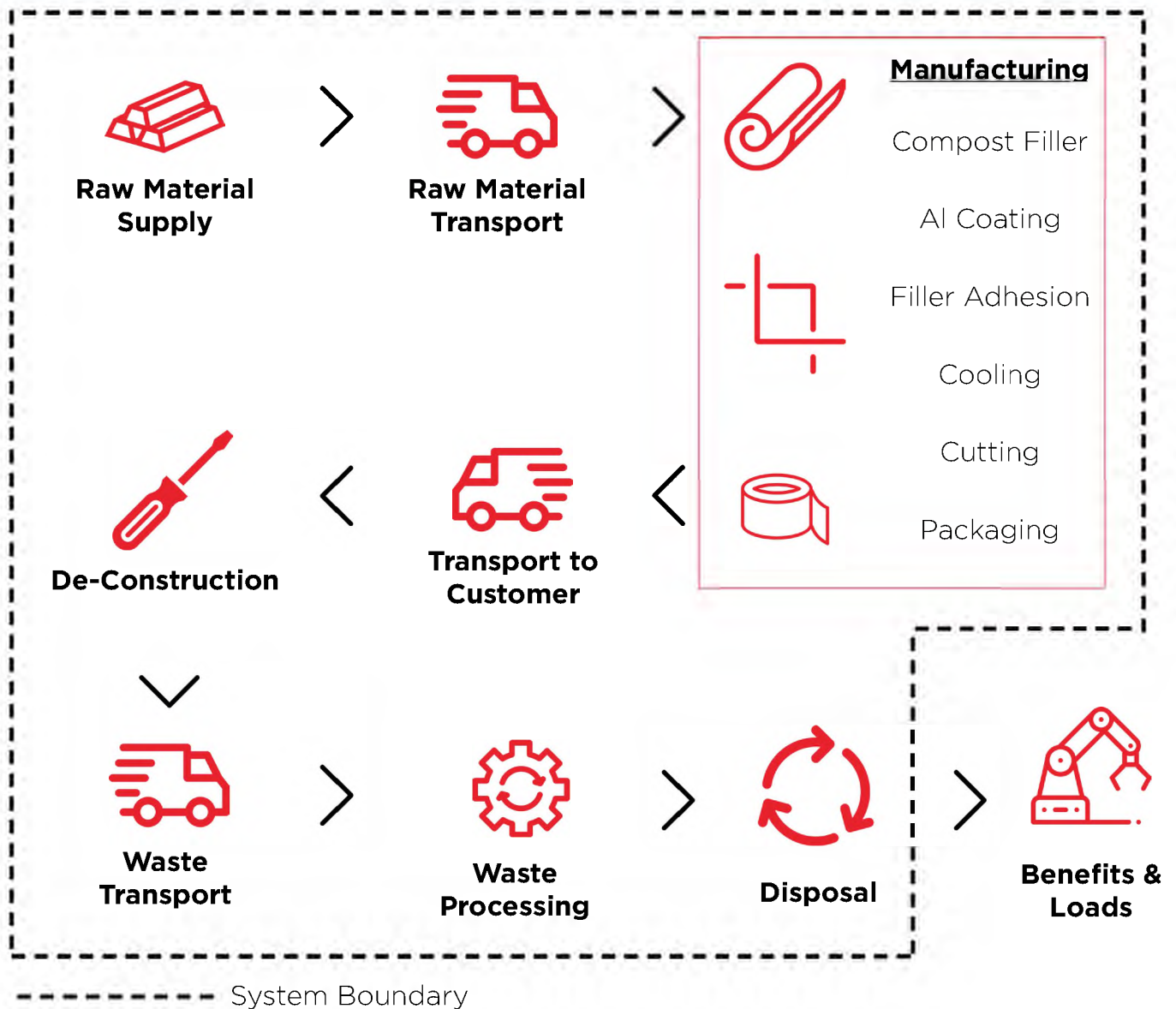
This EPD's system boundary is cradle to grave. The results of the LCA with the indicators as per EPD requirement are given in the following tables for product manufacture (A1, A2, A3), construction process stage (A4), end of life stage (C1, C2, C3, C4) and benefits and load stage (D).

The system boundaries in tabular form for all modules are shown in the table above.

| 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 | Future reuse, recycling or energy recovery potentials |
| A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
| X | X | X | X | ND | ND | ND | ND | ND | ND | ND | ND | X | X | X | X | X |

X = Included in LCA, ND = Not Declared

System Boundary



A1: Raw Material Supply

Production for each product starts with mainly locally sourced but some transported from other parts of the world. 'Raw material supply' includes raw material extraction and pretreatment processes before production.

A2: Raw Material Transport

Transport is relevant for delivery of raw materials and other materials to the plant and the transport of materials within the plant. Transport of raw materials to production site is taken as the weight average values for transport from raw materials supplier in 2020.

A3: Manufacturing

Panel production begins with coating of the aluminium sheets that form the panels and to be placed onto top and bottom layers. Mineral core or organic polymer additives are mixed up at certain percentages and the composed core is inserted into between two aluminium sheets with a particular amount of adhesive in order to laminate the panel layers. Electricity and natural gas are consumed during the manufacturing of Aluminium Composite Panels.

A4: Transport to Customer

Transport of final product to construction site is taken as the weight average values for transport to customers in 2020. The product shipment distance is calculated according to the domestic and international sales rates over the assumed distances. It has been accepted as an average of 500 km by road for domestic and 2000 km by sea for abroad.

C1 : Deconstruction and Demolition

For deconstruction stage, 0.239 MJ electricity use per kg of material was assumed (Gervasio et al., 2018).

C2 : Transport

This stage includes the transportation of the discarded conductors to final disposal. Average distance from demolition site to waste processing site for final disposal is assumed to be 100 km.

C3 : Waste Processing

Wastes can be recycled directly or disposed of according to different scenarios. No process is needed.

C4 : Disposal

Assumed that about 25 per cent of the panels is sent to the landfill for their final fate and this is modelled as such in the LCA.

D : Benefits and Loads

Assumed that 5 per cent of the used aluminium is collected and to be delivered to the recycling processes and this is modelled as such in the LCA.

More Information

Allocations

Water consumption, energy consumption and raw material transportation were weighted according to 2020 production figures.

In addition, hazardous and non-hazardous waste amounts were also allocated from the 2020 total waste generation.

Cut-Off Criteria

1% cut-off 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.

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).

LCA Modelling, Calculation and Data Quality

The results of the LCA with the indicators as per EPD requirement are given in the LCA result tables. All energy calculations were obtained using Cumulative Energy Demand (LHV) methodology, while fresh water 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 SimaPro 9.1 LCA software and the Ecoinvent 3.6 LCA database were used to calculate the environmental impacts. The regional energy datasets were used for all energy calculations.

Geographical Scope

The geographical scope of this EPD is global.



LCA Results

Environmental Impacts

| Impact Category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|------------------|---|---------|----------|----------|----------|----|-----------|----------|
| GWP - Fossil | kg CO ₂ eq | 35.0 | 0.249 | 0.338 | 75.4E-3 | 0 | 115E-3 | -12.2 |
| GWP - Biogenic | kg CO ₂ eq | 0.076 | 84.7E-6 | 0.003 | 6.60E-6 | 0 | 4.51E-4 | -0.023 |
| GWP - Luluc | kg CO ₂ eq | 0.453 | 113.6E-6 | 0.003 | 2.65E-6 | 0 | 1.86E-6 | -248E-3 |
| GWP - Total | kg CO ₂ eq | 35.6 | 0.249 | 0.045 | 0.009 | 0 | 0.002 | -12.4 |
| ODP | kg CFC-11 eq | 3.32E-6 | 56.7E-9 | 9.56E-9 | 2.14E-9 | 0 | 227E-12 | -950E-9 |
| AP | mol H+ eq | 0.275 | 0.004 | 0.002 | 28.0E-6 | 0 | 13.4E-6 | -0.097 |
| EP - Freshwater | kg P eq | 0.012 | 15.0E-6 | 357E-6 | 5.57E-6 | 0 | 3.19E-5 | -0.004 |
| *EP - Freshwater | kg PO ₄ eq | 0.037 | 45.8E-6 | 1.09E-3 | 1.71E-5 | 0 | 9.75E-5 | -0.013 |
| EP - Marine | kg N eq | 0.037 | 891E-6 | 362E-6 | 54.2E-6 | 0 | 0.003 | -0.012 |
| EP - Terrestrial | mol N eq | 0.417 | 9.88E-3 | 3.28E-3 | 5.93E-4 | 0 | 0.001 | -0.128 |
| POCP | kg NMVOC | 0.121 | 0.003 | 898E-6 | 233E-6 | 0 | 647E-6 | -0.043 |
| ADPE | kg Sb eq | 1.67E-3 | 3.41E-6 | 815E-9 | 1.34E-6 | 0 | 406E-9 | -55.9E-6 |
| ADPF | MJ | 360 | 3.70 | 3.72 | 1.23 | 0 | 0.846 | -116 |
| WDP | m ³ depriv. | 15.9 | 0.010 | 0.158 | 0.004 | 0 | 0.026 | -3.10 |
| PM | disease inc. | 2.98E-6 | 16.3E-9 | 9.50E-9 | 6.63E-9 | 0 | 5.35E-9 | -1.18E-6 |
| IR | kBq U-235 eq | 3.20 | 0.018 | 0.005 | 0.006 | 0 | 0.005 | -1.31 |
| ETP - FW | CTUe | 1040 | 2.76 | 3.26 | 0.975 | 0 | 377 | -357 |
| HTTP - C | CTUh | 75.5E-9 | 103E-12 | 59.8E-12 | 23.7E-12 | 0 | 168.3E-12 | -35.4E-9 |
| HTTP - NC | CTUh | 1.21E-6 | 2.86E-9 | 107E-11 | 123E-12 | 0 | 289E-11 | -514E-9 |
| SQP | Pt | 97.3 | 2.97 | 0.214 | 1.40 | 0 | 1.33 | -20.7 |
| 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, A1-A3: Sum of A1, A2, and A3, A4: Transport to Site, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary. | | | | | | | |
| 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. | | | | | | | |
| *Disclaimer 3 | EP-freshwater: This indicator has been calculated as "kg P eq" as required in the characterization model. (EUTREND model, Struijs et al, 2009b, as implemented in ReCiPe; http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml) | | | | | | | |

Resource Use

| Impact Category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|-----------------|---|-------|--------|-------|--------|----|--------|--------|
| PERE | MJ | 166 | 0.039 | 0.890 | 0.015 | 0 | 0.042 | -87.3 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 166 | 0.039 | 0.890 | 0.015 | 0 | 0.042 | -87.3 |
| PENRE | MJ | 361 | 3.70 | 3.72 | 1.23 | 0 | 0.846 | -116 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 361 | 3.70 | 3.72 | 1.23 | 0 | 0.846 | -116 |
| SM | kg | 0 | 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 | 0.223 | 627E-6 | 0.001 | 255E-6 | 0 | 737E-6 | -0.067 |
| 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. | | | | | | | |
| Legend | A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A1-A3: Sum of A1, A2, and A3, A4: Transport to Site, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary. | | | | | | | |

Output Flows

| Impact Category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|-----------------|--|-------|----|----|----|----|----|---|
| HWD | kg | 0.109 | 0 | 0 | 0 | 0 | 0 | 0 |
| NHWD | kg | 0.512 | 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 | 0 | 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. | | | | | | | |
| Legend | A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A1-A3: Sum of A1, A2, and A3, A4: Transport to Site, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary. | | | | | | | |

References

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

/EN ISO 9001/ Quality Management Systems - Requirements

/EN ISO 14001/ Environmental Management Systems - Requirements

/EN ISO 50001/ Energy Management Systems - Requirements

/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 (ISO14040:2006) and Requirements and guidelines (ISO 14044:2006)

/PCR for Construction Products and CPC 54 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

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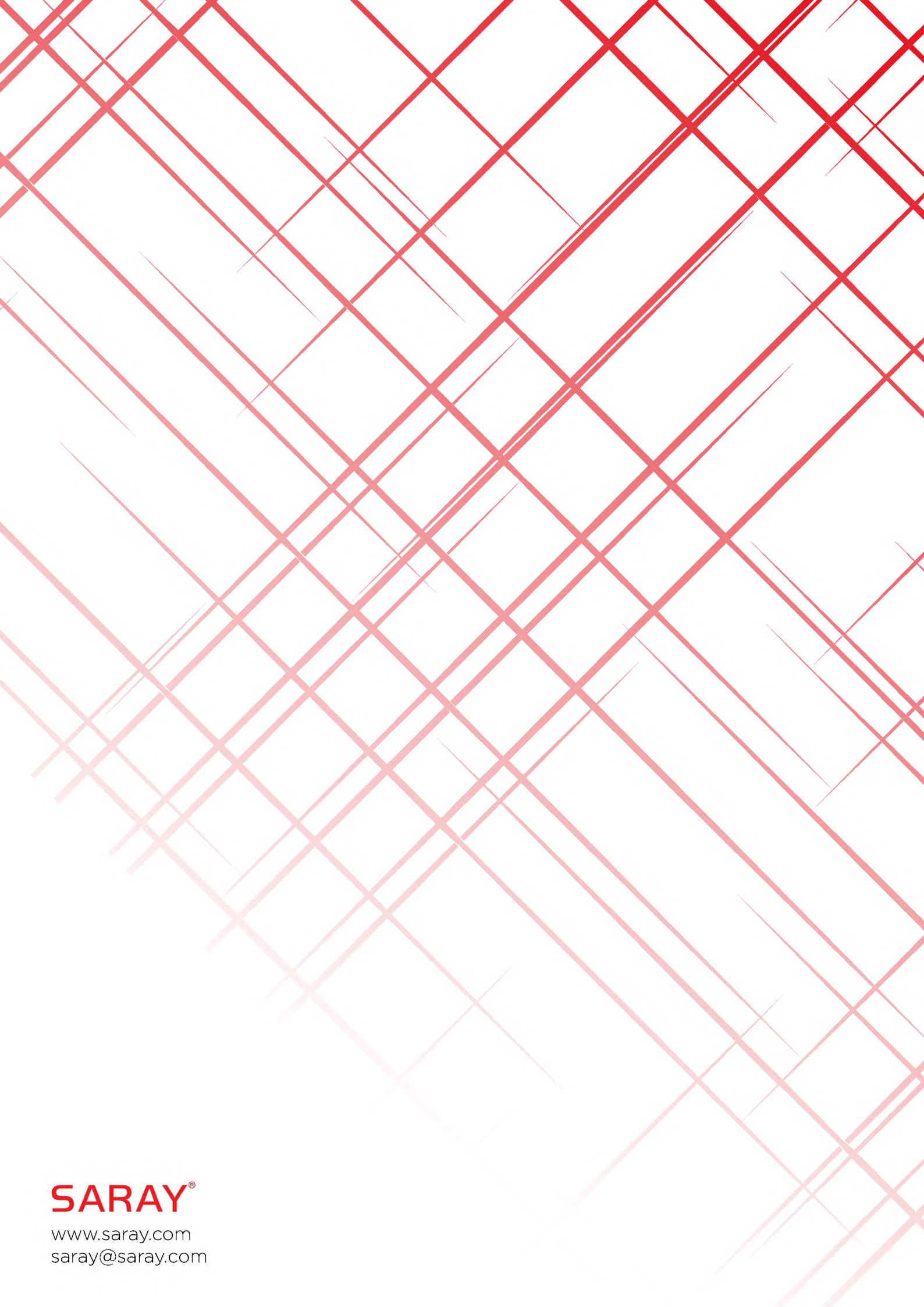
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SARAY®

ENVIRONMENTAL PRODUCT DECLARATION

In accordance
with ISO 14025 and EN 15804:2012+A2:2019 for

Aluminium Profiles

Programme:

The International EPD® System
www.environdec.com

Programme Operator:

EPD International AB

Local Operator:

EPD Turkey

S-P Code:

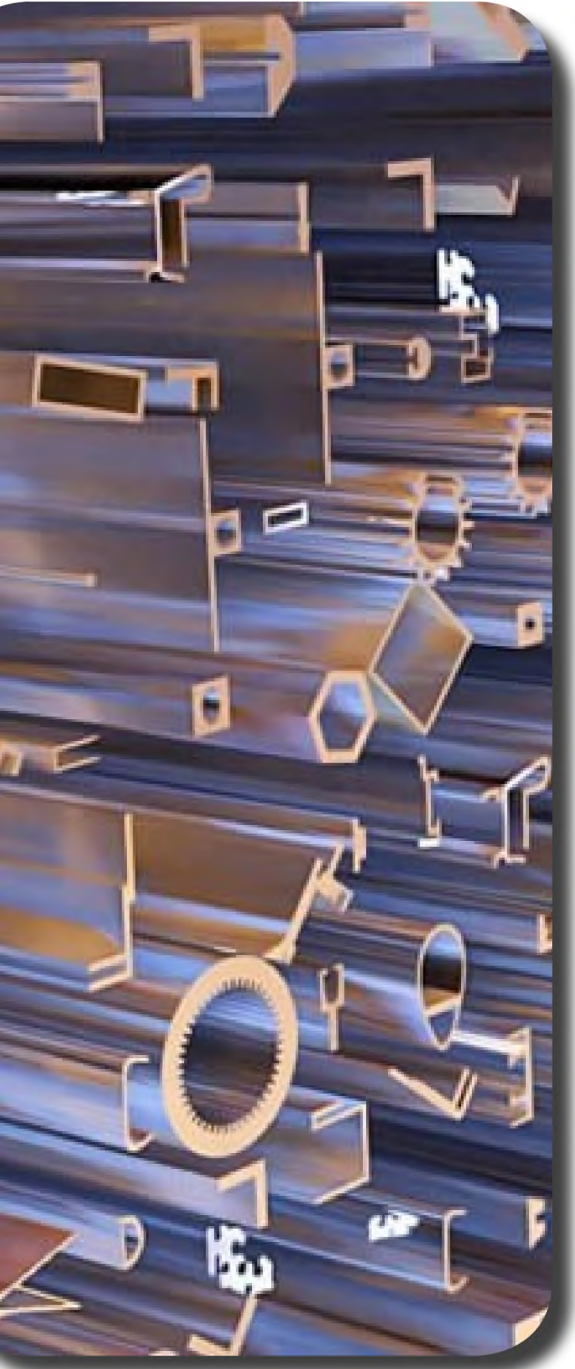
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TURKEY EPD®

ENVIRONMENTAL PRODUCT DECLARATIONS

EPD®

THE INTERNATIONAL EPD® SYSTEM

Programme Information

Programme

EPD Turkey, managed and run by:

SÜRATAM
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Research & Design, www.suratam.org

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Third party verifier: Prof. Vladimir Koci

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Saray Aluminium has CE, ISO 9001, ISO 14001 Qualanod, Qualicoat, TS EN 755, TS EN 12020, SEPRO and GOST-R quality certificates. Saray is a fully integrated enterprise with its aluminium powder coating, aluminium anodizing, extrusion, casting, aluminium composite panel and pvc extrusion, shutter production facilities. With a total of 100.000 sqm covered area, production facilities are located in Cerkezkoy/Tekirdag and Gunesli/Istanbul.



Product Information

Aluminium Profiles are mainly made of 99.7% purity of raw aluminium blocks. Aluminium profiles can be produced as standard or custom design.

All products groups may also contain other raw materials such as silicon, magnesium etc..

Saray products are also certified to local and international standards. Saray is an integrated enterprise with its with foundry, casting, extrusion anodizing and powder coating facilities.

Saray can operate in profile production of architectural systems as well as industrial profiles, automotive profiles, machinery-manufacturing profiles, heating and cooling profiles, ship and aircraft industries.

The UN CPC code of the product is 42532, bars, rods and profiles, of aluminium.

| Raw Material | % |
|--------------------------|-------|
| Aluminium Ingot, kg | 90-99 |
| Magnesium, kg | 0-3 |
| Silicon, kg | 0-3 |
| Agents and chemicals, kg | 2-7 |

Technical Specifications

| Propoerties | Unit | Value |
|----------------------|---------------------|-------------|
| Density | gr/cm ³ | 2.5 - 2.7 |
| Melting Range | °C | 585 - 650 |
| Thermal Conductivity | W/mK | 200 - 220 |
| Thermal Expansion | 10 ⁻⁶ /K | 23.2 - 23.4 |
| Elastic Modulus | MPa | 69500 |
| Modulus of Rapture | MPa | 26100 |

LCA Informations

Declared Unit 1 kg of Aluminium Profile

Time Representativeness 2020

Database(s) and LCA Software Used Ecoinvent 3.6, SimaPro 9.1

The inventory for the LCA study is based on the 2020 production figures for Aluminium Profile by SARAY production plants in Çerkezköy, Turkey.

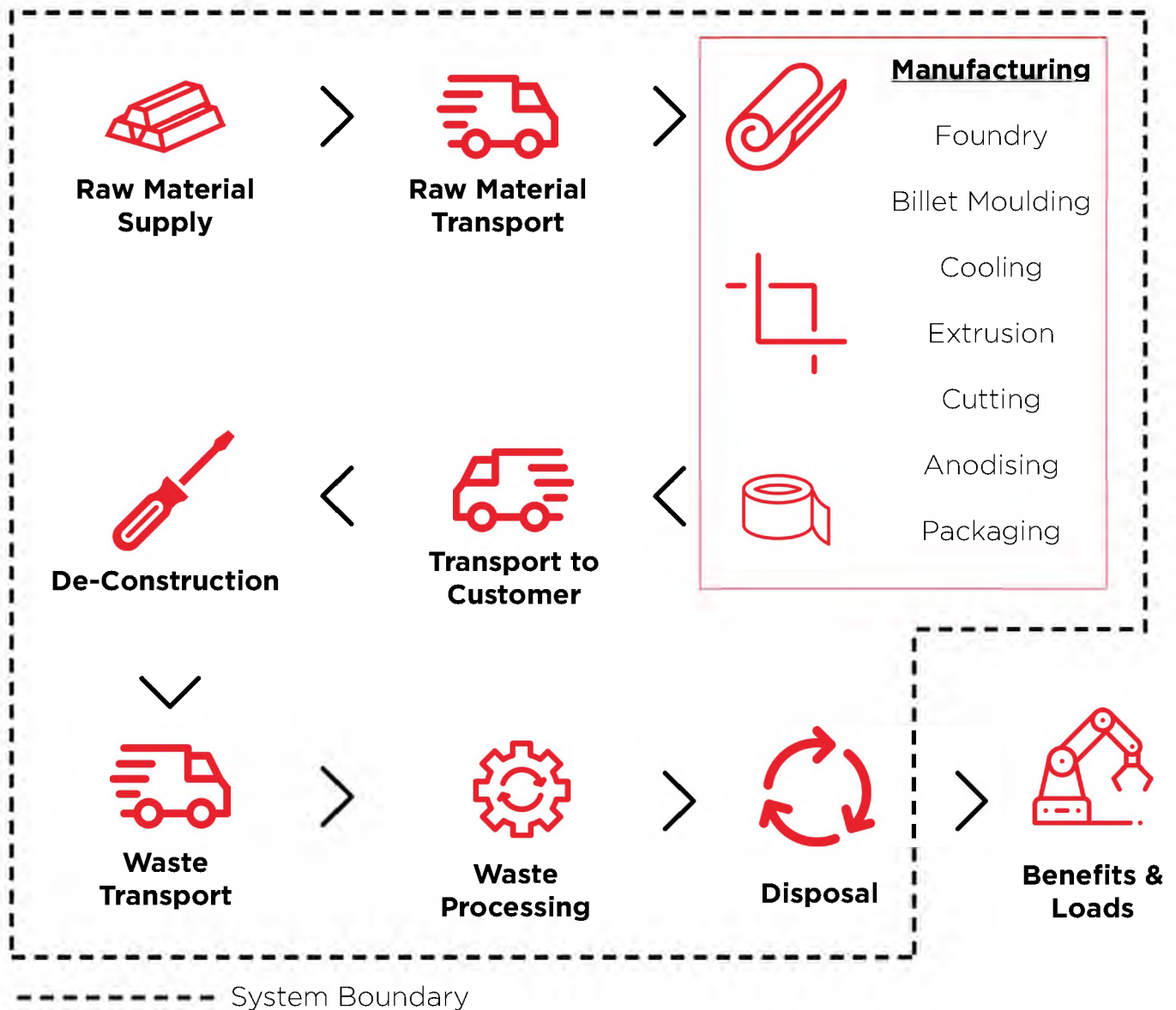
This EPD's system boundary is cradle to grave. The results of the LCA with the indicators as per EPD requirement are given in the following tables for product manufacture (A1, A2, A3), construction process stage (A4), end of life stage (C1, C2, C3, C4) and benefits and load stage (D).

The system boundaries in tabular form for all modules are shown in the table above.

| 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 | Future reuse, recycling or energy recovery potentials |
| A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
| X | X | X | X | ND | ND | ND | ND | ND | ND | ND | ND | X | X | X | X | X |

X = Included in LCA, ND = Not Declared

System Boundary



A1: Raw Material Supply

Production for each product starts with mainly locally sourced but some transported from other parts of the world. 'Raw material supply' includes raw material extraction and pretreatment processes before production.

A2: Raw Material Transport

Transport is relevant for delivery of raw materials and other materials to the plant and the transport of materials within the plant. Transport of raw materials to production site is taken as the weight average values for transport from raw materials supplier in 2020.

A3: Manufacturing

Aluminium profile production starts with foundry of billets by melting down raw aluminium blocks and continuous with extrusion, cooling and cutting for the desired length. Electricity and natural gas are consumed at aluminium profile production processes.

A4: Transport to Customer

Transport of final product to construction site is taken as the weight average values for transport to customers in 2020. The product shipment distance is calculated according to the domestic and international sales rates over the assumed distances. It has been accepted as an average of 500 km by road for domestic and 2000 km by sea for abroad.

C1 : Deconstruction and Demolition

For deconstruction stage, 0.239 MJ electricity use per kg of material was assumed (Gervasio et al., 2018).

C2 : Transport

This stage includes the transportation of the discarded conductors to final disposal. Average distance from demolition site to waste processing site for final disposal is assumed to be 100 km.

C3 : Waste Processing

Wastes can be recycled directly or disposed of according to different scenarios. No process is needed.

C4 : Disposal

Disposal is the final stage of product life. Aluminium profiles end up at recycling plant after construction and demolition as their final fate and modelled as such for this EPD. It is assumed that only 5% of the products send to the landfill.

D : Benefits and Loads

It is assumed that 95% of the waste goes to recycling and recycling efficiency ratio was assumed to be 76%.

More Information

Allocations

Water consumption, energy consumption and raw material transportation were weighted according to 2020 production figures.

In addition, hazardous and non-hazardous waste amounts were also allocated from the 2020 total waste generation.

Cut-Off Criteria

1% cut-off 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.

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).

LCA Modelling, Calculation and Data Quality

The results of the LCA with the indicators as per EPD requirement are given in the LCA result tables. All energy calculations were obtained using Cumulative Energy Demand (LHV) methodology, while fresh water 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 SimaPro 9.1 LCA software and the Ecoinvent 3.6 LCA database were used to calculate the environmental impacts. The regional energy datasets were used for all energy calculations.

Geographical Scope

The geographical scope of this EPD is global.



LCA Results

Environmental Impacts

| Impact Category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|------------------|---|---------|----------|----------|----------|----|----------|----------|
| GWP - Fossil | kg CO ₂ eq | 9.66 | 0.019 | 0.039 | 0.009 | 0 | 0.002 | -6.54 |
| GWP - Biogenic | kg CO ₂ eq | 0.018 | 12.9E-6 | 357E-6 | 6.60E-6 | 0 | 4.51E-4 | -0.013 |
| GWP - Luluc | kg CO ₂ eq | 0.185 | 6.09E-6 | 373E-6 | 2.65E-6 | 0 | 1.86E-6 | -0.134 |
| GWP - Total | kg CO ₂ eq | 9.87 | 0.019 | 0.040 | 0.009 | 0 | 0.002 | -6.69 |
| ODP | kg CFC-11 eq | 760E-9 | 4.50E-9 | 1.10E-9 | 2.14E-9 | 0 | 227E-12 | -511E-9 |
| AP | mol H+ eq | 0.075 | 92.8E-6 | 257E-6 | 28.0E-6 | 0 | 13.4E-6 | -0.052 |
| EP - Freshwater | kg P eq | 0.004 | 1.33E-6 | 41.2E-6 | 643E-9 | 0 | 632E-9 | -0.002 |
| *EP - Freshwater | kg PO ₄ eq | 0.011 | 4.07E-6 | 126E-6 | 1.97E-6 | 0 | 1.94E-6 | -0.007 |
| EP - Marine | kg N eq | 0.010 | 21.6E-6 | 41.8E-6 | 6.26E-6 | 0 | 4.09E-6 | -0.007 |
| EP - Terrestrial | mol N eq | 0.102 | 237E-6 | 379E-6 | 68.5E-6 | 0 | 35.1E-6 | -0.069 |
| POCP | kg NMVOC | 0.034 | 79.8E-6 | 104E-6 | 26.9E-6 | 0 | 10.5E-6 | -0.023 |
| ADPE | kg Sb eq | 46.2E-6 | 318E-9 | 94.2E-9 | 155E-9 | 0 | 15.4E-9 | -30.1E-6 |
| ADPF | MJ | 95.0 | 0.297 | 0.430 | 0.141 | 0 | 0.028 | -62.4 |
| WDP | m ³ depriv. | 3.42 | 0.001 | 0.018 | 459E-6 | 0 | 0.001 | -1.67 |
| PM | disease inc. | 1.01E-6 | 1.57E-9 | 1.10E-9 | 766E-12 | 0 | 183E-12 | -635E-9 |
| IR | kBq U-235 eq | 1.04 | 0.002 | 0.001 | 0.001 | 0 | 165E-6 | -0.706 |
| ETP - FW | CTUe | 276 | 0.235 | 376E-3 | 113E-3 | 0 | 30.9 | -192 |
| HTTP - C | CTUh | 27.3E-9 | 6.11E-12 | 6.90E-12 | 2.73E-12 | 0 | 1.75E-12 | -19.0E-9 |
| HTTP - NC | CTUh | 390E-9 | 254E-12 | 330E-12 | 123E-12 | 0 | 49.8E-12 | -276E-9 |
| SQP | Pt | 18.6 | 0.326 | 0.025 | 0.162 | 0 | 0.035 | -11.1 |
| 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, A1-A3: Sum of A1, A2, and A3, A4: Transport to Site, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary. | | | | | | | |
| 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. | | | | | | | |
| *Disclaimer 3 | EP-freshwater: This indicator has been calculated as "kg P eq" as required in the characterization model. (EUTREND model, Struijs et al, 2009b, as implemented in ReCiPe; http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml) | | | | | | | |

Resource Use

| Impact Category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|-----------------|---|-------|---------|--------|---------|----|---------|--------|
| PERE | MJ | 66.9 | 3.66E-3 | 103E-3 | 1.78E-3 | 0 | 1.67E-3 | -47.0 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 66.9 | 3.66E-3 | 103E-3 | 1.78E-3 | 0 | 1.67E-3 | -47.0 |
| PENRE | MJ | 95.0 | 297E-3 | 430E-3 | 141E-3 | 0 | 28.3E-3 | -62.4 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 95.0 | 297E-3 | 430E-3 | 141E-3 | 0 | 28.3E-3 | -62.4 |
| SM | kg | 0 | 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 | 0.057 | 60.2E-6 | 164E-6 | 29.4E-6 | 0 | 22.6E-6 | -0.036 |
| 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. | | | | | | | |
| Legend | A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A1-A3: Sum of A1, A2, and A3, A4: Transport to Site, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary. | | | | | | | |

Output Flows

| Impact Category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|-----------------|--|-------|----|----|----|----|----|---|
| HWD | kg | 0.013 | 0 | 0 | 0 | 0 | 0 | 0 |
| NHWD | kg | 0.061 | 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 | 0 | 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. | | | | | | | |
| Legend | A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A1-A3: Sum of A1, A2, and A3, A4: Transport to Site, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary. | | | | | | | |

References

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/EN ISO 14001/ Environmental Management Systems - Requirements

/EN ISO 50001/ Energy Management Systems - Requirements

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/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 (ISO14040:2006) and Requirements and guidelines (ISO 14044:2006)

/PCR for Construction Products and CPC 54 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

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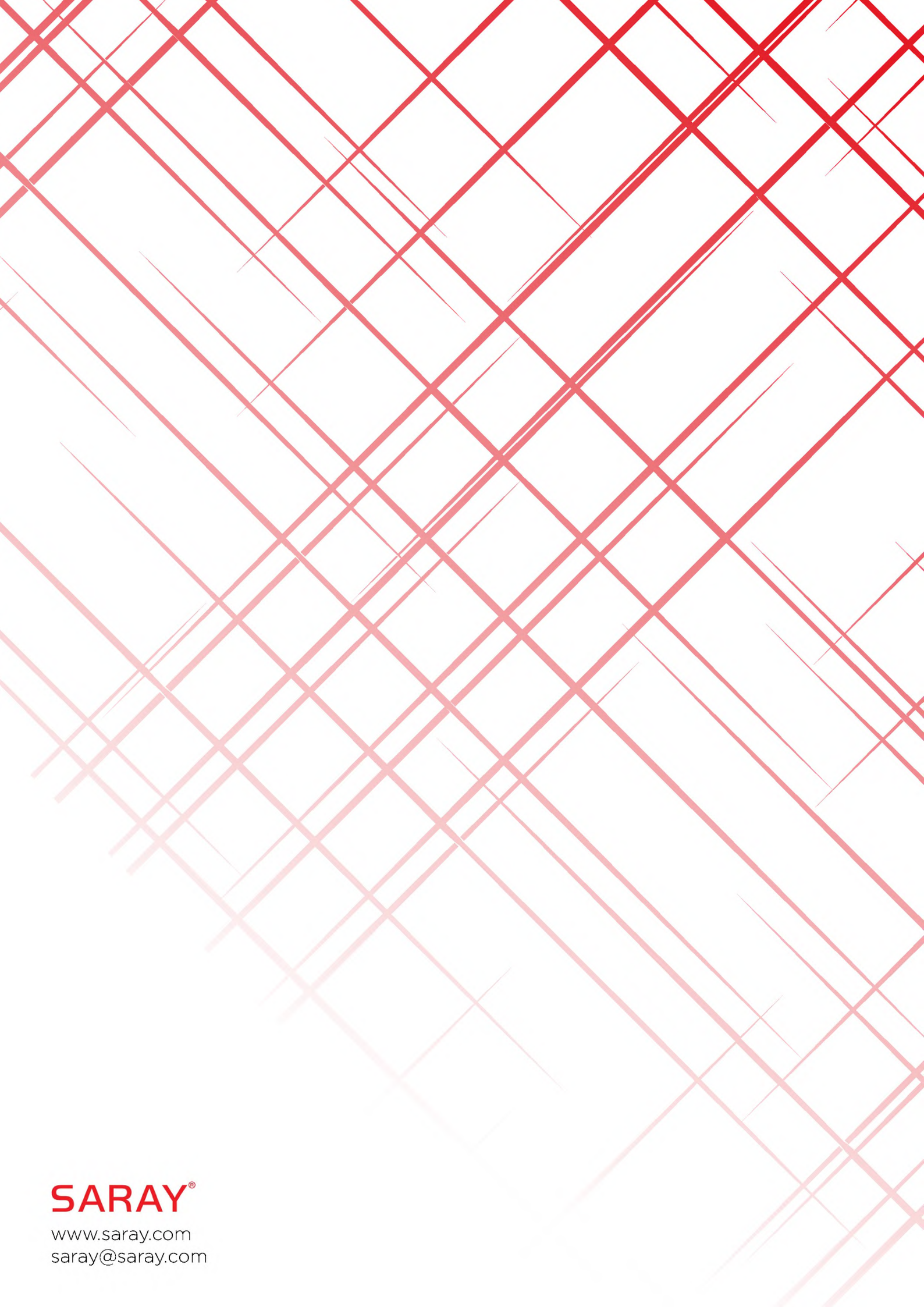
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SARAY®

ENVIRONMENTAL PRODUCT DECLARATION

In accordance
with ISO 14025 and EN 15804:2012+A2:2019 for

B1 Composite Panels

Programme:

The International EPD® System
www.environdec.com

Programme Operator:

EPD International AB

Local Operator:

EPD Turkey

S-P Code:

S-P-4081

Publication Date:

04-09-2021

Validity Date:

03-09-2026

Programme Information

Programme

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Product Category Rules (PCR): 2019:14 Version 1.11, 2021-02-05, Construction Products and CPC 54 Construction Services, EN 15804:2012 + A2:2019 Sustainability of Construction Works

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

EPD process certification

EPD verification

Third party verifier: Prof. Vladimir Koci

Approved by: The International EPD® System

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

Yes

No

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804.

About the Company

Since 1980, Saray Aluminium has been playing a major role in the construction of future architectural buildings with its leading and innovative interior & exterior construction solutions.

Saray manufactures aluminium door&window, curtain wall (facade) and handrail systems, aluminium composite panel, PVC door&window systems, shutter systems, various types of industrial profiles for the sectors such as machinery, lighting, elevator etc. and standard section profiles in various shapes and sizes.

Saray is among the first Turkey's Top 200 Industrial Enterprises and exports %55 of total production more than 60 countries in Europe, Asia, Africa; with its high export amounts Saray receives the "Export Stars of Turkey" award in every year.

Saray Aluminium has CE, ISO 9001, ISO 14001 Qualanod, Qualicoat, TS EN 755, TS EN 12020, SEPRO and GOST-R quality certificates. Saray is a fully integrated enterprise with its aluminium powder coating, aluminium anodizing, extrusion, casting, aluminium composite panel and pvc extrusion, shutter production facilities. With a total of 100.000 sqm covered area, production facilities are located in Cerkezkoy/Tekirdag and Gunesli/Istanbul.



Product Information

LCA Study presented in this report assesses the potential environmental impacts of B1 Composite Panels during their life cycle from raw material supply to disposal.

Saray Al Composite Panels consist of mineral core bonded between two Aluminium panel sheets. Aluminium sheets can be coated with PVDF or Polyester paint.

Saray Al Composite Panels are very rigid and strong despite their light weight. Aluminium sheets are painted in any kind of colour, in PVDF or Polyester coatings, including a wide range of metallic and non-metallic colours as well as patterns that imitate other materials, such as wood or marble.

Applications of Saray Al Composite Panels are not limited to external building cladding, but can also be used in any form of cladding such as partitions, false ceilings etc. Al Composite Panels are also widely used within the signage industry as an alternative to heavier, more expensive substrates.

The UN CPC code of the product is 4299, fabricated metal products-Other fabricated metal.

| Raw Material | % |
|------------------------------------|-------|
| Aluminium Sheet, kg/m ² | 25-35 |
| Mineral Filler, kg/m ² | 60-70 |
| Adhesive, kg/m ² | 0-5 |
| Others, kg/m ² | 0-5 |

Technical Specifications

| Propoerties | Unit | Value |
|----------------------|-------------------|-----------------|
| Thickness | mm | 4 |
| Weight | kg/m ² | 7.1 |
| Thermal Conductivity | W/mK | 0.056 |
| Core | | Mineral Filling |

LCA Informations

Declared Unit 1 m² of B1 Composite Panel

Time Representativeness 2020

Database(s) and LCA Software Used Ecoinvent 3.6, SimaPro 9.1

The inventory for the LCA study is based on the 2020 production figures for Aluminium Composite Panel by SARAY production plants in Çerkezköy, Turkey.

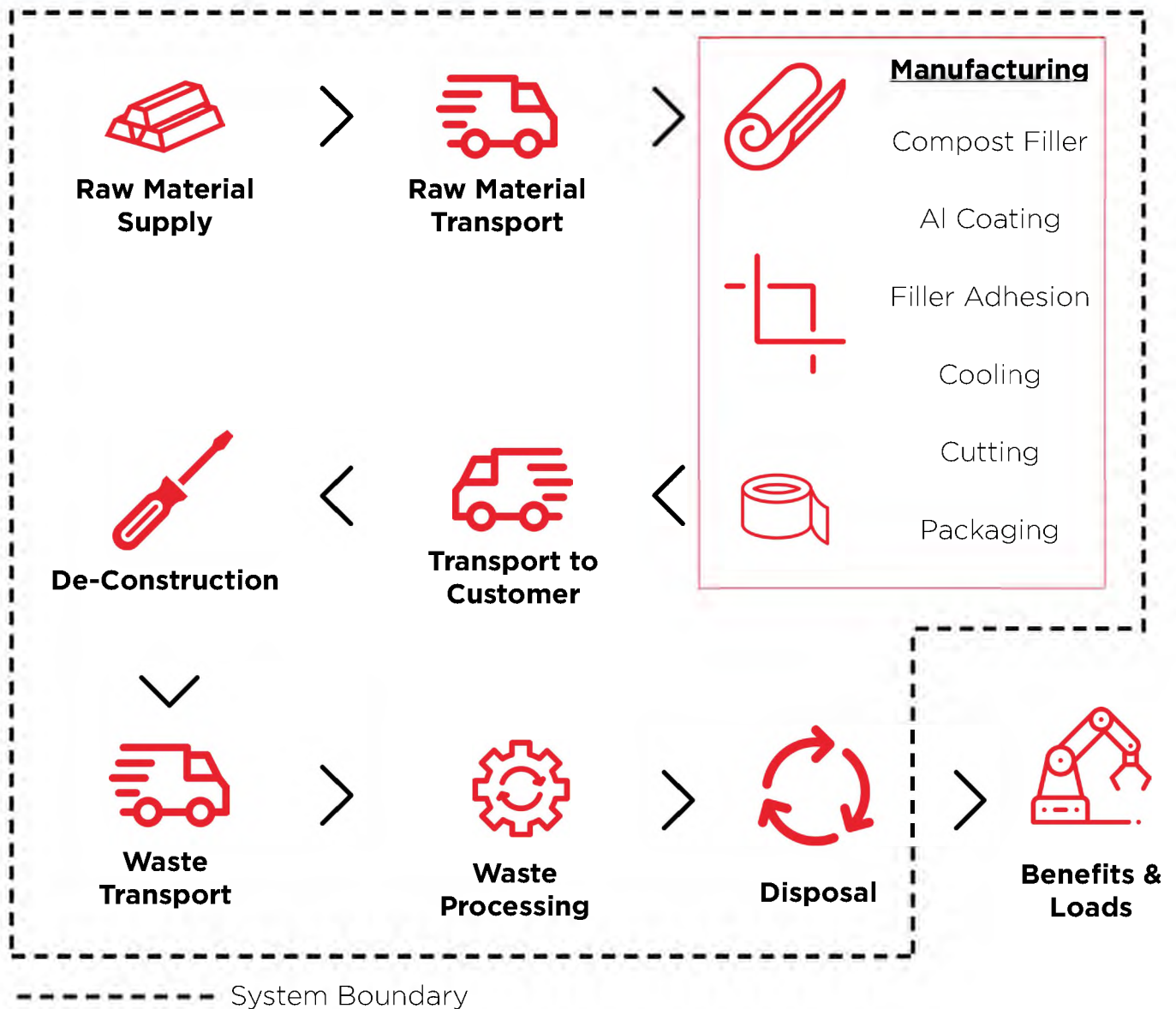
This EPD's system boundary is cradle to grave. The results of the LCA with the indicators as per EPD requirement are given in the following tables for product manufacture (A1, A2, A3), construction process stage (A4), end of life stage (C1, C2, C3, C4) and benefits and load stage (D).

The system boundaries in tabular form for all modules are shown in the table above.

| 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 | Future reuse, recycling or energy recovery potentials |
| A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
| X | X | X | X | ND | ND | ND | ND | ND | ND | ND | ND | X | X | X | X | X |

X = Included in LCA, ND = Not Declared

System Boundary



A1: Raw Material Supply

Production for each product starts with mainly locally sourced but some transported from other parts of the world. 'Raw material supply' includes raw material extraction and pretreatment processes before production.

A2: Raw Material Transport

Transport is relevant for delivery of raw materials and other materials to the plant and the transport of materials within the plant. Transport of raw materials to production site is taken as the weight average values for transport from raw materials supplier in 2020.

A3: Manufacturing

Panel production begins with coating of the aluminium sheets that form the panels and to be placed onto top and bottom layers. Mineral core or organic polymer additives are mixed up at certain percentages and the composed core is inserted into between two aluminium sheets with a particular amount of adhesive in order to laminate the panel layers. Electricity and natural gas are consumed during the manufacturing of Aluminium Composite Panels.

A4: Transport to Customer

Transport of final product to construction site is taken as the weight average values for transport to customers in 2020. The product shipment distance is calculated according to the domestic and international sales rates over the assumed distances. It has been accepted as an average of 500 km by road for domestic and 2000 km by sea for abroad.

C1 : Deconstruction and Demolition

For deconstruction stage, 0.239 MJ electricity use per kg of material was assumed (Gervasio et al., 2018).

C2 : Transport

This stage includes the transportation of the discarded conductors to final disposal. Average distance from demolition site to waste processing site for final disposal is assumed to be 100 km.

C3 : Waste Processing

Wastes can be recycled directly or disposed of according to different scenarios. No process is needed.

C4 : Disposal

Assumed that about 25 per cent of the panels is sent to the landfill for their final fate and this is modelled as such in the LCA.

D : Benefits and Loads

Assumed that 5 per cent of the used aluminium is collected and to be delivered to the recycling processes and this is modelled as such in the LCA.

More Information

Allocations

Water consumption, energy consumption and raw material transportation were weighted according to 2020 production figures.

In addition, hazardous and non-hazardous waste amounts were also allocated from the 2020 total waste generation.

Cut-Off Criteria

1% cut-off 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.

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).

LCA Modelling, Calculation and Data Quality

The results of the LCA with the indicators as per EPD requirement are given in the LCA result tables. All energy calculations were obtained using Cumulative Energy Demand (LHV) methodology, while fresh water 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 SimaPro 9.1 LCA software and the Ecoinvent 3.6 LCA database were used to calculate the environmental impacts. The regional energy datasets were used for all energy calculations.

Geographical Scope

The geographical scope of this EPD is global.



LCA Results

Environmental Impacts

| Impact Category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|------------------|---|---------|----------|----------|----------|----|----------|----------|
| GWP - Fossil | kg CO ₂ eq | 32.5 | 0.211 | 0.287 | 0.064 | 0 | 0.142 | -12.1 |
| GWP - Biogenic | kg CO ₂ eq | 0.093 | 71.9E-6 | 0.003 | 48.5E-6 | 0 | 0.551 | -0.023 |
| GWP - Luluc | kg CO ₂ eq | 0.449 | 96.4E-6 | 0.003 | 19.5E-6 | 0 | 34.4E-6 | -248E-3 |
| GWP - Total | kg CO ₂ eq | 33.1 | 0.211 | 0.293 | 0.064 | 0 | 0.693 | -12.4 |
| ODP | kg CFC-II eq | 2.60E-6 | 48.1E-9 | 8.11E-9 | 15.7E-9 | 0 | 6.64E-9 | -950E-9 |
| AP | mol H+ eq | 0.235 | 0.003 | 0.002 | 206E-6 | 0 | 311E-6 | -0.097 |
| EP - Freshwater | kg P eq | 0.011 | 12.7E-6 | 303E-6 | 4.73E-6 | 0 | 1.81E-5 | -0.004 |
| *EP - Freshwater | kg PO ₄ eq | 0.033 | 38.9E-6 | 0.001 | 14.5E-6 | 0 | 55.3E-6 | -0.013 |
| EP - Marine | kg N eq | 0.033 | 0.001 | 307E-6 | 46.0E-6 | 0 | 0.001 | -0.012 |
| EP - Terrestrial | mol N eq | 0.351 | 0.008 | 0.003 | 0.001 | 0 | 0.001 | -0.128 |
| POCP | kg NMVOC | 0.119 | 0.002 | 0.001 | 198E-6 | 0 | 405E-6 | -0.043 |
| ADPE | kg Sb eq | 0.001 | 2.90E-6 | 692E-9 | 1.14E-6 | 0 | 317E-9 | -55.9E-6 |
| ADPF | MJ | 447 | 3.14 | 3.16 | 1.04 | 0 | 0.672 | -116 |
| WDP | m ³ depriv. | 15.2 | 0.008 | 0.134 | 0.003 | 0 | 0.017 | -3.10 |
| PM | disease inc. | 2.66E-6 | 13.8E-9 | 8.06E-9 | 5.63E-9 | 0 | 4.36E-9 | -1.18E-6 |
| IR | kBq U-235 eq | 3.27 | 0.015 | 0.004 | 0.005 | 0 | 0.004 | -1.31 |
| ETP - FW | CTUe | 861 | 2.34 | 2.76 | 0.828 | 0 | 373 | -357 |
| HTTP - C | CTUh | 70.3E-9 | 87.2E-12 | 50.8E-12 | 20.1E-12 | 0 | 43.5E-12 | -35.4E-9 |
| HTTP - NC | CTUh | 1.08E-6 | 2.36E-9 | 2.43E-12 | 907E-12 | 0 | 161E-11 | -514E-9 |
| SQP | Pt | 70.1 | 2.52 | 0.182 | 1.19 | 0 | 1.18 | -20.7 |
| 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, A1-A3: Sum of A1, A2, and A3, A4: Transport to Site, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary. | | | | | | | |
| 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. | | | | | | | |
| *Disclaimer 3 | EP-freshwater: This indicator has been calculated as "kg P eq" as required in the characterization model. (EUTREND model, Struijs et al, 2009b, as implemented in ReCiPe; http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml) | | | | | | | |

Resource Use

| Impact Category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|-----------------|---|-------|-------|-------|--------|----|-------|--------|
| PERE | MJ | 164 | 0.033 | 0.755 | 0.013 | 0 | 0.034 | -87.3 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 164 | 0.033 | 0.755 | 0.013 | 0 | 0.034 | -87.3 |
| PENRE | MJ | 447 | 3.14 | 3.16 | 1.04 | 0 | 0.672 | -116 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 447 | 3.14 | 3.16 | 1.04 | 0 | 0.672 | -116 |
| SM | kg | 0 | 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 | 0.180 | 0.001 | 0.001 | 216E-6 | 0 | 0.001 | -0.067 |
| 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. | | | | | | | |
| Legend | A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A1-A3: Sum of A1, A2, and A3, A4: Transport to Site, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary. | | | | | | | |

Output Flows

| Impact Category | Unit | A1-A3 | A4 | C1 | C2 | C3 | C4 | D |
|-----------------|--|-------|----|----|----|----|----|---|
| HWD | kg | 0.092 | 0 | 0 | 0 | 0 | 0 | 0 |
| NHWD | kg | 0.432 | 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 | 0 | 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. | | | | | | | |
| Legend | A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A1-A3: Sum of A1, A2, and A3, A4: Transport to Site, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary. | | | | | | | |

References

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

/EN ISO 9001/ Quality Management Systems - Requirements

/EN ISO 14001/ Environmental Management Systems - Requirements

/EN ISO 50001/ Energy Management Systems - Requirements

/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 (ISO14040:2006) and Requirements and guidelines (ISO 14044:2006)

/PCR for Construction Products and CPC 54 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 Informations

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

The International EPD® System
www.environdec.com



Programme operator EPD Turkey:
SÜRATAM – Turkish Centre for Sustainable Production Research & Design
Nef 09 B Blok No:7/15,
34415 Kağıthane / Istanbul, TURKEY

www.epdturkey.org
info@epdturkey.org

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info@environdec.com

Owner of the declaration **SARAY®**

Veliköy Sanayi Bölgesi Sanayi Bulvarı
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Contact: Aret Marancıoğlu
Manager
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LCA practitioner **metsims**
Sustainability Consulting

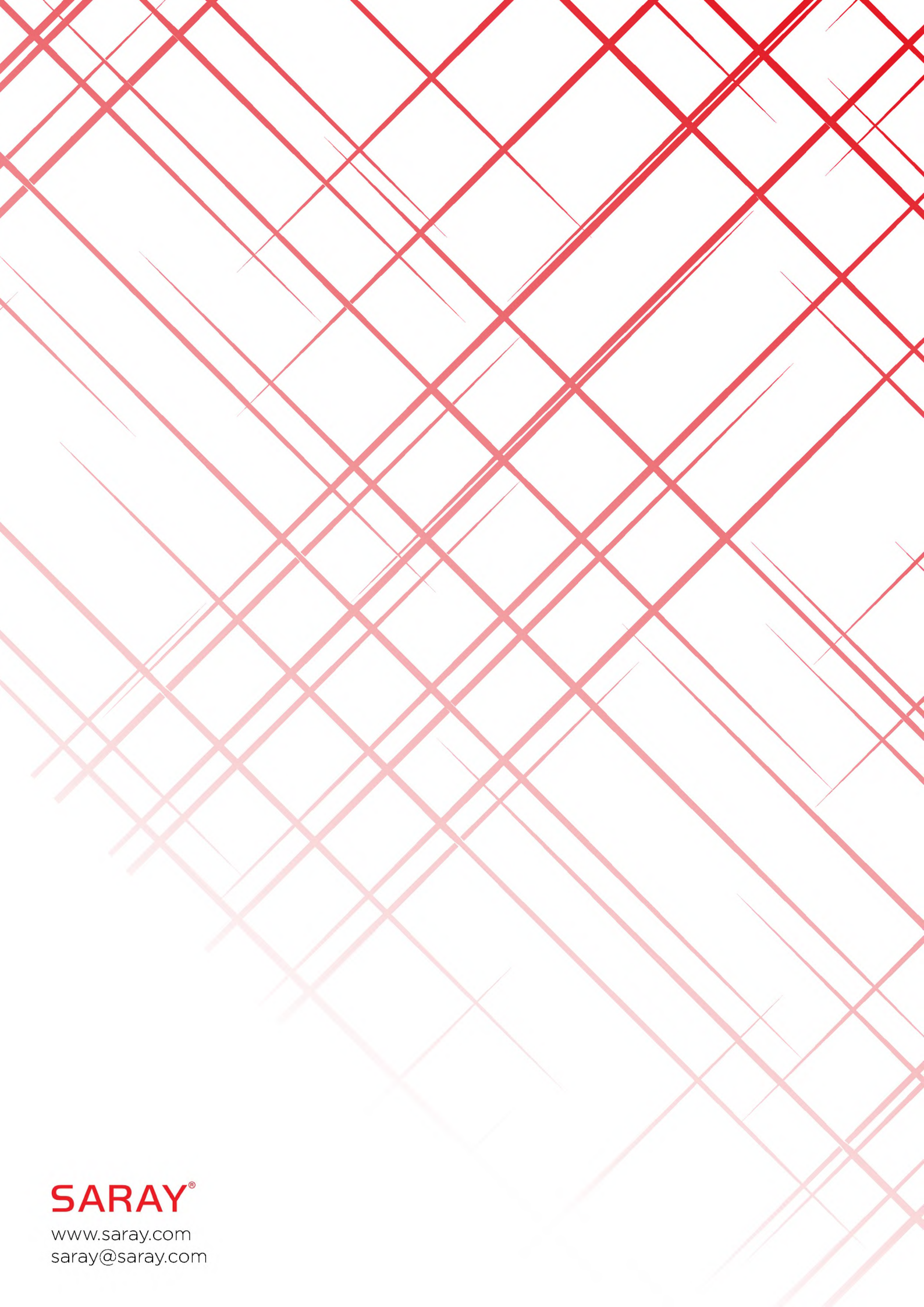
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info@metsims.com

3rd party verifier **LCA studio**

Prof. Vladimír Kocí
LCA Studio
Šárecká 5,16000
Prague 6 - Czech Republic
www.lcastudio.cz



SARAY[®]

www.saray.com
saray@saray.com



TÜRK LOYDU

TL No : 2024-0525

TL ES No : 3551-240815122602-001

Yayın Tarihi : 15.08.2024
Date of Issue

FABRİKA ÜRETİM KONTROL UYGUNLUK BELGESİ CERTIFICATE OF CONFORMITY OF THE FACTORY PRODUCTION CONTROL < 1785-CPR-0074 >

Avrupa Parlamentosu ve Konseyinin 9 Mart 2011 tarihli 305/2011/AB Yapı Malzemeleri Yönetmeliği'ne uygun olarak
bu sertifika aşağıdaki yapı malzemeleri için

in compliance with Regulation 305/2011/EC of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation) and of the Council of 9 March 2011 (the Construction Products Regulation)

Yapısal amaçlı alüminyum ve alüminyum alaşımli ürünler-Yapısal işlerde kullanılmak üzere, korozyondan koruma işi hariç
Aluminium and aluminium alloy products for structural purposes - For structural works, no corrosion protection work excluded

| Ürün Product | Genel Hükümler General Conditions | Spesifik Şartlar Specific Conditions | | Boyutlar Dimensions | Alaşım Alloys |
|---|--|---|---------------------------|--|--------------------------|
| | | Mekanik Özellikler Mechanical Spec. | Toleranslar Tolerances | | |
| Ekstrüzyonla İmalat Edilmiş Profil | EN 755-1 | EN 755-2 | EN 755-9 | Çevre çapı 155 mm'den küçük ürünler ($\leq \varnothing 155$ mm) Products with circumference diameter less than 155 mm ($\leq \varnothing 155$ mm) | EN AW 6060 EN AW 6063 |
| Ekstrüzyonla İmalat Edilmiş Hassas Profil | EN 12020-1 | EN 755-2 | EN 12020-2 | Çevre çapı 155 mm'den küçük ürünler ($\leq \varnothing 155$ mm) Products with circumference diameter less than 155 mm ($\leq \varnothing 155$ mm) | |

placed on the market under the name or trade mark of
SARAY DÖKÜM VE MADENİ AKSAM SANAYİ TURİZM A.Ş.
Veliköy Organize Sanayi Bölgesi Sanayi Bulvarı No:90/1 Çerkezköy/ TEKİRDAĞ
tarafından
and produced in the manufacturing plant (s)
SARAY DÖKÜM VE MADENİ AKSAM SANAYİ TURİZM A.Ş.
Veliköy Organize Sanayi Bölgesi Sanayi Bulvarı No:90/1 Çerkezköy/ TEKİRDAĞ
tesisinde üretilmektedir.



Bu belge standardın Ek ZA'sında açıklanan performans süreklilik değerlendirme ve doğrulama ile ilgili tüm hükümlerin karşılandığını gösterir.

provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard(s)

EN 15088:2005

Sistem 2+ uygulanmıştır ve
under system 2 - is applied and that

fabrika üretim kontrolünün yürürlükteki şartlara uygun olduğu değerlendirilir.

factory production control is assessed to be in conformity with the applicable requirements.

Bu belge, 15.08.2024 tarihinde ilk olarak yayınlanmış olup; uyumlaştırılmış standart, yapı ürünü, PDDD yöntemleri veya tesisteki üretim koşulları değişmediği. Onaylanmış Fabrika Üretim Kontrolü Belgelendirme Kuruluşu tarafından askıya alınmadığı veya iptal edilmediği sürece 14.08.2027 tarihine kadar geçerli olacaktır.

This certificate was first issued on the 15.08.2024 and will remain valid until 14.08.2027 as long as neither the harmonised standard, the construction product, the AVCP methods, nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified factory production control certification body.

Gökmen GÜNER

Ürün Belgelendirme Komitesi Başkan Vekili
Act. Head of Product Certification Committee

Murat DEVREZ

Teknik Düzeltme Sorumlusu
Director Responsible

Yönetmeliğe uygun olarak ürünün sorumluluğu imalatçı veya yetkili temsilcisine aittir. Yönetmelikte belirtilen üretim/ürün değerlendirme sistemine tamamen uyulduğu zaman uygunluk işareti üzerine konulabilir ve uygunluk beyanı düzenlenebilir.

Türk Loydu'nun herhangi bir ihmali dolayısıyla sebep olduğu kayıp ve hasarların ispatlanması durumunda, kayıplara "Mesleki Sorumluluk Sigortası" limitleri dahilinde tazminat ödenir.

For any person suffering loss or damage which is proved to have been caused by this certificate, indemnity is not given.

TÜRK LOYDU - Evliya Çelebi Mh. Tersaneler Cd. No:26/1 - 34944 Tuzla/İSTANBUL - Tel: 0216 581 37 00 - E-posta: endustri@turkloydu.org



TÜRK LOYDU

TL No : 2024-0644

TL ES No : 3551-240815143735-001

Yayın Tarihi : 15.08.2024
Date of Issue

FABRİKA ÜRETİM KONTROL UYGUNLUK BELGESİ CERTIFICATE OF CONFORMITY OF THE FACTORY PRODUCTION CONTROL < 1785-CPR-0075 >

Avrupa Parlamentosu ve Konseyinin 9 Mart 2011 tarihli 305/2011/AB Yapı Malzemeleri Yönetmeliği'ne uygun olarak bu sertifika aşağıdaki yapı malzemeleri için

305/2011/AB of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation) (EC) No 305/2011 concerning technical regulation for construction products

Yapısal amaçlı alüminyum ve alüminyum alaşım ürünleri-Yapısal işlerde kullanılmak üzere, korozyondan koruma işi hariç
Aluminium and aluminium alloy products for structural purposes - For structural works, no corrosion protection work excluded

| Ürün Product | Genel Hükümler General Conditions | Spesifik Şartlar Specific Conditions | | Boyutlar Dimensions | Alaşım Alloys |
|---|--|---|---------------------------|--|--------------------------|
| | | Mekanik Özellikler Mechanical Spec. | Toleranslar Tolerances | | |
| Ekstrüzyonla İmalat Edilmiş Profil | EN 755-1 | EN 755-2 | EN 755-9 | Çevre çapı 155 mm'den küçük ürünler ($\leq \varnothing 155$ mm) Products with circumference diameter less than 155 mm ($\leq \varnothing 155$ mm) | EN AW 6060 EN AW 6063 |
| Ekstrüzyonla İmalat Edilmiş Hassas Profil | EN 12020-1 | EN 755-2 | EN 12020-2 | Çevre çapı 155 mm'den küçük ürünler ($\leq \varnothing 155$ mm) Products with circumference diameter less than 155 mm ($\leq \varnothing 155$ mm) | |

placed on the market under the name or trade mark of
SARAY DÖKÜM VE MADENİ AKSAM SANAYİ TURİZM A.Ş.
Bağlar Mh. Osmanpaşa Cd. No:89 Güneşli, Bağcılar / İSTANBUL
tarafından
and produced in the manufacturing plant (s)
SARAY DÖKÜM VE MADENİ AKSAM SANAYİ TURİZM A.Ş.
Bağlar Mh. Osmanpaşa Cd. No:89 Güneşli, Bağcılar / İSTANBUL
tesisinde üretilmektedir.



Bu belge standardın Ek ZA'sında açıklanan performans süreklilik değerlendirme ve doğrulama ile ilgili tüm hükümlerin karşılandığını gösterir.

This certificate concerns assessment and verification of constancy of performance as described in Annex ZA of the standard(s)

EN 15088:2005

Sistem 2+ uygulanmıştır ve

under system 2+ is applied and that

fabrika üretim kontrolünün yürürlükteki şartlara uygun olduğu değerlendirilir.

factory production control is assessed to be in conformity with the applicable requirements.

Bu belge, 15.08.2024 tarihinde ilk olarak yayımlanmış olup; uyumlaştırılmış standart, yapı ürünü, PDDD yöntemleri veya tesisteki üretim koşulları değişmediği, Onaylanmış Fabrika Üretim Kontrolü Belgelendirme Kuruluşu tarafından askıya alınmadığı veya iptal edilmediği sürece 14.08.2027 tarihine kadar geçerli olacaktır.

This certificate was first issued on the 15.08.2024 and will remain valid until 14.08.2027 as long as neither the harmonised standard, the construction product, the AVCP methods, nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified factory production control certification body.

Gökmen GÜFFER

Ürün Belgelendirme Komitesi Başkan Vekili
Act. Head of Product Certification Committee

Murat DEVREZ

Teknik Düzenleme Sorumlusu
Directive Responsible

Yönetmelige uygun olarak ürünün sorumluluğu imalatçı veya yetkili temsilcisine aittir. Yönetmelikte belirtilen üretim/ürün değerlendirme sistemine tamamen uyulduğu zaman uygunluk işareti üzerine konulabilir ve uygunluk beyanı düzenlenebilir.

Türk Loydu'nun herhangi bir ihmali dolayısıyla sebep olduğu kayıp ve hasarların ispatlanması durumunda, kayıplara "Mesleki Sorumluluk Sigortası" limitleri dahilinde tazminat ödenir.

The certificate is valid only when the manufacturer or its representative is in compliance with the directive. The conformity marking may only be affixed to the product and a Declaration of Conformity may only be issued when the product is in conformity with the directive and fully compliant with the requirements of the directive.

TÜRK LOYDU – Evliya Çelebi Mh. Tersaneler Cd. No:26/1 – 34944 Tuzla/İSTANBUL – Tel: 0216 581 37 00 – E-posta: endustri@turkloydu.org



TÜRK LOYDU

TL No : 2024-0524

TL ES No : 3551-240815105938-001

Yayın Tarihi : 15.08.2024
Date of Issue

FABRİKA ÜRETİM KONTROL UYGUNLUK BELGESİ CERTIFICATE OF CONFORMITY OF THE FACTORY PRODUCTION CONTROL <1785-CPR-0073>

Avrupa Parlamentosu ve Konseyinin 9 Mart 2011 tarihli 305/2011/AB Yapı Malzemeleri Yönetmeliği'ne uygun olarak bu sertifika aşağıdaki yapı malzemeleri için
In conformity with Regulation 305/2011 EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product

Yapısal amaçlı alüminyum ve alüminyum alaşımlı ürünler, EN 1090-3, EXC2'ye kadar
Kaynaklı imalat ve boya işi hariç
yapısal işlerde kullanılmak üzere, EN 1090-1:2009+A1:2011 ZA.3.2, ZA.3.4'e göre CE markalı olarak
Aluminium and aluminium alloy products for structural purposes up to EXC2 acc. to EN 1090-3
Weld and painting excluded
for structural steel, CE-marking method ZA3.2. and ZA.3.4. acc. to EN 1090-1:2009+A1:2011
placed on the market under the name or trade mark of

SARAY DÖKÜM VE MADENİ AKSAM SANAYİ TURİZM A.Ş.
Veliköy Organize Sanayi Bölgesi Sanayi Bulvarı No:90/1 Çerkezköy/ TEKİRDAĞ
tarafından
and produced in the manufacturing plant (s)

SARAY DÖKÜM VE MADENİ AKSAM SANAYİ TURİZM A.Ş.
Veliköy Organize Sanayi Bölgesi Sanayi Bulvarı No:90/1 Çerkezköy/ TEKİRDAĞ
tesisinde üretilmektedir.



Bu belge standardın Ek ZA'sında açıklanan performans süreklilik değerlendirme ve doğrulama ile ilgili tüm hükümlerin karşılandığını gösterir.

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA.1 of the standard is

EN 1090-1 : 2009+A1:2011

Sistem 2+ uygulanmıştır ve

under system 2+ is applied and that

fabrika üretim kontrolünün yürürlükteki şartlara uygun olduğu değerlendirilir.

the factory production control is assessed to be in conformity with the applicable requirements.

Bu belge, 15.08.2024 tarihinde ilk olarak yayınlanmış olup; uyumlaştırılmış standart, yapı ürünü, PDDD yöntemleri veya tesisdeki üretim koşulları değişmediği. Onaylanmış Fabrika Üretim Kontrolü Belgelendirme Kuruluşu tarafından askıya alınmadığı veya iptal edilmediği sürece 14.08.2027 tarihine kadar geçerli olacaktır.

This certificate was first issued on the 15.08.2024 and will remain valid until 14.08.2027 as long as neither the harmonised standard, the construction product, the AVCP methods, nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified factory production control certification body.

Gökmen ÇİFTÇİ
Ürün Belgelendirme Komitesi Başkan Vekili
Act. Head of Product Certification Committee

Murat DEVREZ
Teknik Düzenleme Sorumlusu
Directive Responsible

Yönetmeliğe uygun olarak ürünün sorumluluğu imalatçı veya yetkili temsilcisine aittir. Yönetmelikte belirtilen üretim/ürün değerlendirme sistemine tamamen uyulduğu zaman uygunluk işareti üzerine konulabilir ve uygunluk beyanı düzenlenebilir.
Türk Loydu'nun herhangi bir ihmal dolayısıyla sebep olduğu kayıp ve zararların ispatlanması durumunda, kayıplara "Mesleki Sorumluluk Sigortası" limitleri dahilinde tazminat ödenir.

The product liability rests with the manufacturer or his representative in a compliance with the directive. The
A Declaration of Conformity may only be issued when the production product assessment system referred in the directive is fully complied with
of Türk Loydu, that loss compensated within

TÜRK LOYDU – Evliya Çelebi Mh. Tersaneler Cd. No:26/1 – 34944 Tuzla/İSTANBUL – Tel: 0216 581 37 00 – E-posta: endustri@turkloydu.org



Certificate of Registration

This certificate has been awarded to

SARAY DÖKÜM VE MADENİ AKSAM SANAYİ TURİZM ŞİRKETİ

Veliköy Organize Sanayi Bölgesi Sanayi Bulvarı No:90/1 Çerkezköy TEKİRDAĞ,
Türkiye
USI Number YNCRLG

in recognition of the organization's Quality Management System which complies with

IATF 16949:2016

The scope of activities covered by this certificate is defined below

**Manufacture of Extruded Aluminium Profiles (Excludes Product Design under
Clause 8.3)
- [USI YNCRLG]**

| Certificate Number 211924/A/0001/SM/En | | | |
|---|-----------------|---------------------------------|---------------------|
| <small>A certificate number of 0001, confirms the Client has a single site Certified & the site is their Head Office or Main site in relation to the Certified scope with URS. A certificate number of 0002, or greater (e.g.: xxxx/8/0002/UK/En) refers to a client that has more than one site certified with URS, as such, the following statement shall apply - 'The validity of this certificate depends on the validity of the main certificate'.</small> | | | |
| Date of Issue of Certification Cycle | Issue Number | Certificate Expiry Date | Certification Cycle |
| 28 January 2024 | 1 | 27 January 2027 | 1 |
| Revision Date | Revision Number | Original Certificate Issue Date | Scheme Number |
| 10 February 2025 | 1 | 28 January 2024 | 0498586 |

For detailed explanation for the data fields above, refer to <http://www.urs-holdings.com/logos-and-regulations>

Issued by



Mukesh Singhal - On behalf of the Schemes Manager



Authorization to use the quality sign



This is to certify that

Saray Dokum ve Madeni Aksam Sanayi Turizm A.S.

Baglar Mahallesi Osmanpasa Caddesi No: 89
TR – 34209 Gunesli / Istanbul

Licence number: 1607

is authorized to use the quality sign which is shown above, according to the regulations for the use of the quality label for ARCHITECTURAL ANODIZING as described in the current edition of the Specifications for the QUALANOD quality label for sulfuric acid-based anodizing of aluminium (Edition 01.01.2024). Architectural anodizing is one of the four types of anodizing covered by the Specifications.

Date of issue of the licence: 13.03.2003
Period of validity of the licence: until 31.12.2025
Date of issue of the certificate: Zurich, 9 January 2025

QUALANOD

Peter Watts
President

Sergio Marchionni
Secretariat



Mailing address:
ARCO Association Management AG
P.O. Box, CH-8027 Zurich

Domicile:
ARCO Association Management AG
Dept. QUALANOD
Tödistrasse 42, CH-8002 Zurich

Website of label: www.qualanod.net
E-Mail: info@qualanod.net // Phone: +41 (0)43 305 09 77 / 81

Autorisation d'utiliser le label de qualité



Ceci est pour certifier que la société

Saray Dokum ve Madeni Aksam Sanayi Turizm A.S.

Baglar Mahallesi Osmanpasa Caddesi No: 89
TR – 34209 Gunesli / Istanbul

Numéro de licence: 1607

est autorisée à utiliser le label de qualité ci-dessus en accord avec le règlement relatif à l'emploi du label de qualité QUALANOD pour l'anodisation sulfurique de l'aluminium destinée à l'ANODISATION ARCHITECTURALE tel que décrit dans l'édition actuelle des Directives (Edition du 01/01/2024). L'anodisation architecturale est l'un des quatre types d'anodisation visés par les Directives.

Date d'émission de la licence: 13.03.2003
Durée de validité de la licence: jusqu'au 31.12.2025
Date d'émission du certificat: Zurich, le 9 janvier 2025

QUALANOD

Peter Watts
President

Sergio Marchionni
Secretariat



Mailing address:
ARCO Association Management AG
P.O. Box, CH-8027 Zurich

Domicile:
ARCO Association Management AG
Dept. QUALANOD
Tödistrasse 42, CH-8002 Zurich

Website of label: www.qualanod.net
E-Mail: info@qualanod.net // Phone: +41 (0)43 305 09 77 / 81

CERTIFICATE

for a COATING APPLICATOR



Inspired by architecture, trusted by professionals

| SEASIDE |

hereby authorises

SARAY DOKUM VE MADENI AKSAM SANAYI TURIZM A.S.

Baglar Mahallesi Osmanpasa Caddesi No: 89
34209 Gunesli / Istanbul
Turkey

to use the quality label in conformity with the
QUALICOAT Specifications, applicable from 1 January 2025

| | |
|-------------------|------------|
| Licence No.: | 1402 |
| Date of Granting: | 01.03.2000 |
| Valid until: | 31.12.2025 |

ZURICH, 19 MARCH 2025

A handwritten signature in black ink, appearing to read 'Coby Armar'.

Coby Armar
Secretary General



A handwritten signature in black ink, appearing to read 'Pascale Bellot'.

Pascale Bellot
Deputy Secretary General



СЕРТИФІКАТ ВІДПОВІДНОСТІ



Про _____

от _____

Head of Certification Center



№ 001385



TÜRK STANDARDLARI ENSTİTÜSÜ
TÜRK STANDARDLARINA UYGUNLUK BELGESİ
TURKISH STANDARDS INSTITUTION
CERTIFICATE OF CONFORMITY TO TURKISH STANDARDS

Markanın Tanımı Description of the Mark
TSE veya/or  veya/or T S E

| | |
|---|---|
| BELGE NUMARASI REFERENCE NUMBER OF LICENCE | 002849-TSE-02/08 |
| BELGENİN İLK VERİLİŞ TARİHİ DATE OF FIRST ISSUE OF LICENCE | 14.03.2011 |
| BELGENİN SON GEÇERLİLİK TARİHİ LICENCE VALID UNTIL | 29.11.2026 |
| BELGE SAHİBİ KURULUŞUN ADI NAME OF THE LICENCE HOLDER | SARAY DÖKÜM VE MADENİ AKSAM SANAYİ TURİZM ANONİM ŞİRKETİ |
| BELGE SAHİBİ KURULUŞUN ADRESİ ADDRESS OF THE LICENCE HOLDER | BAĞLAR MAH/SEMT OSMAN PAŞA CAD. NO:89 /11 BAĞCILAR İSTANBUL/TÜRKİYE |
| ÜRETİM YERİ ADI NAME OF THE MANUFACTURING PLACE | SARAY DÖKÜM VE MADENİ AKSAM SANAYİ TURİZM ANONİM ŞİRKETİ |
| ÜRETİM YERİ ADRESİ ADDRESS OF THE MANUFACTURING PLACE | BAĞLAR MAH. OSMANPAŞA CAD. NO:89 34540 GÜNEŞLİ İSTANBUL / TÜRKİYE |
| İPTAL EDİLEN BELGE NUMARASI (Varsa) INDICATION OF SUPERSEDED LICENCE (if any) | 002849-TSE-02/07 |
| TESCİLLİ TİCARİ MARKASI REGISTERED TRADE MARK | saray |
| İLGİLİ TÜRK STANDARDI RELATED TURKISH STANDARD | TS EN 755-1:2016 / 09.12.2016 |
| BELGE KAPSAMI SCOPE OF LICENCE | |

ALÜMİNYUM VE ALÜMİNYUM ALAŞIMLARI
EKSTRÜZYONLA İMAL EDİLMİŞ PROFİLLER – EN AW 6063 ALAŞIMDAN İMAL EDİLMİŞ,
EKSTRÜZYONLA İMAL EDİLMİŞ LUMBOZ BORULARI – EN AW 6063 ALAŞIMDAN İMAL EDİLMİŞ
EKSTRÜZYONLA İMAL EDİLMİŞ PROFİLLER – EN AW 6082 ALAŞIMDAN İMAL EDİLMİŞ (KG:26.06.2025)

e-imzalı/e-signed

27.11.2025

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YUNUS MERCAN

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TÜRK STANDARDLARI ENSTİTÜSÜ
TÜRK STANDARDLARINA UYGUNLUK BELGESİ
TURKISH STANDARDS INSTITUTION
CERTIFICATE OF CONFORMITY TO TURKISH STANDARDS

Markanın Tanımı Description of the Mark
TSE veya/or  veya/or T S E

| | |
|---|---|
| BELGE NUMARASI REFERENCE NUMBER OF LICENCE | 002849-TSE-01/04 |
| BELGENİN İLK VERİLİŞ TARİHİ DATE OF FIRST ISSUE OF LICENCE | 14.03.2011 |
| BELGENİN SON GEÇERLİLİK TARİHİ LICENCE VALID UNTIL | 28.10.2026 |
| BELGE SAHİBİ KURULUŞUN ADI NAME OF THE LICENCE HOLDER | SARAY DÖKÜM VE MADENİ AKSAM SANAYİ TURİZM ANONİM ŞİRKETİ |
| BELGE SAHİBİ KURULUŞUN ADRESİ ADDRESS OF THE LICENCE HOLDER | BAĞLAR MAH/SEMT OSMAN PAŞA CAD. NO:89 /11 BAĞCILAR İSTANBUL/TÜRKİYE |
| ÜRETİM YERİ ADI NAME OF THE MANUFACTURING PLACE | SARAY DÖKÜM VE MADENİ AKSAM SANAYİ TURİZM ANONİM ŞİRKETİ |
| ÜRETİM YERİ ADRESİ ADDRESS OF THE MANUFACTURING PLACE | BAĞLAR MAH. OSMANPAŞA CAD. NO:89 34540 GÜNEŞLİ İSTANBUL / TÜRKİYE |
| İPTAL EDİLEN BELGE NUMARASI (Varsa) INDICATION OF SUPERSEDED LICENCE (if any) | 002849-TSE-01/03 |
| TESCİLLİ TİCARİ MARKASI REGISTERED TRADE MARK | saray |
| İLGİLİ TÜRK STANDARDI RELATED TURKISH STANDARD | TS EN 12020-1 / 28.04.2022 |
| BELGE KAPSAMI SCOPE OF LICENCE | |

* ALÜMİNYUM VE ALÜMİNYUM VE ALAŞIMLARINDAN EKSTRÜZYON İLE İMAL EDİLMİŞ HASSAS PROFİLLER ;
- ENA W 6060 ve ENAW 6063 ALAŞIMLI ALÜMİNYUM MALZEMEDEN ISIL BARIYERLİ VE ISIL BARIYERSİZ EKSTRÜZYON PROFİLLER

e-imzalı/e-signed

21.10.2025

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