TURKEY EPD®

ENVIRONMENTAL PRODUCT DECLARATIONS

EPD®

THE INTERNATIONAL EPD® SYSTEM

CERTIFICATE

THIS DOCUMENT IS TO CONFIRM THAT

AGT AĞAÇ SANAYİ ve TİC.A.Ş.

HAS DEVELOPED, REGISTERED AND PUBLISHED AN EPD FOR

MEDIUM DENSITY FIBREBOARD (RAW)

MDF LAM

MDF PANELS and PROFILES

FLOORING

WITH REGISTRATION NUMBERS S-P-01912 S-P-01913 S-P-01914 S-P-01915 IN EPD TURKEY AND THE INTERNATIONAL EPD® SYSTEM.

THE EPD HAS BEEN EXAMINED AND APPROVED BY AN INDEPENDENT VERIFIER, VLADIMÍR KOČÍ, IN ACCORDANCE WITH PCR 2012:01 AND THE GENERAL PROGRAMME INSTRUCTIONS FOR THE INTERNATIONAL EPD® SYSTEM.

THIS CERTIFICATE IS VALID FROM REGISTRATION (2020-05-04) UNTIL 2025-05-03, OR UNTIL THE EPD IS DEREGISTERED AND NO LONGER PUBLISHED AT EPDTURKEY.ORG AND WWW.ENVIRONDEC.COM.

SERHAT BATMAZ

EPD TURKEY, FULLY ALIGNED REGIONAL PROGRAMME OF INTERNATIONAL EPD® SYSTEM

TURKEY | SWEDEN 2020-05-27

ENVIRONMENTAL PRODUCT DECLARATION

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

Flooring

from AGT Ağaç Sanayi ve Tic. A.Ş.

EPD Registration Number: S-P-01915	**Publication Date:** 04.05.2020	**Revision Date:** 01.12.2021
Geographical Scope: Global	**Validity Date:** 03.05.2025	**Revision No:** V1.1

TURKEY EPD®

ENVIRONMENTAL PRODUCT DECLARATIONS

AGT Flooring

PROGRAMME INFORMATION

Programme	EPD Turkey, a fully aligned regional programme SÜRATAM – Turkish Centre for Sustainable Production Research & Design Nef 09 B Blok No:7/15 34415 Kagıthane/Istanbul, TURKEY www.epdturkey.org info@epdturkey.org	The International EPD® System EPD International AB Box 210 60 SE-100 31 Stockholm Sweden www.environdec.com info@environdec.com

Product Category Rules (PCR):
2019:14 Version 1.0, 2019-12-20, Construction Products and CPC 54 Construction Services and c-PCR-006 Wood and wood-based products for use in construction (EN 16485)

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

EPD process certification EPD verification X

Third party verifier: Vladimír Kocí, PhD
Approved by: The International EPD® System

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

YES NO X

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Revisions:
V1.1. : LCA Method change, Database and Software update.

COMPANY INFORMATION

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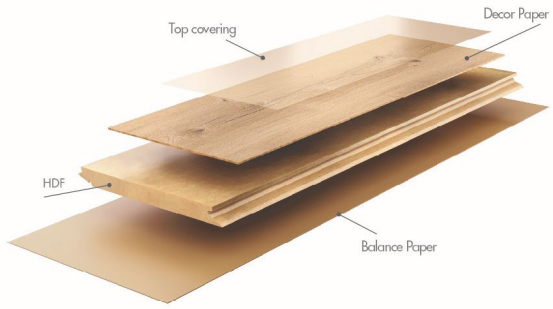
PRODUCT INFORMATION

AGT Flooring

For detailed product information:

Scan or Click !

AGT flooring is a multi-layer flooring product fused together with a lamination process.



UN CPC code: CPC 31442

Typical Material Composition

Material	Composition
HDF	%90-%97
Balance Paper and Auxiliary Materials	%1-5
Overlay and Auxiliary Materials	%1-5

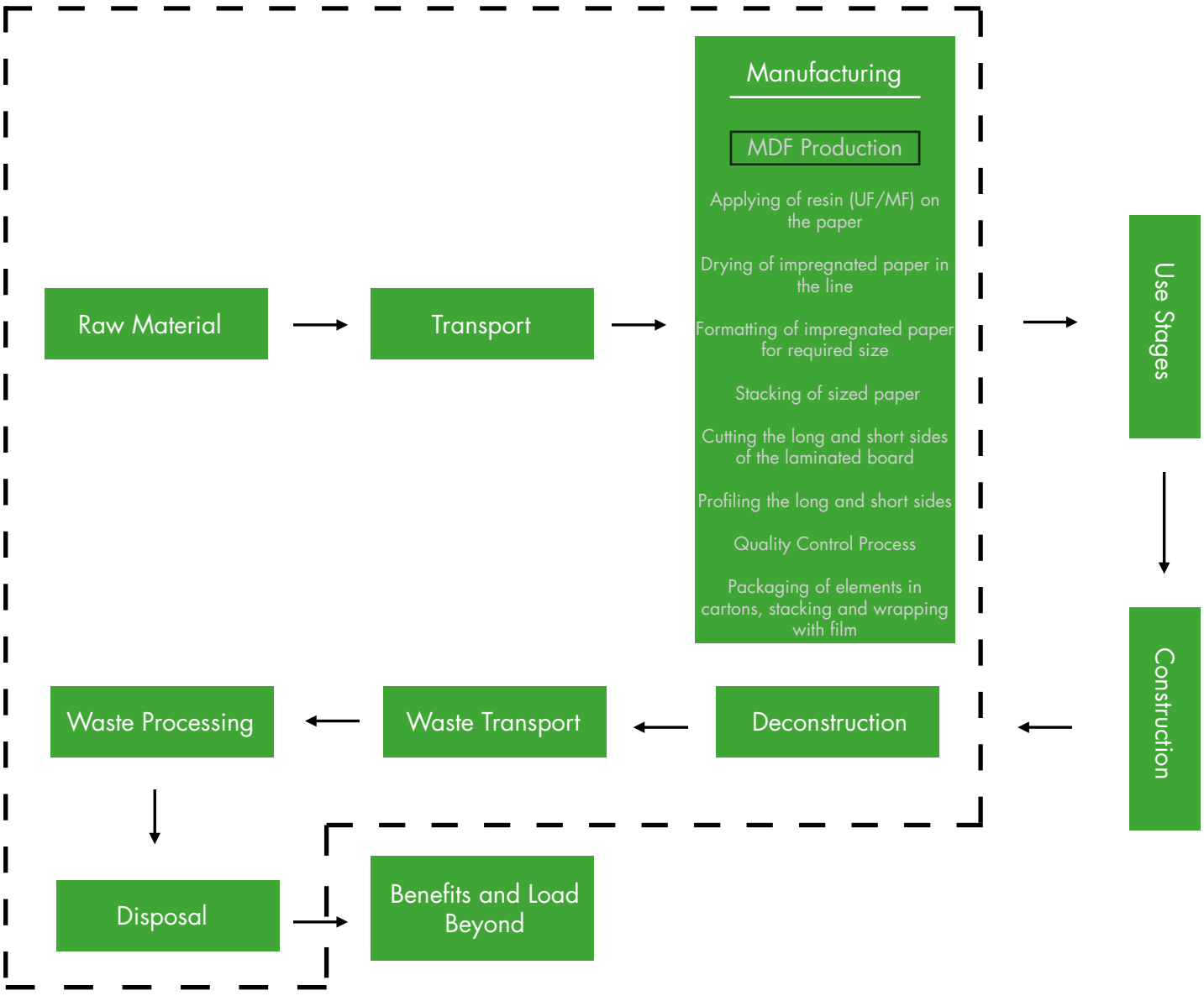
Technical Spesifications

			TEST RESULTS		
SPECIFICATION	UNIT	TEST STANDARD	AC3	AC4	AC5
THICKNESS DIFFERENCE BETWEEN ELEMENTS, T	mm	EN 13329	t average< 0.50mm t max-t min<0.50m	t average< 0.50mm t max-t min<0.50m	t average< 0.50mm t max-t min<0.50m
RESISTANCE TO ABRASION	Cycle	EN 438	Cycle>2000	Cycle>4000	Cycle>6000
SQUARENESS OF THE ELEMENT, Q	mm	EN 13329	q max< 0.2mm	q max< 0.2mm	Q max< 0.2mm
LENGTH OF SURFACE PANEL, 1	mm	EN 13329	1<1500mm 1 difference<0.5mm	1<1500mm 1 fark<0.5mm	1<1500mm 1 fark<0.5mm
			1>1500mm	1>1500mm	1>1500mm
			1 fark<0.3mm/m	1 fark<0.3mm/m	1 fark<0.3mm/m
WIDTH OF SURFACE PANEL, W	mm	EN 13329	w average diff. 0.10mm w max-w min<0.20mm	w average diff. 0.10mm w max-w min<0.20mm	w average diff. 0.10mm w max-w min<0.20mm
STRAIGHTNESS OF THE SURFACE LAYER	mm	EN 13329	≤0.30mm	≤0.30mm	≤0.30mm
SURFACE SMOOTHNESS		EN 13329	Fw concave < 0.15% Fw convex < 0.20% F1 concave < 0.50% Fl convex < 1.00%	Fw concave < 0.15% Fw convex < 0.20% F1 concave < 0.50% Fl convex < 1.00%	Fw concave < 0.15% Fw convex < 0.20% F1 concave < 0.50% Fl convex < 1.00%
GAP BETWEEN THE ELEMENTS, O	mm	EN 13329	O average<0.15mm O max. 0.20mm	O average<0.15mm O max. 0.20mm	O average<0.15mm O max. 0.20mm
HEIGHT DIFFERENCE BETWEEN THE ELEMENTS, H	mm	EN 13329	h average< 0.10mm h max<0.15mm	h average< 0.10mm h max<0.15mm	h average< 0.10mm h max<0.15mm
SURFACE STABILITY	N/mm²	EN 13329	AC3≥1 N/mm²	AC4≥1.25 N/mm²	AC5≥1.25 N/mm²
STRATCH RESISTANCE	N	EN 438	>3.5 N	>3.5 N	>3.5 N
ARMCHAIR WHEEL IMPACT	Cycle	EN 425	25.000 Devir. No change or damage in appearance	25.000 Devir. No change or damage in appearance	25.000 Devir. No change or damage in appearance
FURNITURE LEG IMPACT	-	EN 424	There should not be visible damage.	There should not be visible damage.	There should not be visible damage.
RESISTANCE TO HOT CONTAINERS	Class	EN 13329	Class 4	Class 4	Class 4
RESISTANCE TO WATER VAPOR	Class	EN 13329	Class 4	Class 4	Class 4
RESISTANCE TO STAIN	Class	EN 13329	Group 1 and 2: Class 5 Group 3: Class 4	Class 5	Class 5
SWELLING IN WATER FOR 24 HOURS	%	EN 13329	<%18	<%18	<%15
DENSITY	kg/m³	EN 323	850-900 kg/m³	850-900 kg/m³	850-900 kg/m³
TWIST RESISTANCE	N/mm²	EN 317	>40 N/mm²	>40 N/mm²	>40 N/mm²
ELASTICITY MODULE	N/mm²	EN 310	>3500 N/mm²	>3500 N/mm²	>3500 N/mm²
TENSILE STRENGTH	N/mm²	EN 319	≥1.2 N/mm²	≥1.2 N/mm²	≥1.2 N/mm²
SIZE	mm		8 mm * 191 mm * 1200 mm	8 mm * 191 mm * 1200 mm	8 mm * 191 mm * 1200 mm / 12 mm * 189 mm * 1195 mm

LCA INFORMATION

Declared Unit	1 m^2 of Flooring with an average weight 16.2 kg/m^2
Time Representativeness	2019
Reference Service Life (RSL)	RSL is 20 years provided that it complies with the conditions of use. RSL depends on application area and usage.
Database(s) and LCA Software used	Ecoinvent 3.6 and SimaPro 9.1
Description of system boundaries	Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D)

System Diagram



DESCRIPTION OF SYSTEM BOUNDARY

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw Materials Supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction	Transport	Waste processing	Disposal	Reuse-Recycling-Recovery Potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

The system boundary covers the production of raw materials, all relevant transport down to factory gate, manufacturing by AGT, deconstruction of the product from its construction site, transport of the deconstructed material to waste processing facility with an assumed distance of 200 km, waste processing and disposal.

Waste processing, while included in the system boundary, doesn't contribute to the environmental impacts due to the assumption that the product goes directly to landfill in disposal stage without any processing.

For benefits and loads beyond, a calorific value of 18.6 MJ per kg of MDF was assumed (Günther et al., 2012) to calculate the amount of avoided natural gas use for heating. AGT produces wooden packaging materials from its own process waste. Due to this, packaging materials were not included separately to avoid double counting.

For deconstruction stage, 0.323 MJ electricity use per kg of material was assumed (Gervasio et al., 2018). For environmental impact assessment, EF Method (adapted) which is available in SimaPro 9 was used.

Energy related indicators were calculated from Cumulative Energy Demand (LHV) and resource indicators were calculated using inventory flows. There are no co-product allocations within the LCA study underlying this EPD.

Hazardous and non-hazardous waste amounts were allocated using yearly production amounts of all AGT products. Primary data obtained from AGT is valid for year 2019. Ecoinvent 3.5 was used as secondary database.

The product contains formaldehyde which is a substance of very high concern (SVHC) and is subject to authorization under the REACH Regulation. For details, test results are provided in the additional information section.

LCA RESULTS

Environmentals Impacts for 1 m² Flooring by AGT							
Impact Category	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP - Fossil	kg CO_2 eq	4.85	0.368	0.125	0	0.058	4.79
GWP - Biogenic	kg CO_2 eq	-10.6	0.003	73.0E-6	0	0.700	0.001
GWP - Luluc	kg CO_2 eq	0.019	0.004	39.1E-6	0	14.5E-6	211E-6
GWP - Total	kg CO_2 eq	-5.70	0.374	0.125	0	0.758	4.79
ODP	kg CFC-11 eq	715E-9	10.4E-9	29.6E-9	0	21.7E-9	478E-9
AP	mol H+ eq	0.032	0.002	414E-6	0	0.001	0.008
EP - Freshwater	kg PO_4 eq	0.002	388E-6	10.6E-6	0	11.9E-6	75.9E-6
*EP - Freshwater	kg P eq	0.006	0.001	32.4E-6	0	36.3E-6	232E-6
EP - Marine	kg N eq	0.005	393E-6	91.9E-6	0	0.003	0.002
EP - Terrestrial	mol N eq	0.082	0.004	0.001	0	0.002	0.019
POCP	kg NMVOC	0.015	0.001	388E-6	0	0.001	0.007
ADPE	kg Sb eq	63.8E-6	886E-9	2.19E-6	0	518E-9	2.74E-6
ADPF	MJ	87.5	4.04	2.00	0	1.58	73.7
WDP	m^3 depriv.	6.32	0.172	0.007	0	0.007	0.162
PM	disease inc.	441E-9	10.3E-9	10.8E-9	0	10.9E-9	21.2E-9
IR	kBq U-235 eq	0.259	0.005	0.009	0	0.010	0.014
ETP - FW	CTUe	67.1	3.54	1.71	0	1.29	20.2
HTTP - C	CTUh	2.01E-9	64.9E-12	38.9E-12	0	37.8E-12	404E-12
HTTP - NC	CTUh	55.5E-9	3.13E-9	1.76E-9	0	1.56E-9	13.7E-9
SQP	Pt	784	0.233	2.25	0	4.06	3.07
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.						
Legend	A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A1-A3: Sum of A1, A2, and A3. A4: Transport to Site, A5: Installation, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary.						
* Eutrophication-freshwater is also provided in P as additional information.							

Resource use for 1 m² Flooring by AGT							
Resource	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	129	0.967	0.021	0	0.062	-0.134
PERM	MJ	0	0	0	0	0	0
PERT	MJ	304	1.06	0.047	0	0.091	-231
PENRE	MJ	87.5	4.04	2.00	0	1.58	-73.7
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	87.5	4.04	2.00	0	1.58	-73.7
SM	kg	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	-129
NRSF	MJ	0	0	0	0	0	0
FW	m^3	0.026	0.002	417E-6	0	0.002	-0.014
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 and output flows for 1 m² Flooring by AGT							
Flow	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	kg	0.015	0	0	0	0	0
NHWD	kg	3.75	0	0	0	0	0
RWD	kg	0	0	0	0	0	0
CRU	kg	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0
MER	kg	0	0	0	0	0	-6.96
EE (Electrical)	MJ	0	0	0	0	0	0
EE (Thermal)	MJ	0	0	0	0	0	-129
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, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary.						

Information on Biogenic Carbon Content

Results per functional or declared unit		
Biogenic Carbon Content	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	1.55

Note: 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2.

ADDITIONAL INFORMATION

Product | Catalogue

Please follow the product catalogue for more information, product details and images.

Scan or Click !

Product | Standarts

Flooring products manufactured by AGT follows the below standards:

Scan or Click !

- GOSTR CERTIFICATE
- CE 14041:2018
- TS EN 13329
- TS EN 717-1
- Blue Angel Ecolabel

Blue Angel Ecolabel | Environmentally Friendly Product

The flooring products manufactured by AGT have the Blue Angel Ecolabel.

The Blue Angel is the ecolabel of the federal government of Germany since 1978. The Blue Angel sets high standards for environmentally friendly product design and has proven itself over the past 40 years as a reliable guide for a more sustainable consumption.

VOC Emissions | Indoor Air Quality

Testing institute: Fraunhofer Institut für Holzforschung Wilhelm-Klauditz-Institut WKI
Test report: MAIC-2019-4905
Test object: Testing evaluation of a flooring sample according to the criteria of the Blue Angel "Low Emission Floor Coverings, Panels and Doors for interiors made of wood and wood based materials (DE-UZ 176)"
Sample: Natura, Concept (Effect Laminate Flooring, Thickness ≤ 12 mm)
Method: /DIN EN ISO 16000/ part 3, 6, 9 and 11

Name	Value (After 7 Days)	Unit
TVOC (C6-C16)	15	µg/m³
Summe SVOC (C16-C22)	0	µg/m³
R (dimensionless)	0.067	µg/m³
VOC without LCI	0	µg/m³
Carcinogenics	0	µg/m³

FRENCH VOC SPECIFICATION

Formaldehyde | Indoor Air Quality

Flooring: 0.005 mg/m³ – TS EN 717-1
Class : E0

REFERENCES

/GPI/ General Programme Instructions of the International EPD® System. Version 3.0

/ISO 9001/ Quality management systems – Requirements

/ISO 14001/ Enviroment Management System- Requirements

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

/ISO 14020:2000/ Environmental labels and declarations — General principles

/ISO 14025/ ISO 14025:2006 Preview Environmental labels and declarations – Type III environmental declarations – Principles and procedures

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

/ISO 45001/ Occupational Health & Safety Management System Certification - Requirements

/ Gervasio et al., 2018 /Model for Life Cycle Assessment of buildings LCA, JRC Technical Reports, 2018.

/ Günther et al. ,2012 /Calorific value of selected wood species and wood products, Springer.

/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 2.0, DATE 2019-12-20

/Ecoinvent/ Ecoinvent Centre, www.ecoinvent.org

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

CONTACT INFORMATION

Programme	EPD registered through fully aligned regional programme: EPD Turkey www.epdturkey.org TURKEY EPD® ENVIRONMENTAL PRODUCT DECLARATIONS	The International EPD® System www.environdec.com EPD® THE INTERNATIONAL EPD® SYSTEM
Programme Operator	EPD Turkey: SÜRATAM – Turkish Centre for Sustainable Production Research & Design Nef 09 B Blok No:7/15, 34415 Kagıthane / Istanbul, TURKEY info@suratam.org www.suratam.org	EPD International AB Box 210 60 SE-100 31 Stockholm, Sweden info@environdec.com
Owner of the Declaration	AGT Organize Sanayi Bölgesi 3. Kısım, 35. Cadde 07190 Türkiye / Antalya / Dösemealtı	Contact: Merve Akkaya Phone: +90 242 249 17 17 Fax: +90 242 249 17 27 www.agt.com.tr info@agt.com.tr
LCA practitioner and EPD Design	metsims Sustainability Consulting Turkey: Lalegül Sok. No:7/18 Kagıthane 34415 Istanbul, Turkey (+90) 212 281 13 33 infotr@metsims.com	United Kingdom: 4 Clear Water Place Oxford OX2 7NL (+44) 800 772 0185 info@metsims.com www.metsims.com
Indipendent Verifier	LCA studio	Vladimír Kocí, PhD LCA Studio Šárecká 5,16000 Prague 6 - Czech Republic www.lcastudio.cz

More than 60 Stores in 5 continents

AGT

www.agt.com.tr

ENVIRONMENTAL PRODUCT DECLARATION

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

Medium Density Fibreboard (Raw)

from AGT Ağaç Sanayi ve Tic. A.Ş.

EPD Registration Number: S-P-01912	**Publication Date:** 04.05.2020	**Revision Date:** 01.12.2021
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TURKEY EPD®

ENVIRONMENTAL PRODUCT DECLARATIONS

AGT

MDF

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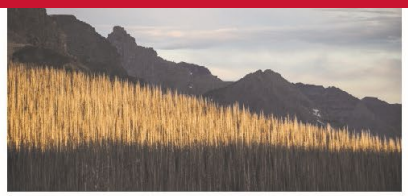
PRODUCT INFORMATION

AGT MDF



For detailed product information:

Scan or Click !

Medium-density fibreboard (MDF) is a wood product valued for its fabricability which allows precision joinery work and finishing. Medium Density Fibreboard is widely used to manufacture furniture. Medium Density Fibreboard can also be used as a building material. Medium Density Fibreboard panels are composed of wood, resin and wax.

The keystone of all AGT products is MDF which is manufactured at the new MDF plant using the latest technologies.

AGT Medium Density Fibreboard (Raw) is a wood product made from pine. Its applications include furniture production and construction.

UN CPC code: CPC 31441

Typical Material Composition

Material	Composition
Pine Wood	%90-95
Resin	%5-10
Other Materials	%0-1

Features of AGT MDF :

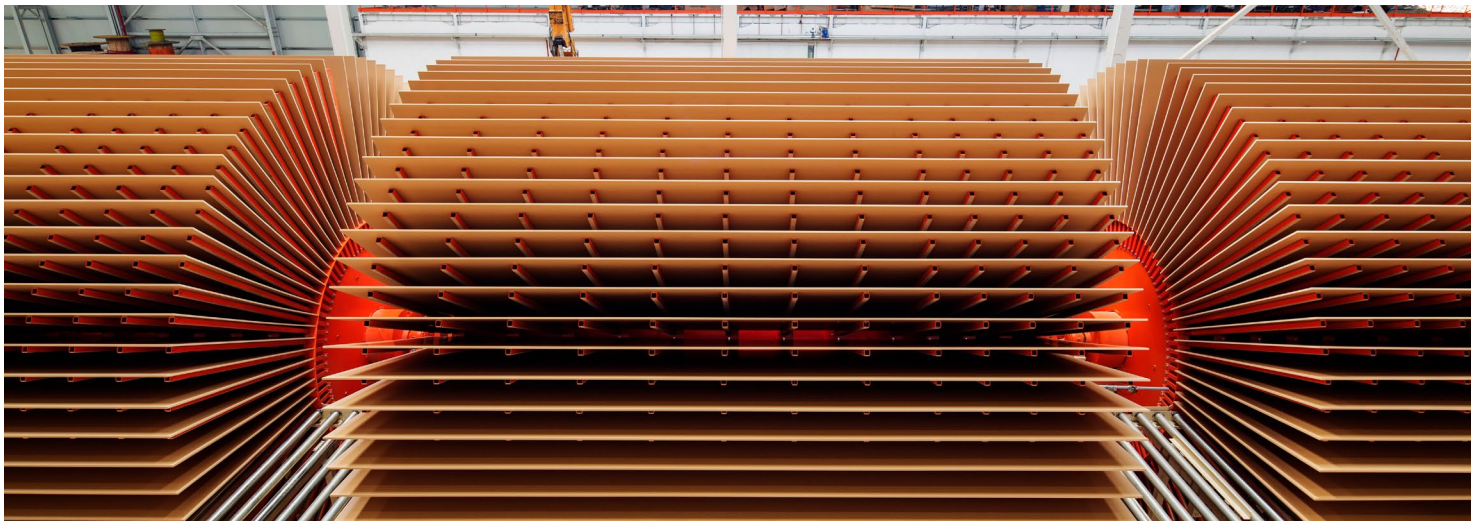
- Optimal density
- Outstanding surface treatment of superior quality
- Excellent processing capacity
- Balanced fiber dispersion
- High bending resistance
- High expansion resistance
- Strong trunk
- Paintable material
- High screw pull and hold strength

Available Dimensions

6 mm	8 mm	10 mm	12 mm	16 mm	18 mm	22 mm	25 mm	30 mm	40 mm
2100x2800	2100x2800	2100x2800	2100x2800	2100x2800	2100x2800	2100x2800	2100x2800	2100x2800	2100x2800
-	2440x2800	2440x2800	2440x2800	2440x2800	2440x2800	2440x2800	2440x2800	2440x2800	-
-	1820x3660	-	1820x3660	-	-	1820x3660	1820x3660	1820x3660	-

Technical Spesifications

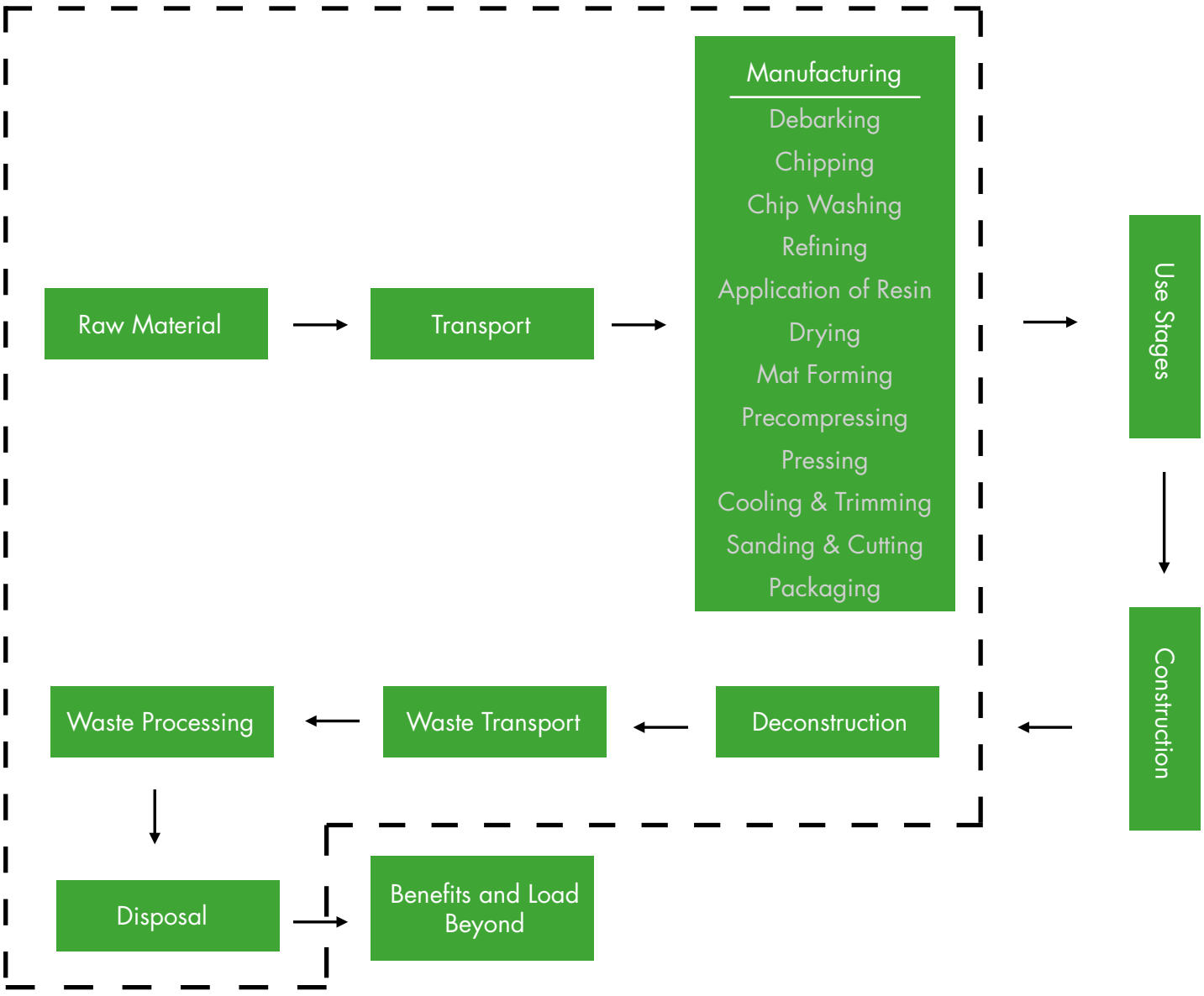
SPECIFICATION	UNIT	TEST STANDARD	THICKNESS (t) (mm)				
			6<t≤9	9<t≤12	12<t≤19	19<t≤30	30<t≤45
Tolerances on thickness	mm	EN 324-1 EN 622-1	±0,2			±0,3	
Tolerances on length and width	mm/m	EN 324-2 EN 622-1	± 2mm/m, maximum ±5 mm				
Edge straightness tolerance	mm/m	EN 324-2 EN 622-1	1.5				
Squareness tolerances	mm/m	EN 324-2 EN 622-1	2				
Water absorption (maximum)	%	EN 317	40	40	40	40	40
Swelling in Thickness 24 h (maximum)	%	EN 317	17	15	12	10	8
Vertical Internal Bond (minimum)	N/mm²	EN 319	0.65	0.6	0.55	0.55	0.5
Bending Strength (minimum)	N/mm²	EN 310	23	22	20	18	17
Modulus of Elasticity (minimum)	N/mm²	EN 310	2700	2500	2200	2100	1900
Screw Holding Strength Surface(minimum)	N	EN 320	-	-	900	900	900
Screw Holding Strength Edge (minimum)	N	EN 320	-	-	800	800	800
Surface Absorption (minimum)	mm	EN 382-1	250	250	250	250	250
Values were characterized material by %65 relative humidity and moisture content corresponding to 20 C temperature. T=thickness							
Water absorption value should be max %40 according to AGT Final Control's specifications.							



LCA INFORMATION

Declared Unit	1 m^3 of Medium-Density Fibreboard - MDF with an average density 700 kg/m^3
Time Representativeness	2019
Reference Service Life (RSL)	RSL is 10 years provided that it complies with the conditions of use. RSL depends on application area and usage.
Database(s) and LCA Software used	Ecoinvent 3.6 and SimaPro 9.1
Description of system boundaries	Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D)

System Diagram



DESCRIPTION OF SYSTEM BOUNDARY

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw Materials Supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction	Transport	Waste processing	Disposal	Reuse-Recycling-Recovery Potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

The system boundary covers the production of raw materials, all relevant transport down to factory gate, manufacturing by AGT, deconstruction of the product from its construction site, transport of the deconstructed material to waste processing facility with an assumed distance of 200 km, waste processing and disposal.

Waste processing, while included in the system boundary, doesn't contribute to the environmental impacts due to the assumption that the product goes directly to landfill in disposal stage without any processing.

For benefits and loads beyond, a calorific value of 18.6 MJ per kg of MDF was assumed (Günther et al., 2012) to calculate the amount of avoided natural gas use for heating. AGT produces wooden packaging materials from its own process waste. Due to this, packaging materials were not included separately to avoid double counting.

For deconstruction stage, 0.323 MJ electricity use per kg of material was assumed (Gervasio et al., 2018). For environmental impact assessment, EF Method (adapted) which is available in SimaPro 9 was used.

Energy related indicators were calculated from Cumulative Energy Demand (LHV) and resource indicators were calculated using inventory flows. There are no co-product allocations within the LCA study underlying this EPD.

Hazardous and non-hazardous waste amounts were allocated using yearly production amounts of all AGT products. Primary data obtained from AGT is valid for year 2019. Ecoinvent 3.5 was used as secondary database.

The product contains formaldehyde which is a substance of very high concern (SVHC) and is subject to authorization under the REACH Regulation. For details, test results are provided in the additional information section.

LCA RESULTS

Environmentals Impacts for 1 m³ MDF by AGT							
Impact Category	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP - Fossil	kg CO_2 eq	365	37.0	12.6	0	5.78	-482
GWP - Biogenic	kg CO_2 eq	-1118	0.337	0.007	0	70.4	-0.103
GWP - Luluc	kg CO_2 eq	1.86	0.353	0.004	0	0.001	-0.021
GWP - Total	kg CO_2 eq	-751	37.7	12.6	0	76.2	-482
ODP	kg CFC-11 eq	48.0E-6	1.04E-6	2.98E-6	0	2.18E-6	-48.1E-6
AP	mol H+ eq	2.39	0.243	0.042	0	0.052	-0.762
*EP - Freshwater	kg P eq	0.168	0.039	0.001	0	0.001	-0.008
EP - Freshwater	kg PO_4 eq	0.515	0.119	0.003	0	0.004	-0.023
EP - Marine	kg N eq	0.380	0.040	0.009	0	0.261	-0.180
EP - Terrestrial	mol N eq	5.71	0.359	0.101	0	0.211	-1.944
POCP	kg NMVOC	1.22	0.098	0.039	0	0.077	-0.732
ADPE	kg Sb eq	0.006	89.1E-6	220E-6	0	52.1E-6	-276E-6
ADPF	MJ	5897	406	201	0	159	-7412
WDP	m^3 depriv.	421	17.3	0.731	0	0.728	-16.3
PM	disease inc.	29.3E-6	1.04E-6	1.09E-6	0	1.10E-6	-2.13E-6
IR	kBq U-235 eq	16.5	0.549	0.954	0	1.010	-1.41
ETP - FW	CTUe	5244	356	172	0	130	-2032
HTTP - C	CTUh	1.93E-6	6.53E-9	3.91E-9	0	3.81E-9	-40.7E-9
HTTP - NC	CTUh	4.56E-6	315E-9	177E-9	0	157E-9	-1.38E-6
SQP	Pt	82521	23.4	227	0	408	-309
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.						
Legend	A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A1-A3: Sum of A1, A2, and A3. A4: Transport to Site, A5: Installation, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary.						
* Eutrophication-freshwater is also provided in P as additional information.							

Resource use for 1 m³ MDF by AGT							
Resource	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	13.0E+3	97.2	2.16	0	6.25	-13.4
PERM	MJ	0	0	0	0	0	0
PERT	MJ	27.3E+3	97.2	2.16	0	6.25	-13.4
PENRE	MJ	5898	406	201	0	159	-7412
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	5898	406	201	0	159	-7412
SM	kg	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	13.0E+3
NRSF	MJ	0	0	0	0	0	0
FW	m^3	1.32	0.155	0.042	0	0.185	-1.41
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 and output flows for 1 m³ MDF by AGT							
Flow	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	kg	0.847	0	0	0	0	0
NHWD	kg	212	0	0	0	0	0
RWD	kg	0	0	0	0	0	0
CRU	kg	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0
MER	kg	0	0	0	0	0	700
EE (Electrical)	MJ	0	0	0	0	0	0
EE (Thermal)	MJ	0	0	0	0	0	13.0E+3
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, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary.						

Information on Biogenic Carbon Content

Results per functional or declared unit		
Biogenic Carbon Content	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	305

Note: 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2.

ADDITIONAL INFORMATION

Product | Catalogue

Please follow the product catalogue for more information, product details and images.

Scan or Click !

Product | Standarts

MDF products manufactured by AGT follows the below standards:

- TS EN 717-1
- TS EN 622-5

Scan or Click !

VOC Emissions | Indoor Air Quality

Volatile Organic Compounds (VOC) tests and evidence have been carried out on the product, according to ISO 16000 parts.

Report Number : TURT200007441

Formaldehyde | Indoor Air Quality

E1 ≤ 8 mg /100 gr
8 mg /100 gr < E2 ≤ 30 mg /100 gr

REFERENCES

/GPI/ General Programme Instructions of the International EPD® System. Version 3.0

/ISO 9001/ Quality management systems – Requirements

/ISO 14001/ Enviroment Management System- Requirements

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

/ISO 14020:2000/ Environmental labels and declarations — General principles

/ISO 14025/ ISO 14025:2006 Preview Environmental labels and declarations – Type III environmental declarations – Principles and procedures

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

/ISO 45001/ Occupational Health & Safety Management System Certification - Requirements

/ Gervasio et al., 2018 /Model for Life Cycle Assessment of buildings LCA, JRC Technical Reports, 2018.

/ Günther et al. ,2012 /Calorific value of selected wood species and wood products, Springer.

/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 2.0, DATE 2019-12-20

/Ecoinvent/ Ecoinvent Centre, www.ecoinvent.org

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

CONTACT INFORMATION

Programme	EPD registered through fully aligned regional programme: EPD Turkey www.epdturkey.org TURKEY EPD® ENVIRONMENTAL PRODUCT DECLARATIONS	The International EPD® System www.environdec.com EPD® THE INTERNATIONAL EPD® SYSTEM
Programme Operator	EPD Turkey: SÜRATAM – Turkish Centre for Sustainable Production Research & Design Nef 09 B Blok No:7/15, 34415 Kagıthane / Istanbul, TURKEY info@suratam.org www.suratam.org	EPD International AB Box 210 60 SE-100 31 Stockholm, Sweden info@environdec.com
Owner of the Declaration	AGT Organize Sanayi Bölgesi 3. Kısım, 35. Cadde 07190 Türkiye / Antalya / Dösemealtı	Contact: Merve Akkaya Phone: +90 242 249 17 17 Fax: +90 242 249 17 27 www.agt.com.tr info@agt.com.tr
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Indipendent Verifier	LCA studio	Vladimír Kocí, PhD LCA Studio Šárecká 5,16000 Prague 6 - Czech Republic www.lcastudio.cz

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AGT

www.agt.com.tr

ENVIRONMENTAL PRODUCT DECLARATION

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

Melamine Faced MDF

from AGT Ağaç Sanayi ve Tic. A.Ş.

EPD Registration Number: S-P-01913	**Publication Date:** 04.05.2020	**Revision Date:** 01.12.2021
Geographical Scope: Global	**Validity Date:** 03.05.2025	**Revision No:** V1.1

TURKEY EPD®

ENVIRONMENTAL PRODUCT DECLARATIONS

AGT

Melamine Faced MDF

PROGRAMME INFORMATION

Programme	EPD Turkey, a fully aligned regional programme SÜRATAM – Turkish Centre for Sustainable Production Research & Design Nef 09 B Blok No:7/15 34415 Kagıthane/Istanbul, TURKEY www.epdturkey.org info@epdturkey.org	The International EPD® System EPD International AB Box 210 60 SE-100 31 Stockholm Sweden www.environdec.com info@environdec.com

Product Category Rules (PCR):
2019:14 Version 1.0, 2019-12-20, Construction Products and CPC 54 Construction Services and c-PCR-006 Wood and wood-based products for use in construction (EN 16485)

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

EPD process certification EPD verification X

Third party verifier: Vladimír Kocí, PhD
Approved by: The International EPD® System

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

YES NO X

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. For further information about comparability, see EN 15804 and ISO 14025.

Revisions:
V1.1. : LCA Method change, Database and Software update.

COMPANY INFORMATION

AGT; (Technology That Develops the Wood) which started its activities in Antalya in 1984 with the dream of processing and developing the wood specifically for individuals and institutions with developing technology, operates today as one of the world's leading companies in the furniture components industry. In its modern production facilities established in Antalya Organized Industrial Zone on a total area of 450 thousand square meters; AGT provides service to the furniture and decoration sectors with MDF, MF MDF, Panel, Profile production and it also provides service to the construction sector with flooring and skirting board production.

Ranked in Turkey's Top 500 Industrial Enterprises, our company has obtained approximately 50% of the turnover of over 1 billion TL from exports in 2019. With our employees over 1000 people, we can produce all the wooden materials required for the interior within our own structure.

Since the first day we were founded, we have not compromised our ethical value and quality principles. For all our customers, employees and business partners without considering them on small or big scale; quality, trend and development is still our main target. Today, we add color, elegance and sustainable vitality to the living space of millions of people who value quality and aesthetics with our more than 1000 sales points on 5 continents. In addition to its widespread dealer channel within Turkey; AGT, which has sales points on 5 continents, exports approximately 90 countries, primarily to Canada, Eastern Europe-Balkans, Mena and Russia.

Quality is a target that is constantly being renewed and developed according to the conditions, not reached. With a reliable, organized and institutionalized business approach in the furniture components industry; our quality policy is to increase our production quality by closely following the developing technology, to fully meet the expectations and wishes of our customers, to increase the efficiency of the quality management system, to always be a preferred brand in national and international markets by ensuring the continuity of our place in the sector.

Today, we will continue to be the choice of those who care about quality, aesthetics and elegance with our determination to be a leading player that guides the market not only in our country but also in the global arena along with our vision of "Technology That Develops the Wood", thinking long-term and strategically, prioritizing the compliance with international standards.

The company has ISO 9001 Quality Management System, ISO 14001 Environment Management System, ISO 45001 Occupational Health & Safety Management System, ISO 10002 Customer Satisfaction Management System, ISO 27001 Information Security Management System, ISO 50001 Energy Management System Certification, PEFC (Programme for the Endorsement of Forest Certification), FSC(Forest Stewardship Council) and TSCA Certification.

PRODUCT INFORMATION

AGT **Melamine Faced MDF**

For detailed product information:

Scan or Click !

Medium-density fibreboard (MDF) is a wood product valued for its fabricability which allows precision joinery work and finishing. Medium Density Fibreboard is widely used to manufacture furniture. Medium Density Fibreboard can also be used as a building material. Medium Density Fibreboard panels are composed of wood, resin and wax.

AGT Medium Density Fibreboard (Raw) is a wood product made from pine. Its applications include furniture production and construction.

Melamine Faced MDF is obtained by coating the decorative design on the MDF board, which is made by firing melamine resin and glue with technological impregnation machines.

UN CPC code: CPC 31441

Typical Material Composition

Material	Composition
MDF	%98-%99
Impregnated Paper and Auxiliary Materials	%0-2

Features of AGT MDF :

- 70 decor alternatives
- Various surface alternatives
- Trendy modern decors
- Perfect harmony of rich patterns with surface structure
- High bending resistance
- High expansion resistance
- Strong frame
- High screw pull and hold strength

Available Dimensions

	2100 mm X 2800 mm				1830 mm X 3660 mm	
	One Face*		Double Face		Double Face	
6 mm	x	x	x	x		
8 mm	x	x	x	x		
10 mm			x	x		
16 mm			x	x	x	x
18 mm	x	x	x	x	x	x
22 mm			x	x		
25 mm			x	x		
30 mm			x	x		
40 mm			x	x		

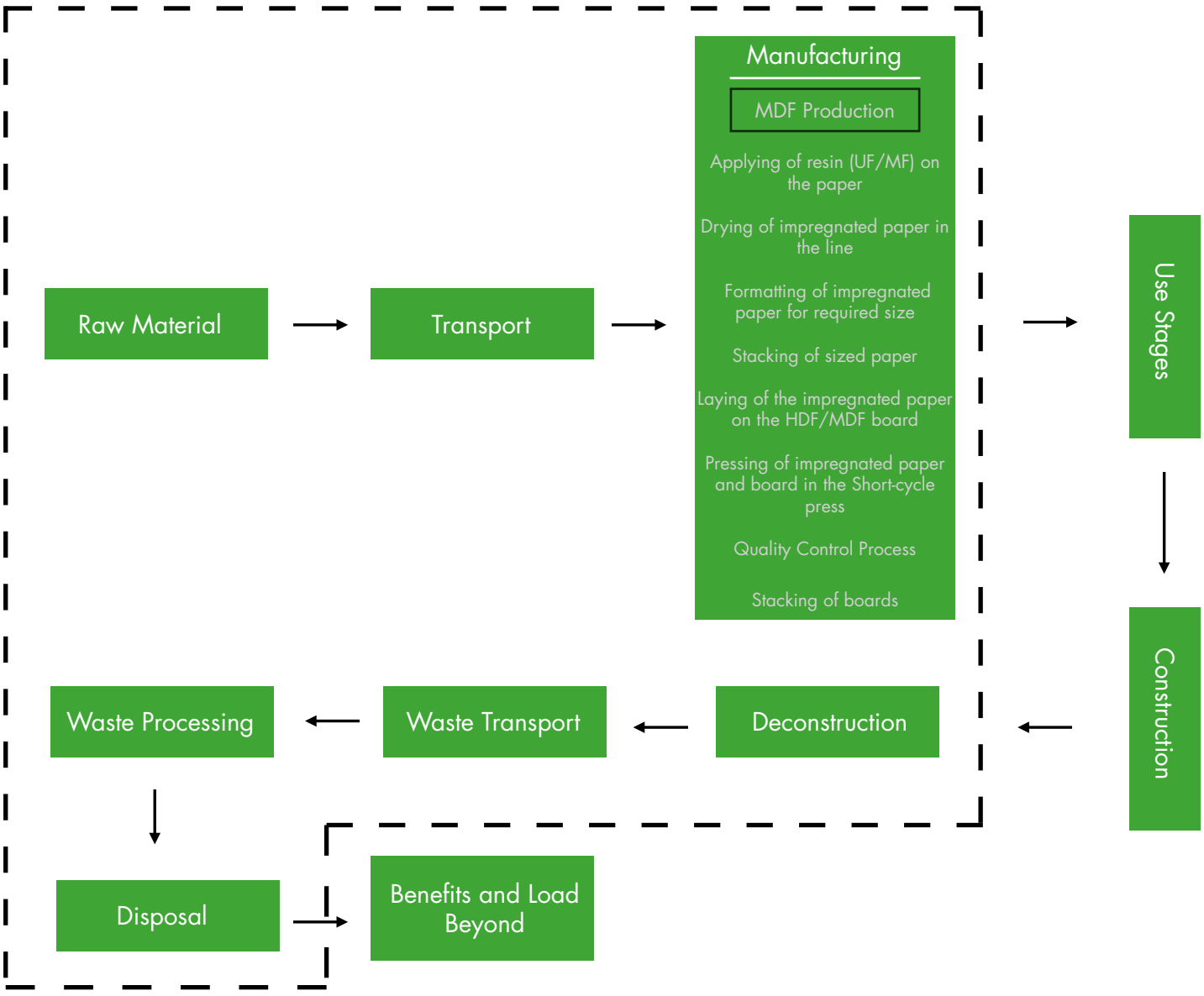
Technical Spesifications

AGT MDFLAM TECHNICAL SPECIFICATIONS			
SPECIFICATION	UNIT	TEST STANDARD	TEST RESULT
DENSİTY	Kg/m^3 ±%7	EN 323	720
THİCKNESS	mm	EN 324-1	18
TOLERANCES ON THİCKNESS	mm	EN 324-1 EN 622-1	±0.2
TOLERANCES ON LENGTH AND WİDTH	mm/m	EN 324-2 EN 622-1	± 2mm/m, maximum ±5 mm
WATER İNTAKE (MAXİMUM)	%	EN 317	20
SWELLİNG İN THİCKNESS 24 H (MAXİMUM)	%	EN 317	1.8
SCREW HOLDING (SURFACE) (MIN.)	N	EN 320	1000
SCREW HOLDING (EDGE) (MIN.)	N	EN 320	900
RESİSTANCE TO ABRASİON	Cycle	TS EN 438-2	Solid Colour: 250 Patem Design: 75
RESİSTANCE TO SCRATCHİNG	N	TS EN 438-2	HGS: 3.5 N NTR:5 N
RESİSTANCE TO DRY HEAT		TS EN 14323	5 (no visible change)
RESİSTANCE TO STEAM		TS EN 14323	5 (no visible change)
RESİSTANCE TO CRACKING		TS EN 14323	5 (no visible change)
RESİSTANCE TO STAİN		TS EN 14323	5 (no visible change)
POROSİTY(SURFACE)		AGT surface control standard	5 (no defect)
RELEASE OF FORMALDEHYDE	mg/m^3	TS EN 717-1	0.016- E0 Class
COLOUR MEASUREMENT	ΔE	TS 12552	ΔE≤1

LCA INFORMATION

Declared Unit	1 m^2 of Melamine Faced MDF with an average weight 26.6 kg/m^2
Time Representativeness	2019
Reference Service Life (RSL)	RSL is 10 years provided that it complies with the conditions of use. RSL depends on application area and usage.
Database(s) and LCA Software used	Ecoinvent 3.6 and SimaPro 9.1
Description of system boundaries	Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D)

System Diagram



DESCRIPTION OF SYSTEM BOUNDARY

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw Materials Supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction	Transport	Waste processing	Disposal	Reuse-Recycling-Recovery Potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

The system boundary covers the production of raw materials, all relevant transport down to factory gate, manufacturing by AGT, deconstruction of the product from its construction site, transport of the deconstructed material to waste processing facility with an assumed distance of 200 km, waste processing and disposal.

Waste processing, while included in the system boundary, doesn't contribute to the environmental impacts due to the assumption that the product goes directly to landfill in disposal stage without any processing.

For benefits and loads beyond, a calorific value of 18.6 MJ per kg of MDF was assumed (Günther et al., 2012) to calculate the amount of avoided natural gas use for heating. AGT produces wooden packaging materials from its own process waste. Due to this, packaging materials were not included separately to avoid double counting.

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Energy related indicators were calculated from Cumulative Energy Demand (LHV) and resource indicators were calculated using inventory flows. There are no co-product allocations within the LCA study underlying this EPD.

Hazardous and non-hazardous waste amounts were allocated using yearly production amounts of all AGT products. Primary data obtained from AGT is valid for year 2019. Ecoinvent 3.5 was used as secondary database.

The product contains formaldehyde which is a substance of very high concern (SVHC) and is subject to authorization under the REACH Regulation. For details, test results are provided in the additional information section.

LCA RESULTS

Environmentals Impacts for 1 m² MF - MDF by AGT							
Impact Category	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP - Fossil	kg CO_2 eq	11.7	0.655	0.223	0	0.102	-8.54
GWP - Biogenic	kg CO_2 eq	-20.0	0.006	130E-6	0	1.25	-0.002
GWP - Luluc	kg CO_2 eq	0.037	0.006	69.6E-6	0	25.9E-6	-376E-6
GWP - Total	kg CO_2 eq	-8.26	0.667	0.223	0	1.35	-8.54
ODP	kg CFC-11 eq	2.00E-6	18.5E-9	52.8E-9	0	38.6E-9	-851E-9
AP	mol H+ eq	0.076	0.004	0.001	0	0.001	-0.013
*EP - Freshwater	kg P eq	0.004	0.001	18.8E-6	0	21.1E-6	-135E-6
EP - Freshwater	kg PO_4 eq	0.012	0.002	57.6E-6	0	64.7E-6	-414E-6
EP - Marine	kg N eq	0.010	0.001	164E-6	0	0.005	-0.003
EP - Terrestrial	mol N eq	0.196	0.006	0.002	0	0.004	-0.034
POCP	kg NMVOC	0.030	0.002	0.001	0	0.001	-0.013
ADPE	kg Sb eq	164E-6	1.58E-6	3.91E-6	0	924E-9	-4.89E-6
ADPF	MJ	223	7.20	3.558	0	2.82	-131
WDP	m^3 depriv.	18.8	0.306	0.013	0	0.013	-0.288
PM	disease inc.	1.13E-6	18.4E-9	19.3E-9	0	19.4E-9	-37.7E-9
IR	kBq U-235 eq	0.674	0.010	0.017	0	0.018	-0.025
ETP - FW	CTUe	156	6.30	3.05	0	2.30	-36.0
HTTP - C	CTUh	4.66E-9	116E-12	69.3E-12	0	67.4E-12	-720E-12
HTTP - NC	CTUh	128E-9	5.58E-9	3.14E-9	0	2.77E-9	-24.4E-9
SQP	Pt	1503	0.415	4.015	0	7.23	-5.48
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.						
Legend	A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A1-A3: Sum of A1, A2, and A3. A4: Transport to Site, A5: Installation, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary.						
* Eutrophication-freshwater is also provided in P as additional information.							

Resource use for 1 m² MF - MDF by AGT							
Resource	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	239	1.72	0.038	0	0.111	-0.238
PERM	MJ	0	0	0	0	0	0
PERT	MJ	239	1.72	0.038	0	0.111	-0.238
PENRE	MJ	223	7.20	3.56	0	2.82	-131
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	223	7.20	3.56	0	2.82	-131
SM	kg	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	-231
NRSF	MJ	0	0	0	0	0	0
FW	m^3	0.040	0.003	0.001	0	0.003	-0.025
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 and output flows for 1 m² MF - MDF by AGT							
Flow	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	kg	0.015	0	0	0	0	0
NHWD	kg	3.75	0	0	0	0	0
RWD	kg	0	0	0	0	0	0
CRU	kg	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0
MER	kg	0	0	0	0	0	-26.6
EE (Electrical)	MJ	0	0	0	0	0	0
EE (Thermal)	MJ	0	0	0	0	0	-495
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, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary.						

Information on Biogenic Carbon Content

Results per functional or declared unit		
Biogenic Carbon Content	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	2.25

Note: 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2.

ADDITIONAL INFORMATION

Product | Catalogue

Please follow the product catalogue for more information, product details and images.

Scan or Click !

Product | Standarts

MDF LAM products manufactured by AGT follows the below standards:

Scan or Click !

- TS EN 14322
- TS EN ISO 12460-3
- TS-EN-717-1

VOC Emissions | Indoor Air Quality

Volatile Organic Compounds (VOC) tests and evidence have been carried out on the product, according to ISO 16000 parts.

Report Number: TURT200046258

Formaldehyde | Indoor Air Quality

MF - MDF: 0.016 mg/m^3, (TS-EN-717-1)
Class : E0

REFERENCES

/GPI/ General Programme Instructions of the International EPD® System. Version 3.0

/ISO 9001/ Quality management systems – Requirements

/ISO 14001/ Enviroment Management System- Requirements

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

/ISO 14020:2000/ Environmental labels and declarations — General principles

/ISO 14025/ ISO 14025:2006 Preview Environmental labels and declarations – Type III environmental declarations – Principles and procedures

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

/ISO 45001/ Occupational Health & Safety Management System Certification - Requirements

/ Gervasio et al., 2018 /Model for Life Cycle Assessment of buildings LCA, JRC Technical Reports, 2018.

/ Günther et al. ,2012 /Calorific value of selected wood species and wood products, Springer.

/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 2.0, DATE 2019-12-20

/Ecoinvent/ Ecoinvent Centre, www.ecoinvent.org

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

CONTACT INFORMATION

Programme	EPD registered through fully aligned regional programme: EPD Turkey www.epdturkey.org TURKEY EPD® ENVIRONMENTAL PRODUCT DECLARATIONS	The International EPD® System www.environdec.com EPD® THE INTERNATIONAL EPD® SYSTEM
Programme Operator	EPD Turkey: SÜRATAM – Turkish Centre for Sustainable Production Research & Design Nef 09 B Blok No:7/15, 34415 Kagıthane / Istanbul, TURKEY info@suratam.org www.suratam.org	EPD International AB Box 210 60 SE-100 31 Stockholm, Sweden info@environdec.com
Owner of the Declaration	AGT Organize Sanayi Bölgesi 3. Kısım, 35. Cadde 07190 Türkiye / Antalya / Dösemealtı	Contact: Merve Akkaya Phone: +90 242 249 17 17 Fax: +90 242 249 17 27 www.agt.com.tr info@agt.com.tr
LCA practitioner and EPD Design	metsims Sustainability Consulting Turkey: Lalegül Sok. No:7/18 Kagıthane 34415 Istanbul, Turkey (+90) 212 281 13 33 infotr@metsims.com	United Kingdom: 4 Clear Water Place Oxford OX2 7NL (+44) 800 772 0185 info@metsims.com www.metsims.com
Indipendent Verifier	LCA studio	Vladimír Kocí, PhD LCA Studio Šárecká 5,16000 Prague 6 - Czech Republic www.lcastudio.cz

More than 60 Stores in 5 continents

AGT

www.agt.com.tr

ENVIRONMENTAL PRODUCT DECLARATION

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

MDF Panels and Profiles

from AGT Ağaç Sanayi ve Tic. A.Ş.

EPD Registration Number: S-P-01914	**Publication Date:** 04.05.2020	**Revision Date:** 01.12.2021
Geographical Scope: Global	**Validity Date:** 03.05.2025	**Revision No:** V1.1

TURKEY EPD®

ENVIRONMENTAL PRODUCT DECLARATIONS

AGT Panel

AGT Profile

PROGRAMME INFORMATION

Programme	EPD Turkey, a fully aligned regional programme SÜRATAM – Turkish Centre for Sustainable Production Research & Design Nef 09 B Blok No:7/15 34415 Kagıthane/Istanbul, TURKEY www.epdturkey.org info@epdturkey.org	The International EPD® System EPD International AB Box 210 60 SE-100 31 Stockholm Sweden www.environdec.com info@environdec.com

Product Category Rules (PCR):
2019:14 Version 1.0, 2019-12-20, Construction Products and CPC 54 Construction Services and c-PCR-006 Wood and wood-based products for use in construction (EN 16485)

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

EPD process certification EPD verification X

Third party verifier: Vladimír Kocí, PhD
Approved by: The International EPD® System

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

YES NO X

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. For further information about comparability, see EN 15804 and ISO 14025.

Revisions:
V1.1. : LCA Method change, Database and Software update.

COMPANY INFORMATION

AGT; (Technology That Develops the Wood) which started its activities in Antalya in 1984 with the dream of processing and developing the wood specifically for individuals and institutions with developing technology, operates today as one of the world's leading companies in the furniture components industry. In its modern production facilities established in Antalya Organized Industrial Zone on a total area of 450 thousand square meters; AGT provides service to the furniture and decoration sectors with MDF, MF MDF, Panel, Profile production and it also provides service to the construction sector with flooring and skirting board production.

Ranked in Turkey's Top 500 Industrial Enterprises, our company has obtained approximately 50% of the turnover of over 1 billion TL from exports in 2019. With our employees over 1000 people, we can produce all the wooden materials required for the interior within our own structure.

Since the first day we were founded, we have not compromised our ethical value and quality principles. For all our customers, employees and business partners without considering them on small or big scale; quality, trend and development is still our main target. Today, we add color, elegance and sustainable vitality to the living space of millions of people who value quality and aesthetics with our more than 1000 sales points on 5 continents. In addition to its widespread dealer channel within Turkey; AGT, which has sales points on 5 continents, exports approximately 90 countries, primarily to Canada, Eastern Europe-Balkans, Mena and Russia.

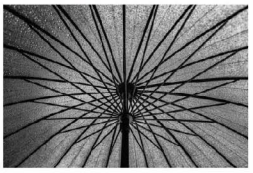
Quality is a target that is constantly being renewed and developed according to the conditions, not reached. With a reliable, organized and institutionalized business approach in the furniture components industry; our quality policy is to increase our production quality by closely following the developing technology, to fully meet the expectations and wishes of our customers, to increase the efficiency of the quality management system, to always be a preferred brand in national and international markets by ensuring the continuity of our place in the sector.

Today, we will continue to be the choice of those who care about quality, aesthetics and elegance with our determination to be a leading player that guides the market not only in our country but also in the global arena along with our vision of "Technology That Develops the Wood", thinking long-term and strategically, prioritizing the compliance with international standards.

The company has ISO 9001 Quality Management System, ISO 14001 Environment Management System, ISO 45001 Occupational Health & Safety Management System, ISO 10002 Customer Satisfaction Management System, ISO 27001 Information Security Management System, ISO 50001 Energy Management System Certification, PEFC (Programme for the Endorsement of Forest Certification), FSC(Forest Stewardship Council) and TSCA Certification.

PRODUCT INFORMATION

AGT **Panel**



For detailed product information:

Scan or Click !

AGT Panel is manufactured by using world class MDF of AGT and it presents colourful solutions special for every venue. PVC foil coating which has superior surface quality is what brings in rich color choices to it... Moreover AGT Panel could be manufactured in demanded size and colors as well as standard colors.

There are four types of AGT Panel: High Gloss, Soft Touch, Acrylic and Supramat.

UN CPC code: CPC 31441

Typical Material Composition

Material	Composition
MDF	%90-%55
Impregnated Paper and Auxiliary Materials	%1-3
Foil and Auxiliary Materials	%3-5

Available Dimensions

	1220 mm X 2800 mm	
	One Face	Double Face
8 mm	x	
18 mm	x	x

Features of AGT Panel:

- More than 100 color alternatives (Matte and High Gloss)
- High expansion resistance
- Trendy modern decors
- Perfect harmony of rich patterns with surface structure
- High bending resistance
- Strong frame
- High screw pull and hold strength

PRODUCT INFORMATION

AGT Profile

For detailed product information:

Scan or Click !

AGT Profile made of AGT MDF can be used with panels and other AGT products. Thickening profiles, edge and cover profiles, cap and corner bands, skirting boards, surface profiles and table legs are and other products are manufactured produced in many backgrounds.

UN CPC code: CPC 31441

Typical Material Composition

Material	Composition
MDF	%90-%95
Impregnated Paper and Auxiliary Materials	%1-3
Foil and Auxiliary Materials	%3-5

Available Dimensions

- 2800 mm (Profile Length)
- Products of diffrent thickness

and height according to profile types

Features of AGT Profile :

- More than 100 color alternatives
- More than 4000 models
- Perfect Harmony Of Rich Patterns With Other AGT Products
- High bending resistance
- Trendy modern decors

Technical Spesifications

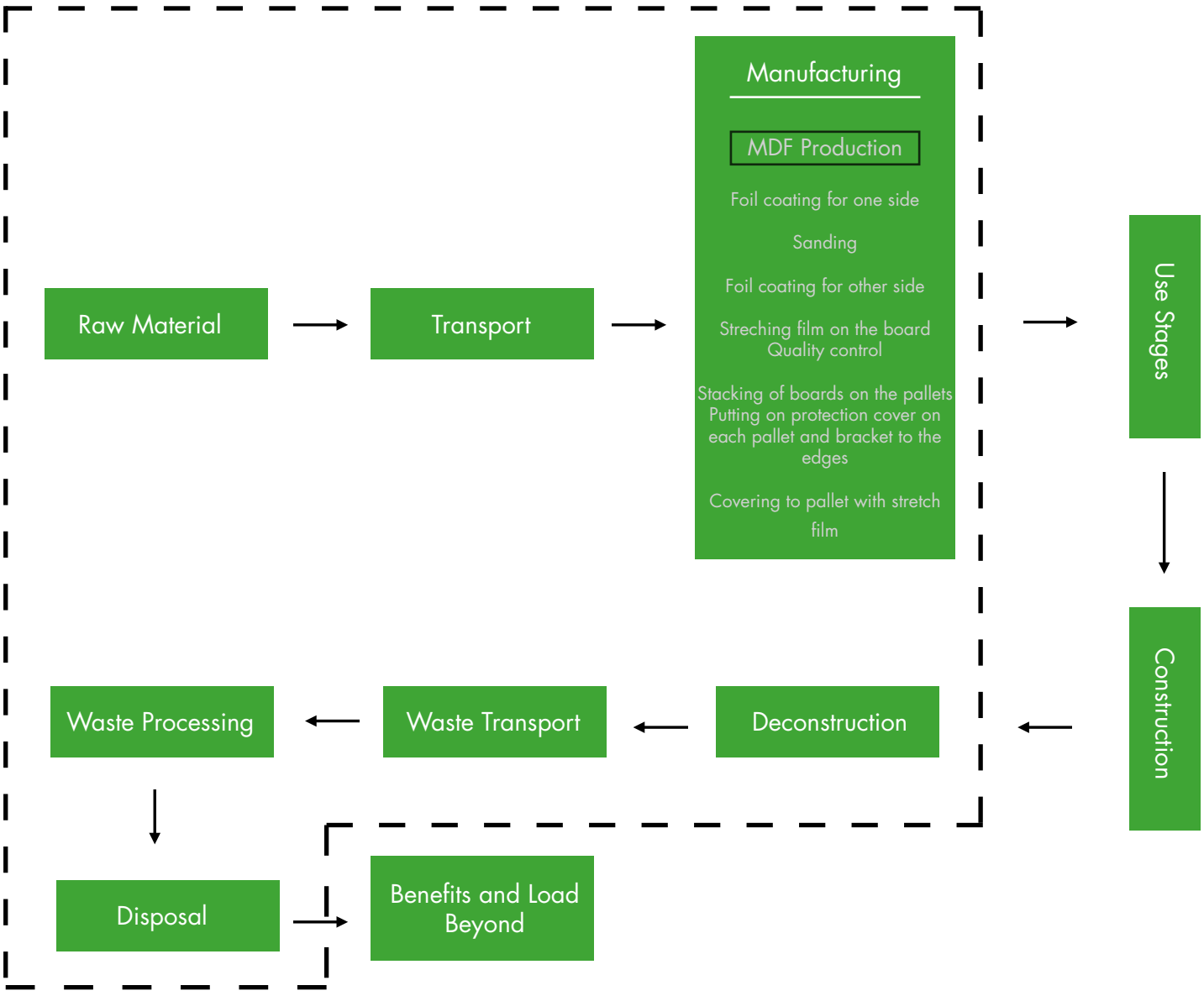
PROPERTIES OF AGT FIBER SHEET PANEL				
SPECIFICATION	UNIT	TEST STANDARD	REQUIRED VALUE	RESULTS
ADHESIVE RESISTANCE (FRONT SURFACE)	N/mm²	EN 323	≥ 0.55	1
ADHESIVE RESISTANCE (BACK SURFACE)	N/mm²	EN 323	≥ 0.55	0.70
TEMPERATURE RESISTANCE (FRONT SURFACE)	◦C	---	≤ 80	≤ 80
TEMPERATURE RESISTANCE (BACK SURFACE)	◦C	---	≤ 70	≤ 70
SURFACE STRENGTH	N/mm²	EN 311	≥ 1 N/mm²	8 mm: 1.10 N/mm² 16-18 mm: 1.35 N/mm²
FORMALDEHYDE RELEASE (COATED SHEET)	mg/ m² h	EN ISO 12460-3	≤1.75 mg/ m²h (E0 limit)	0.42 mg/ m²h
EVALUATION OF SURFACE RESISTANCE TO MICRO-SCRATCHES	% change	TS CEN / TS 16611 (Method A)	≤ 10	9
RESISTANCE TO COLD LIQUIDS (RESISTANCE TO CHEMICALS)	Class	EN 12720+A1	5	5
SURFACE RESISTANCE TO DRY HEAT (70°C)	Class	EN 12722	5	5
DETERMINATION OF SURFACE RESISTANCE TO WET TEMPERATURE (70°C)	Class	EN 12721	5	5
PANEL WARPING TOLERANCE	mm		Short Side (1220 mm) ≤ 4 mm Long Side (2880 mm) ≤ 10 mm	Short Side (1220 mm) ≤ 4 mm Long Side (2880 mm) ≤ 10 mm

Note: Technical Specifications may vary. Please ask AGT for the latest version of TDS.

LCA INFORMATION

Declared Unit	1 m^2 of MDF Panels and Profiles with an average weight 14.8 kg/m^2
Time Representativeness	2019
Reference Service Life (RSL)	RSL is 10 years provided that it complies with the conditions of use. RSL depends on application area and usage.
Database(s) and LCA Software used	Ecoinvent 3.6 and SimaPro 9.1
Description of system boundaries	Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D)

System Diagram



DESCRIPTION OF SYSTEM BOUNDARY

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw Materials Supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction	Transport	Waste processing	Disposal	Reuse-Recycling-Recovery Potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

The system boundary covers the production of raw materials, all relevant transport down to factory gate, manufacturing by AGT, deconstruction of the product from its construction site, transport of the deconstructed material to waste processing facility with an assumed distance of 200 km, waste processing and disposal.

Waste processing, while included in the system boundary, doesn't contribute to the environmental impacts due to the assumption that the product goes directly to landfill in disposal stage without any processing.

For benefits and loads beyond, a calorific value of 18.6 MJ per kg of MDF was assumed (Günther et al., 2012) to calculate the amount of avoided natural gas use for heating. AGT produces wooden packaging materials from its own process waste. Due to this, packaging materials were not included separately to avoid double counting.

For deconstruction stage, 0.323 MJ electricity use per kg of material was assumed (Gervasio et al., 2018). For environmental impact assessment, EF Method (adapted) which is available in SimaPro 9 was used.

Energy related indicators were calculated from Cumulative Energy Demand (LHV) and resource indicators were calculated using inventory flows. There are no co-product allocations within the LCA study underlying this EPD.

Hazardous and non-hazardous waste amounts were allocated using yearly production amounts of all AGT products. Primary data obtained from AGT is valid for year 2019. Ecoinvent 3.5 was used as secondary database.

The product contains formaldehyde which is a substance of very high concern (SVHC) and is subject to authorization under the REACH Regulation. For details, test results are provided in the additional information section.

LCA RESULTS

Environmentals Impacts for 1 m² MDF Panels and Profiles							
Impact Category	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP - Fossil	kg CO_2 eq	11.3	0.782	0.266	0	0.122	-10.2
GWP - Biogenic	kg CO_2 eq	-21.9	0.007	155E-6	0	1.49	-0.002
GWP - Luluc	kg CO_2 eq	0.041	0.007	83.0E-6	0	30.9E-6	-448E-6
GWP - Total	kg CO_2 eq	-10.6	0.796	0.266	0	1.61	-10.2
ODP	kg CFC-11 eq	2.36E-6	22.1E-9	63.0E-9	0	46.0E-9	-1.02E-6
AP	mol H+ eq	0.070	0.005	0.001	0	0.001	-0.016
*EP - Freshwater	kg P eq	0.004	0.001	22.5E-6	0	25.2E-6	-161E-6
EP - Freshwater	kg PO_4 eq	0.014	0.003	68.8E-6	0	77.2E-6	-494E-6
EP - Marine	kg N eq	0.013	0.001	195E-6	0	0.006	-0.004
EP - Terrestrial	mol N eq	0.175	0.008	0.002	0	0.004	-0.041
POCP	kg NMVOC	0.039	0.002	0.001	0	0.002	-0.015
ADPE	kg Sb eq	155E-6	1.88E-6	4.66E-6	0	0.000	-0.000
ADPF	MJ	202	8.59	4.24	0	3.36	-157
WDP	m^3 depriv.	12.12	0.366	0.015	0	0.015	-0.344
PM	disease inc.	898E-9	21.9E-9	23.0E-9	0	23.2E-9	-45.0E-9
IR	kBq U-235 eq	0.633	0.012	0.020	0	0.021	–0.030
ETP - FW	CTUe	152	7.52	3.64	0	2.74	-43.0
HTTP - C	CTUh	7.04E-9	138E-12	82.7E-12	0	80.5E-12	-860E-12
HTTP - NC	CTUh	133E-9	6.66E-9	3.74E-9	0	3.31E-9	-29.1E-9
SQP	Pt	1620	0.495	4.79	0	8.63	-6.54
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.						
Legend	A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A1-A3: Sum of A1, A2, and A3. A4: Transport to Site, A5: Installation, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary.						
* Eutrophication-freshwater is also provided in P as additional information.							

Resource use for 1 m² MDF Panels and Profiles							
Resource	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	259	2.06	0.046	0	0.132	-0.284
PERM	MJ	0	0	0	0	0	0
PERT	MJ	259	2.06	0.046	0	0.132	-0.284
PENRE	MJ	202	8.59	4.24	0	3.36	-156.7
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	202	8.59	4.24	0	3.36	-156.7
SM	kg	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	-275
NRSF	MJ	0	0	0	0	0	0
FW	m^3	-0.053	0.003	0.001	0	0.004	-0.030
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 and output flows for 1 m² MDF Panels and Profiles							
Flow	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	kg	0.015	0	0	0	0	0
NHWD	kg	3.75	0	0	0	0	0
RWD	kg	0	0	0	0	0	0
CRU	kg	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0
MER	kg	0	0	0	0	0	-14.4
EE (Electrical)	MJ	0	0	0	0	0	0
EE (Thermal)	MJ	0	0	0	0	0	-275
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, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary.						

Information on Biogenic Carbon Content

Results per functional or declared unit		
Biogenic Carbon Content	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	2.89

Note: 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2.

ADDITIONAL INFORMATION - PANEL

Product | Catalogue

Please follow the product catalogue for more information, product details and images.

Scan or Click !

Product | Standarts

Panel products manufactured by AGT follows the below standards:

Scan or Click !

- GOSTR CERTIFICATE
- TS EN ISO 12460-3
- TSE K 517

VOC Emissions | Indoor Air Quality

Volatile Organic Compounds (VOC) tests and evidence have been carried out on the product, according to ISO 16000 parts.

Report Number: TURT200046259

Formaldehyde | Indoor Air Quality

Panel: 0.018 mg/m^3 - TS EN 717-1
Class : E0

ADDITIONAL INFORMATION - PROFILE

Product | Catalogue

Please follow the product catalogue for more information, product details and images.

Scan or Click !

Product | Standarts

Profile products manufactured by AGT follows the below standards:

- GOSTR CERTIFICATE
- TS EN ISO 12460-3
- GOSTR CERTIFICATE

Scan or Click !

Formaldehyde | Indoor Air Quality

Panel: 0.018 mg/m^3 - TS EN 717-1
Class : E0

REFERENCES

/GPI/ General Programme Instructions of the International EPD® System. Version 3.0

/ISO 9001/ Quality management systems – Requirements

/ISO 14001/ Enviroment Management System- Requirements

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

/ISO 14020:2000/ Environmental labels and declarations — General principles

/ISO 14025/ ISO 14025:2006 Preview Environmental labels and declarations – Type III environmental declarations – Principles and procedures

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

/ISO 45001/ Occupational Health & Safety Management System Certification - Requirements

/ Gervasio et al., 2018 /Model for Life Cycle Assessment of buildings LCA, JRC Technical Reports, 2018.

/ Günther et al. ,2012 /Calorific value of selected wood species and wood products, Springer.

/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 2.0, DATE 2019-12-20

/Ecoinvent/ Ecoinvent Centre, www.ecoinvent.org

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

CONTACT INFORMATION

Programme	EPD registered through fully aligned regional programme: EPD Turkey www.epdturkey.org TURKEY EPD® ENVIRONMENTAL PRODUCT DECLARATIONS	The International EPD® System www.environdec.com EPD® THE INTERNATIONAL EPD® SYSTEM
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