KASTAMONU

Worktop

ENVIRONMENTAL PRODUCT DECLARATION

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

S-P Code
S-P-02224

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Programme
EPD Turkey

Validity Date
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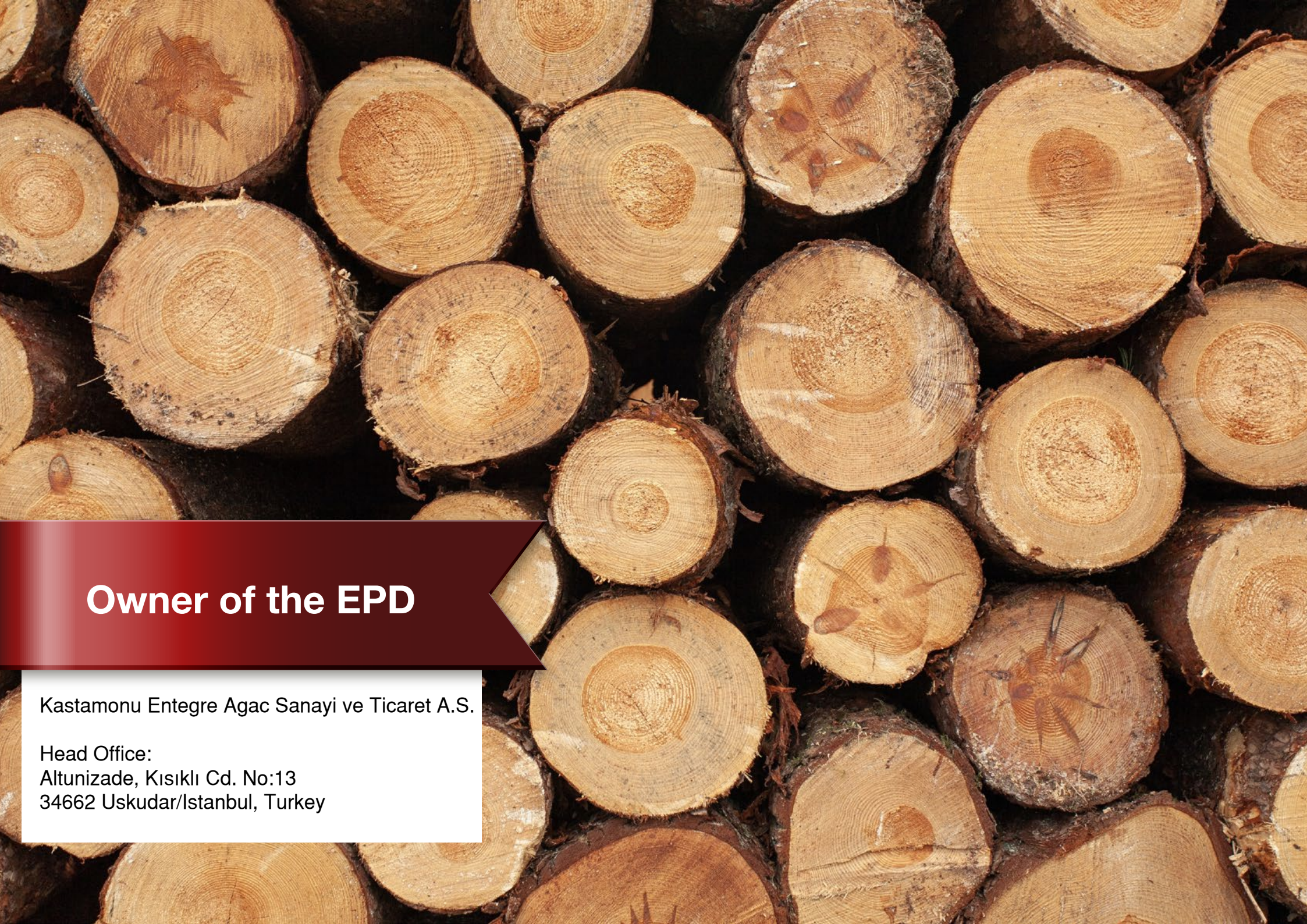
TURKEY EPD®
ENVIRONMENTAL PRODUCT DECLARATIONS

ECO PLATFORM EPD VERIFIED



Owner of the EPD

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Program Information

Programme	EPD Turkey, managed and run by: SÜRATAM – Turkish Centre for Sustainable Production Research & Design, www.suratam.org Nef 09 B Blok No:7/15 34415 Kağıthane/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 1.1, 2019-09-14, Construction Products and CPC 54 Construction Services, EN 15804:2012 + A2:2019 Sustainability of Construction Works, 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 **X** EPD verification

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 **X** 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 Company

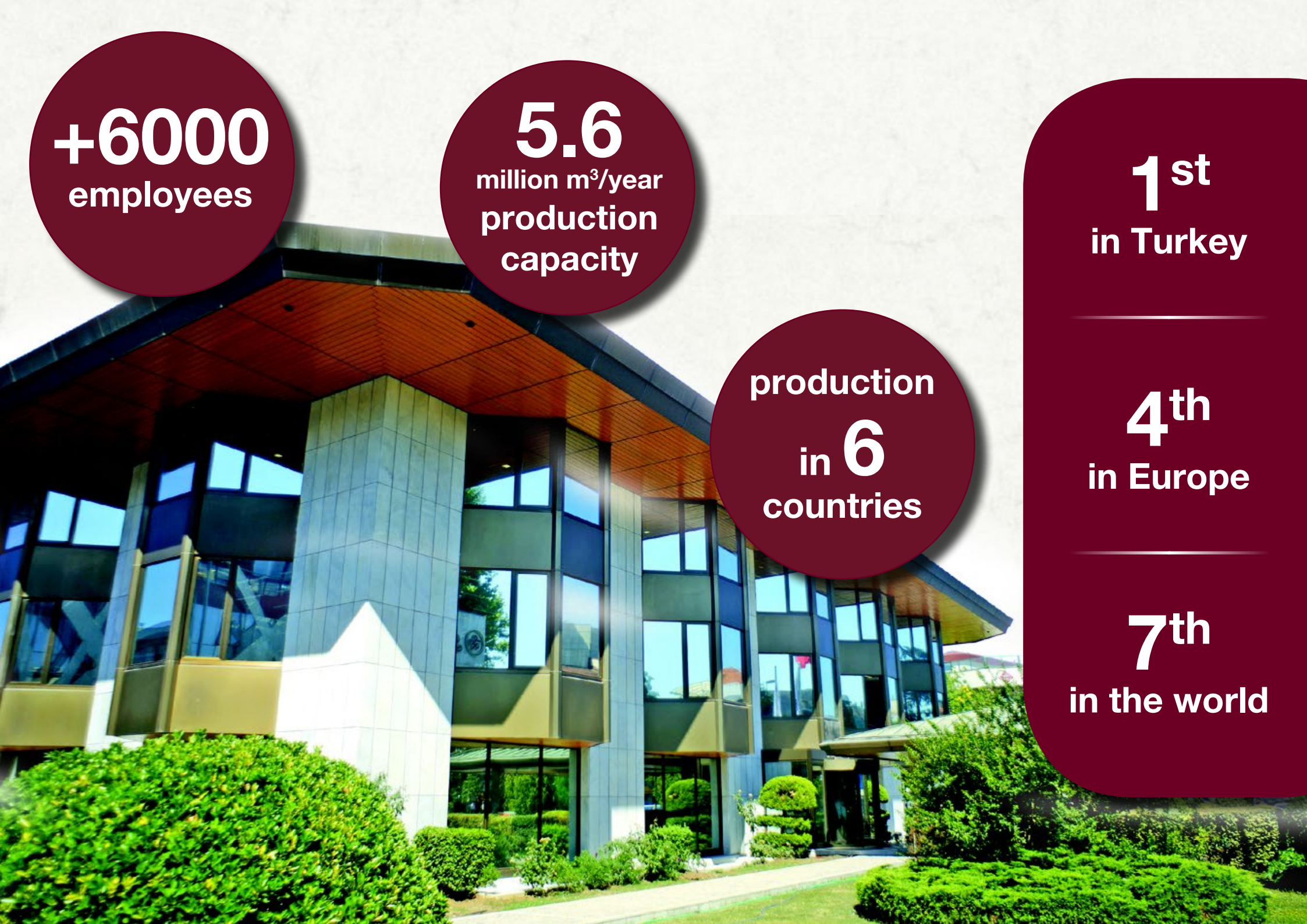
Maintaining its uninterrupted production for half a century in the wood-based panel industry, Kastamonu Entegre is a global-scale company engaged in production in 6 countries, with investments in Romania, Bulgaria, Bosnia and Herzegovina, Russia, Italy and Turkey. In the USA, it has a company that carries out wood chip supply and logistics processes.

Kastamonu Entegre has become the world's seventh largest company in the wood-based panel industry with its overseas investments extending more than 20 years, and has been among the top four manufacturers in Europe. It is one of the four largest manufacturers in the world with each of its main product groups; namely MDF, chipboard, laminate flooring, and door skin. It undertakes 6% of the world laminate flooring production alone. Not only the Turkey's industry leader with its 30% market share, Kastamonu Entegre, at the same time is by far the leader of the industry with its imports each year to 100 countries in six continents extending from China to America and Australia to Canada. 60% of its turnover is obtained from facilities abroad and its exports.

With its turnover of 1.3 billion dollars and its strength, knowledge and experience in production, it provides employment to more than 6 thousand people in its domestic and foreign production facilities as well as its offices. In its production facilities with a total of 5.6 million m^3/year wood-based panel production capacity, where it caters the requirements of furniture, decoration and construction industries with its MDF and particle board, laminate flooring, worktop and door skin products, it produces a volume that contributes to the formation of living spaces of 4 500 homes every day. Proud bearer of "The Biggest Turkish Investor of Italy" title, Kastamonu Entegre also happens to be the largest MDF producer and exporter of Russia.

Responding to the demands of its customers, Kastamonu Entegre can produce FSC, CARB2 / EPA Certified products and at E1, E0.5 (1/2), E0, F4Start quality by obtaining wood raw materials from 100% sustainable and renewable sources. In addition, E1 quality production is carried out in all its facilities. "Floorpan" and "Artfloor" are the first Turkish parquet brands that have "Blue Angel" certificate, which shows that environmentally friendly materials are used in production and that the products do not contain any hazardous substances for human health. Acting with the mission of preserving natural balance and contributing to the society, the company is one of the three companies that prepared the sustainability report in the industry. It carries out studies on product and process development, efficiency increase, efficient resource utilization and advanced material technologies in its R&D center in Istanbul, which it has set up to develop technologies of the future.

The company has certifications such as ISO 9001 Quality Management, ISO 45001 Occupational Health and Safety Management, ISO 14001 Environmental Management, ISO 50001 Energy Management, and also the Turquality Certificate. Production is made in conformity with the TSE and European Norms (EN).


+6000
employees
5.6
million m³/year
production
capacity
production
in 6
countries
1st
in Turkey
4th
in Europe
7th
in the world

About Products

Technotop Worktops, which are multifunctional kitchen and bathroom worktops, are produced using modern machinery and latest technology, Teknopan-Mr (Moisture Resistant) particleboards, Cpl and Hpl laminate. Laminate used on the top surface and the layer on the bottom surface of the worktop protects the worktop from moisture and water. With this characteristic, it constitutes an excellent choice for places such as kitchen and bathroom where hygiene is of great importance. Technotop Worktops are a perfect alternative versus acrylic based, granite and marble worktops in terms of the price. Furthermore, the worktops are resistant to scratching, heat, steam, water, stain, impact and wear. Easy to clean The decor and surfaces formed after a comprehensive selection, provides comfortable and easy selection opportunity for modern applications. The solid and wooden ones from among the decors consisting of approximately 70 colors are fully compatible with Teknolam and Medelam colors.

Decorative laminated top surface of Neotop worktops is resistant to impact, wear and scratching. On the top surface, HGP (general purpose postforming used on horizontal surfaces) laminates according to EN 438 are used. There is no MDF on the front side (in the radius part) On the back side (facing the wall) there is no PVC band. Has the same quality as Laminate Technotop.

TECHNOTOP WORKTOPS

NEOTOP WORKTOPS

The average density of Kastamonu Entegre Worktop with a thickness of 28 to 38 mm is 600 kg/m^3.

The UN CPC code of the product is 3143.

Typical Material Composition, 1 m^3

Raw Material	Weight, %
Wood Chips	90-97
UMF Glue	3-6
Other Chemicals	0-1

Wood chips type can be varied and mainly sourced from pine, beech, and oak trees.

Thickness Range

28 - 38 mm

Dimensions

600x3660 mm

Worktop Technical Specifications

Technical Data	Test Standard	Unit	Thickness Range	
			25> t >32	32>t>40
Thickness T Relative to Nominal Value	EN ISO 13894	mm	tmax - tmin ≤ 0,4	
Length	EN ISO 13894	mm	+10, -5	
Width > 500 mm	EN ISO 13894	mm	±0.5 for 500mm, with a further 0.05mm for each additional 100mm	
Surface Defects	EN 14323	mm^2/m^2	points ≤ 1	
Surface Defects	EN 14323	mm/m^2	line ≤ 10	
Internal Bond	EN 319	N/mm^2	≥0.25	≥0.20
Bending Strength	EN 310	N/mm^2	≥9.5	≥8.5
Resistance to Scratching	EN 438-2	Rating	Smooth finish ≥2, textured finish ≥3	
Resistance to Surface Wear	EN 438-2	Revolution	≥150	
Resistance to Water Vapour	EN 438-2	Rating	glossy ≥3, mat ≥4	
Resistance to Dry Heat (160°C)	EN 438-2	Rating	glossy ≥3, mat ≥4	
Resistance to Wet Heat (100°C)	EN 438-2	Rating	glossy ≥3, mat ≥4	
Resistance to Impact By Small Diameter Ball	EN 438-2	N	≥20	
Resistance to Staining	EN 438-2	Rating	For 1. and 2. groups min. 5	
Flatness	EN ISO 13894	mm/m	≤ 2 (only for balanced surfaces)	
Surface Soundness	EN 311	N/mm^2	≥0.8	
Formaldehyde Release	EN ISO 12460-3	mg/m^2h	E1 ≤ 3.5	

Note 1: This document may be modified at any time by the company without any express obligation to send any updated edition to all original recipients. To verify that you have the latest edition available, you are advised to contact the relevant sales executive.

Note 2: For current TSE document / document scope, it is recommended to contact the relevant sales executive.

As Kastamonu Entegre, we adopt an ethical, transparent, equitable and accountable management approach in the awareness of our environmental, economic and social contributions and impacts.

We engage in activities that strengthen our corporate structure, and we take sustainable development-based growth as the basis, in line with our target of becoming a global brand.

In determining our strategies, we always consider the expectations and opinions of our stakeholders and create a strong bond by ensuring their satisfaction. We conduct practices with an employee-oriented perspective that takes into account their expectations and needs, thereby creating an efficient and peaceful working environment.

Besides ensuring the health and safety of all our employees, we also contribute to their training and development activities.

Pursuant to our responsible purchasing approach, we perform our raw material supply processes based on sustainable forest management. We support initiatives related to this model and contribute positively to their development.

Our innovation and R&D processes enable us to develop and manufacture products that create high quality, environmentally friendly and healthy living spaces using state-of-the-art technology.

We respect human rights and encourage equal opportunity.

We pay regard to energy and water efficiency; we implement renewable and innovative energy projects accordingly.

We contribute to the welfare of the local community by creating employment and economic value in our geographic locations.

KASTAMONU ENTEGRE
Sustainability Policy

LCA Information

Declared Unit	1 m^3 of Worktop with an average weight 600 kg/m^3
Time Representativeness	2019
Database(s) and LCA Software Used	TLCID ver. 1.0 (Turkish Lifecycle Inventory Database), Ecoinvent 3.6, SimaPro 9.1

The inventory for the LCA study is based on the 2019 production figures for worktop products by Kastamonu Entegre production plants in Romanya.

This EPD's system boundary is cradle to gate. The system boundary covers A1 - A3 product stages, C1 - C4 end of life and D stages.

Product Stage			**Constrcution 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	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

X = Included in LCA, ND = Not Declared

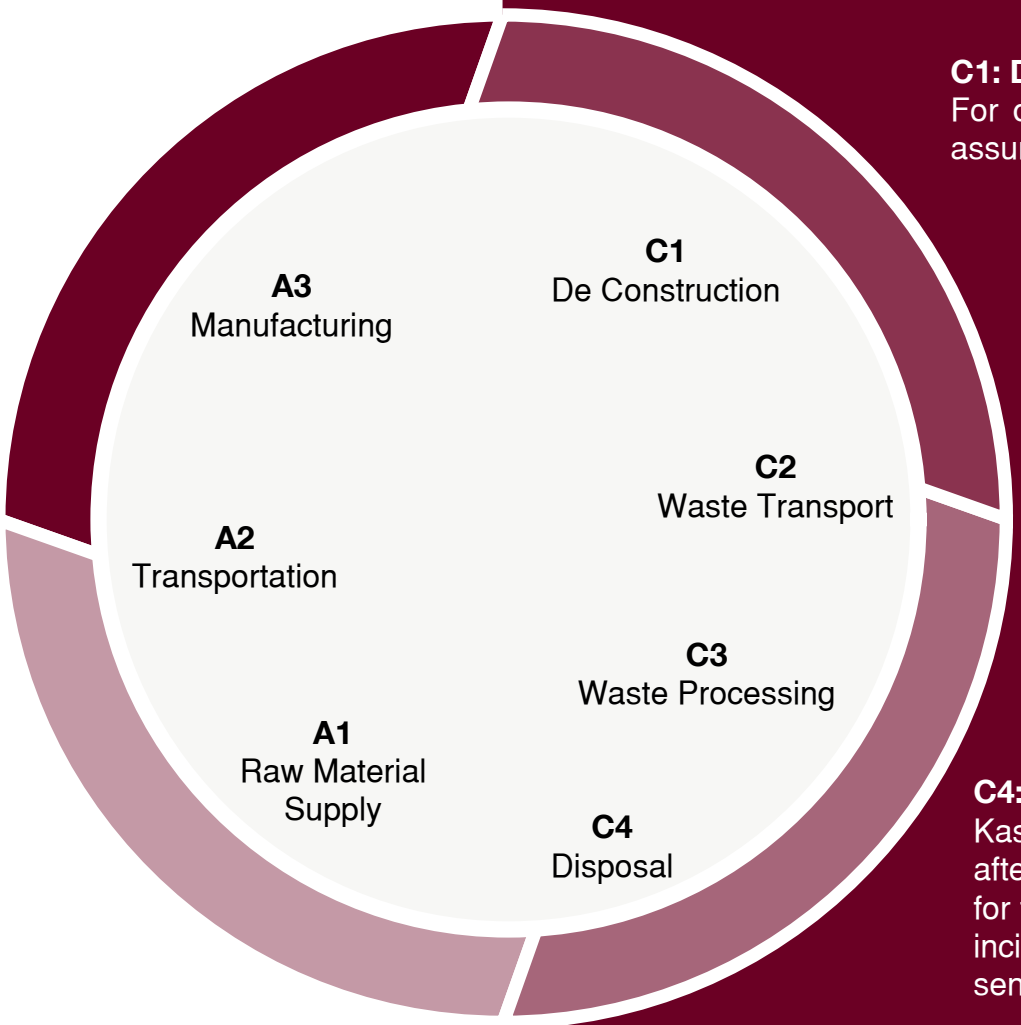
System Boundary

A1: Raw Material Supply
Kastamonu Entegre's productions start from wood. The company supplies its raw materials necessary from suitable forests. Raw material supply includes raw material extraction/preparation and pre-treatment processes before production.

A2: Transportation
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 sites is taken as the weight average values for transport from raw materials supplier in 2019.

A3: Manufacturing
Kastamonu Entegre's manufacturing flows are given as below respectively. Some process can be vary according to production plant.

1 - Chipping
2 - Chips Classification
3 - Flaking
4 - Drying
5 - Gluing
6 - Mat formation
7 - Pressing
8 - Cutting & trimming
9 - Cooling
10 - Sanding
11 - Quality control
12 - Storage



C1: Deconstruction and Demolition
For deconstruction stage, 0.323 MJ electricity use per kg of material was assumed (Gervasio et al., 2018)

C2: Waste Transport
A distance of 200 km is assumed for the transport of the deconstructed material to the disposal area.

C3: Waste Processing
If the wastes are going to landfill or incineration, there is no need for any waste process.

C4: Disposal
Kastamonu Entegre's products may dispose with any disposal scenario after construction and demolition as their final fate and modelled as such for this EPD. It is assumed that 75% of the wastes used as raw material for incineration plants due to their high calorific value and 25% of the wastes send to the landfill site.

D Stage (Benefits and Load)
For benefits and loads beyond, a calorific value of 18.6 MJ per kg of worktop was assumed (Günther et al., 2012) to calculate the amount of avoided electicity production from heat. In this stage, the production efficiency of the plant which electricity generation from incineration is assumed as %20.

More Information

Production Plants and Allocations

Kastamonu Entegre has production facilities for wood-based products in Turkey, Italy, Russia, Romania, and Bulgaria. Raw material contents are modeled for each product and each factory. Water consumption, energy consumption and raw material transportation were weighted according to 2019 production figures.

In addition, hazardous and non-hazardous waste amounts were also allocated from the 2019 total waste generation.

Packaging

Products by Kastamonu Entegre is delivered en users in film plastic packaging, corrugated board, or composite packaging. The packaging of the final product is included in the LCA.

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

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 and table of technical spesifications.

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.

Raw materials, energy and water consumption, waste and material and product transport data is collected from Kastamonu Entegre. All primary data collected from Kastamonu Entegre is for the period year of 2019.

Geographical Scope

The geographical scope of this EPD is global. The assumptions of the end of life (C modules) and benefit (D module) stages can be referred to as the global.

LCA Results

Environmental Impacts for 1 m^3 of Worktop							
Impact Category	Unit	A1-A3	C1	C2	C3	C4	D
GWP - Fossil	kg CO_2 eq	182	31.7	10.9	0	5.19	-333
GWP - Biogenic	kg CO_2 eq	-1073	0.289	0.008	0	672	-1.53
GWP - Luluc	kg CO_2 eq	0.741	0.302	0.003	0	0.001	-0.667
GWP - Total	kg CO_2 eq	-890	32.3	10.9	0	678	-335
ODP	kg CFC-11 eq	28.4E-6	895E-9	2.56E-6	0	972E-9	-13.8E-6
AP	mol H+ eq	1.29	0.208	0.046	0	0.152	-1.66
EP - Freshwater	kg PO_4 eq	92.3E-3	33.4E-3	772E-6	0	3.06E-3	-164E-3
EP - Marine	kg N eq	249E-3	33.9E-3	13.9E-3	0	125E-3	-317E-3
EP - Terrestrial	mol N eq	3.76E+0	307E-3	152E-3	0	795E-3	-3.18E+0
POCP	kg NMVOC	0.813	0.084	0.049	0	0.213	-0.848
ADPE	kg Sb eq	1.04E-3	76.4E-6	186E-6	0	35.2E-6	-411E-6
ADPF	MJ	3346	348	170	0	74.9	-4317
WDP	m^3 depriv.	227	14.8	0.551	0	1.60	-52.3
PM	disease inc.	16.8E-6	889E-9	986E-9	0	1.37E-6	-12.1E-6
IR	kBq U-235 eq	35.0	0.470	0.864	0	0.397	-48.7
ETP - FW	CTUe	3301	305	135	0	129	-5850
HTTP - C	CTUh	1.65E-6	5.60E-9	3.33E-9	0	134E-9	-66.9E-9
HTTP - NC	CTUh	2.54E-6	270E-9	154E-9	0	454E-9	-2.82E-6
SQP	Pt	84881	20.1	194	0	101	-676
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, C1: De-Construction, C2: Waste Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads Beyond the System Boundary.						

Biogenic Carbon Content	Unit	A1-A3
Biogenic carbon content in product	kg C / m^3 product	293
Note: 1 kg biogenic carbon is equivalent to 44/12 kg of CO_2.		

Resource Use for 1 m^3 of Worktop							
Impact Category	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	13633	83.3	2.14	0	3.16	-491
PERM	MJ	0	0	0	0	0	0
PERT	MJ	13633	83.3	2.14	0	3.16	-491
PENRE	MJ	3347	348	170	0	74.9	-4316
PENRM	MJ	0	0	0	0	0	0
PENRT	MJ	3347	348	170	0	74.9	-4316
SM	kg	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0
FW	m^3	1.41	0.133	0.035	0	0.526	-1.38
Waste & Output Flows for 1 m^3 of Worktop							
Impact Category	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	0.001	0	0	0	0	0
NHWD	kg	0.007	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	9.59	0	0	450	0	0
EE (Electrical)	MJ	0	0	0	0	1688	0
EE (Thermal)	MJ	0	0	0	0	0	0

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, 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.

Additional Informations

For more information about Kastamonu Entegre and its products

Scan or Click!

With all technical details and 3D images, Kastamonu Entegre products are available on your mobile phone or tablet. Download IDS 3D (Interior Design Studio 3D) application and experience reality.

GET IT ON Google Play

Download on App Store

VOC Emissions

Testing Laboratory: RISE Research Institutes of Sweden AB
Test Reference: For updated test reference ID, it is recommended to contact the relevant sales executive.

Emission measurements according to SS-EN ISO 16000-9:2006 (Indoor air – Part 9: Determination of the emission of volatile organic compounds from building products and furnishing – Emission test chamber method) after 28 days regarding volatile organic compounds (VOC and VVOC/SVOC), carcinogenic substances (VOC-substances, EU Regulation No 1272/2008 Annex VI, cat 1A and 1B) formaldehyde and acetaldehyde (ISO 16000-3:2011). Evaluation according to EN 16516:2017 (EU-LCI values).

Version History : V1.1 - 01.10.2022 - Company logo and Eco Platform logo updated.


KEAS

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

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KASTAMONU

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