

**URBAN RE-GENERATION PROJECT
GOOD COMPANY PRACTICES**



TARKETT S.P.A.

COMPANY CERTIFICATIONS		
SAFETY	QUALITY	ENVIRONMENTAL MANAGEMENT
UNI ISO 45001:2018	UNI EN ISO 9001:2015	ISO 14001:2015

ENERGY SAVING INITIATIVES	
Energy Management System ISO 50001	<p>Energy Policy Tarkett S.p.A. has implemented an Integrated Management System conforming to the following standards:</p> <ul style="list-style-type: none"> - UNI EN ISO 9001:2015. - UNI EN ISO 14001:2015. - ISO 50001:2011. <p>In 2009 the plant adopted the WCM (World Class Manufacturing) system which is perfectly harmonised with its management system and used for the development, application and maintenance of these systems.</p> <p>Specifically, Tarkett S.p.A. has identified the environmental and energy aspects linked to its products/activities/services which can be monitored and over which direct influence can thus be exerted.</p> <p>In accordance with a life cycle perspective Tarkett has also determined what environmental and energy impacts are potentially bound up with the aspects highlighted. In determining these aspects account is taken of:</p> <ul style="list-style-type: none"> a) change, including planned or new developments together with new or modified activities, products and services; b) reasonably foreseeable abnormal conditions and emergency situations. <p>The diverse operational situations (normal, abnormal and emergency) and production site environmental, geographical and historic characteristics are the basis for data and information collection regarding: the natural resources and energy used in the production process; the raw materials and chemical agents used; products; the waste produced; atmospheric emissions; waste water; environmental problems bound up with the local community; energy analysis (list of energy vectors, user lists, direct and indirect measurement of energy consumption in individual departments, prioritising); identifying reference consumption (initial energy audit); identifying energy performance indicators, etc.</p>

Energy goals and milestones: the plant structures its goals into two levels:

- ten year macro-goals delineated in accordance with European energy policies;
 - yearly goals, i.e. milestones to achieve every year for the achievement of the ten year macro-goals.
- The currently applicable macro-goals, valid until 2020, identify 5 main categories: Energy, Water, Raw Materials, Waste and Recycling (recovery of waste materials within the plant, post installation and end of life).

Organisational structure: the system is structured into sectors, each of which is responsible for specific tasks and goals. Specifically:

- Plant Manager;
- Management representative;
- Head of Investment and Maintenance;
- Planned Maintenance (PM) pillar manager;
- Purchasing Manager;
- Head of the Energy Management System;
- Head of Production;
- Cost Deployment (CD) pillar manager.

Energy performance improvement action: Tarkett S.P.A. has taken a great deal of action to improve its energy performance and further action is planned. This includes:

- replacement of one chiller with a more efficient one;
- replacement of obsolete engines with high efficiency ones (6 engines with IE2 efficiency class - high efficiency - with class IE4 engines - super premium efficiency);
- production process optimisation (e.g. the rotation speed of the oxidation department machinery has been reduced while maintaining the same level of productivity, thus lowering energy consumption);
- reorganisation of the layout of certain machines (e.g. post-combustors in which the aspiration conduit tubing needs to be upgraded in length and complexity terms with the most simple, shorter and lower loss trajectory);
- diathermic oil and overheated water distribution system efficiency improvements;
- building shell efficiency improvements consisting of window and door replacements;
- replacement of four low efficiency compressors with more efficient solutions equipped with inverters for automatic machine modulation. The

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	<p>compressors are also equipped with an automatic load allocation system to ensure machinery ages at the same rate;</p> <ul style="list-style-type: none"> - 900kW fridge group monitoring and management system;
<p>Energy consumption reduction initiatives:</p>	<p>Each year the firm sets out energy (and other) initiatives completed in the previous year and those awaiting implementation (CARRY OVER), those planned in the near future and those needing some form of funding for implementation (CAPEX BUD).</p> <p>What follows is a list of action:</p> <ul style="list-style-type: none"> - process parameter optimisation to reduce the oxidation cycle time frames <i>CARRY OVER</i>; - new compressed air production system <i>CARRY OVER</i>; - new vapour condensation system <i>TOP TEN CARRY OVER</i>; - further photovoltaic steps <i>TOP TEN CARRY OVER</i>; - automatic closed cycle chiller use optimisation system <i>CARRY OVER</i>; - reduced polymerisation time frames in Veneto 3.2 mm (Alolt) (R & D) <i>TOP TEN CARRY OVER</i>; - new parameters for laminators and rosin fusion units <i>CARRY OVER</i>; - increased steam distribution line efficiency <i>CARRY OVER</i>; - increased engine efficiency <i>CARRY OVER</i>; - heat recovery (biomass and calendering) <i>CARRY OVER</i>; - attachment change for losses in mixing line 2 for Etrusco (changes to the hopper before the granulator <i>NEW ACTIONS 2020</i>). - lower consumption thanks to laminator engine change in Calandra <i>NEW ACTIONS 2020</i>; - reduced polymerisation time frames and gas consumption in furnaces resulting from better air extraction <i>NEW ACTIONS 2020</i>; - improved biomass boiler management (frequency and length of cleaning to obtain greater efficiency) <i>NEW ACTIONS 2020</i>; - drying time frames reduced 10% for linoleum granules coming from cleaning work during mixing line change over <i>NEW ACTIONS 2020</i>; - lower wood chip consumption thanks to jute roll packaging recycling <i>NEW ACTIONS 2020</i>; - additional photovoltaic panels on roofs (50 kW) <i>CAPEX BUD 2020</i>; - increased use of LED lights <i>CAPEX BUD 2020</i>;

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	<ul style="list-style-type: none"> - new doors and windows (the remaining technical offices/staff service rooms) <i>CAPEX BUD 2020</i>; - reduced energy consumption bound up with the replacement of one of the two chillers for mixing line closure <i>CAPEX BUD 2020</i>; - new engine for German extruder <i>CAPEX BUD 2020</i>; - optimisation and insulation of the diathermic pipeline <i>CAPEX BUD 2020</i>; - reworking of particles, small pieces of concrete and old pigments to generate new linoleum powder to dry in the oxidation department <i>NEW ACTIONS 2020</i>; - improved stand-by management in mixing line 2 <i>NEW ACTIONS 2020</i>; - increased efficiency in Steam allocation (focus on Mingazzini too) <i>CAPEX BUD 2020</i>; - increased trigeneration opening times <i>NEW ACTIONS 2020</i>; - reduced air compressor loss <i>NEW ACTIONS 2020</i>.
Renewable Energy Sources	<p>The electricity bought by Tarkett S.p.A. Is 100% green. It is hydroelectric and Guarantee of Origin certified (a certificate issued by Gestore Servizi Energetici, or GSE, which testifies to the renewable/green origin of the kWh sold). The plant is also equipped with:</p> <ul style="list-style-type: none"> - 7 photovoltaic plants for a peak output of 294 kWp; - 1 geothermal heat pump plant; - 1 biomass boiler fed with wood chip and jute from the linoleum production cycle (waste recovery) with a nominal output on 500kW. Overall 32% of the plant's overall consumption is generated by renewable sources. The remaining percentage is covered by a trigeneration plant which can produce electricity, thermal energy and refrigeration energy via natural gas combustion.
Water consumption reduction initiatives	<p>The firm has adopted a great many measures to reduce its water consumption. In particular, a distinction can be made between process water reduction and civil use water reduction strategies. In the first case the following has been done:</p> <ul style="list-style-type: none"> - rainwater collection; - obsolete conduit maintenance to reduce losses and, in the case of steam, reduce the need for heat in the production cycle (energy needs are also reduced); - configuration of the network via a closed cycle system (for the steam cycle it is not totally closed cycle);

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	<ul style="list-style-type: none"> - machinery optimisation/substitution. For civil use, on the other hand, the following strategies have been implemented: - staff training; - water dispensing system optimisation via water loss reduction and the selection of best performance dispensers, etc.
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ENVIRONMENTAL SUSTAINABILITY AND GREENHOUSE GAS REDUCTION INITIATIVES	
Global sustainable development goals	
Global goal formalisation	<p>As previously specified the firm identifies macro-objectives in the energy, water, raw material, waste and recycling areas.</p> <p>For 2020 the goals fixed are:</p> <ul style="list-style-type: none"> - 100% of the materials used in products are constantly assessed by third parties and certification bodies; - 75% of materials in the supply chain do not contribute to the 'resource scarcity' problem, i.e. natural resource impoverishment; - 100% of production sites have closed water cycles; - compared to 2010 (baseline) the GHG atmospheric emissions are at least 20% lower; - all coatings, floors are phthalate-free and low emission; - 100% of the flooring solutions offer maintenance and installation procedures according to Cradle to Cradle principles; - waste going to landfill is 0%; - the volume of flooring and coating collected and recycled downstream of installation (waste) or post-consumption is at least twice that collected in 2010. <p>All these goals were achieved in 2019, in some cases going beyond reference targets (e.g. GHG emission reductions were 60% less than 2010, well beyond the 20% target fixed).</p> <p>The firm is currently updating its macro-goals for the 2021-2030 period, taking into account the priorities mentioned above.</p>
Environmental policy document	<p>The firm has drawn up an integrated environment, quality and energy document capable of integrating environmental management (ISO 14001) and energy management (ISO 50001) needs with workplace health and safety (OHSAS 18001) and quality (ISO 9001) requirements.</p> <p>The body tasked with implementing the integrated plan is the whole of sector heads present inside</p>

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	<p>the plant together with plant managers and a management representative.</p> <p>The principal innovations bound up with sustainability brought in by the firm have included the installation of a biomass boiler with internal biomass used as fuel, the installation of a trigeneration plant and geothermal heat pump, the closure of one water cycle for production and one for the waste cycle and the adoption of a WCM (World Class Manufacturing) approach with which to recognise and solve losses.</p>
<p>Changes determined by sustainability strategies:</p>	<ul style="list-style-type: none"> - in the business model: Optimisation of the purchase process, integration of purely process aspects with themes such as energy efficiency. In company processes: <ul style="list-style-type: none"> - Management and control of production processes based not solely on production aspects but also energy/environment parameters (for example, reductions in the rotation speed of the machines used in the oxidation process). <i>(implemented)</i> - adoption of environmentally friendly vehicles for the corporate fleet <i>(implementation underway)</i>; - distance working systems (teleconferencing, homeworking, etc.) <i>(implemented)</i>; - promotion of car pooling, use of bicycles and public transport, etc. <i>(implemented)</i>; - changes to packaging from an environmental perspective <i>(implemented)</i>.
<p>Purchases and supplies</p>	
<p>Primary raw materials used and provenance</p>	<p>Tarkett linoleum is still made today to a traditional 1898 formula using largely natural and renewable raw materials which are respectful of both the environment and present and future generations. The main raw materials used for the production of Tarkett linoleum are:</p> <ul style="list-style-type: none"> a) linseed oil obtained from linseed oil pressing; b) wood flour obtained from the pulverisation of wood working leftovers; c) cork flour made from the outer bark of cork oak which can be removed without damaging the plant in any way; d) jute, a textile plant fibre taken from plants from the corchorus genus; e) resin (rosin), a solid residue resulting from the distillation of plant resins from various species of pine and conifer; f) pigment, potassium permanganate, titanium dioxide, an additive used to obtain the various colours;

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	<p>g) wax, a surface finish for product conservation in the use phase;</p> <p>h) calcium carbonate, the constituent property, either wholly or in part, of a great variety of rocks including marble, limestone and travertine;</p> <p>l) foam, a polyurethane foam which gives the product sound proofing properties (used on certain product lines only); j) linoleum powder obtained from the pulverisation of linoleum waste which is thus brought back into the production cycle as a 'raw material'.</p> <p>k) carbostearate, an acid made up predominantly of calcium carbonate with the addition of calcium stearate.</p>
Environmental criteria in supplier selection	<p>100% of the firm's suppliers are selected in accordance with environmental criteria. In particular, the following are assessed:</p> <ul style="list-style-type: none"> - supplier social, environmental and safety certifications; - supplier proximity (short circuits) where possible; - fair trade products selected where possible.
Promotion of action to get suppliers involved on environmental themes	<p>Via communication/joint working with suppliers (especially long term ones) around safety, quality and environment related issues supplier raw material production/supply processes have been optimised.</p>
Adoption of raw material reduction initiatives	<p>In addition to reintroducing waste generated in the production phase into the production cycle (pulverised and reintroduced as raw materials, thus reducing the total volume of new raw material used in production), the firm has launched the Re-start project. This project involved supplying installers with special bags in which to collect material eliminated in the installation phase.</p> <p>In this way rather than being sent to landfill or broken up, a further reduction of the raw materials used in the production cycle can be implemented.</p>
Sustainable purchase policy for travel	<p>Skype meetings (teleconferencing) are incentivised. In the near future the firm will attempt to increase the use of public transport.</p>
Sustainable purchase policy for consumables	<p>Development underway. Of the potential strategies identified priority will be given to the use of recycled paper and rechargeable ink cartridges.</p>
Sustainable purchase policy for food and drink	<p>Treated water dispensers are currently installed at the site (using mains water) and the use of steel flasks, compostable glasses and palettes in drinks distributors and recycling in the canteen area has been introduced.</p>

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	<p>With a view to going plastic-free the use of flasks has also been encouraged outside the firm by distributing flasks in certain parts of the neighbourhood.</p>
Production	
Green services/products	<p>42% of the firm's overall turnover comes from the sale of 'green' products.</p>
Product innovations designed to replace dangerous chemical substances	<p>To reduce the use of dangerous substances the firm has enacted a C2C (Cradle to Cradle) approach, in conjunction with EPEA. In accordance with this approach, as compared to conventional recycling, the quality of the raw materials is maintained through multiple product life cycles using 'safe chemical agents' only. In particular, the production processes, use and reuse of products take a form which enables raw material quality to be conserved through numerous life cycles. This means: no waste and everything, at the same time, constitutes nutritional substances. The right materials are used in infinite cycle (metabolisms) in the right place at the right time.</p>
Adoption of production process environmental certification trajectories	<p>The firm has pursued a range of certification trajectories:</p> <ul style="list-style-type: none"> - Product Carbon Footprint in accordance with ISO14067 standards, the benchmark used to estimate greenhouse gas emissions expressed in kg or tons of equivalent CO2 caused by a product. Specifically calculations were done for a family of company products. Falls under Environmental labelling type II. - Environmental Product Declaration, or EDP) according to ISO 14025 standards: a certified environmental product statement which supplies product environmental impact calculated via an LCA approach in accordance with the ISO 14025 international standard. Falls under Environmental labelling type III. - Environmental Management Certificate (EMC), certificate pursuant to ISO 14001 standards. - Life Cycle Assessment (LCA) is a structured and internationally standardised method serving to quantify the potential impact of a product or service on the environment and human health from the starting point of resource consumption and emissions. - The Cradle to Cradle approach (C2C). On the basis of the results obtained through the certification of its products the firm always considers potential environmental impact when new products are developed.

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Presence of a document communicating atmospheric emissions.	Yearly atmospheric emission communications to ARPA Umbria.
Participation in environmental innovation research projects.	Via: - European Union public funds for international and national projects; - European Union public funds for regional projects. - national public funds;
Waste Management	
Recycling and appropriate waste management improvement initiatives.	In 2019 the firm produced 582.5 tons of waste. 92.8% of this was sent for recycling at other production cycles. The remaining 7.8% was sent for outside treatment. To incentivise recycling specific training courses have been set up and waste collection points set up.
Waste processing and waste reduction initiatives	Various projects have been set up for waste reduction purposes: - ReStart: product waste recovery in the product installation phase. - Distiller for liquid waste: liquid waste purification process prior to collection network discharge. - Reuse of packaging and pallets employed in end product packaging and transport.
Environmental impact improvement targets	As specified in the points above, in accordance with global sustainable development goals, the firm set itself macro-goals to achieve by 2020 and these are due to be upgraded with new 2030 targets. Together with these macro-goals targets to be achieved are also set on a yearly basis. For waste, in particular, a reduction of 96.93% of the total volume of waste over 2010 levels has been achieved. This means that instead of being sent to landfill the waste produced is sent for recycling or other treatment for the production of new raw materials, energy, etc.
Innovation and research	
Investment in innovation and research	Around 5% of profits are used for research and development. The management of the action/investment needed to pursue the firm's environmental objectives will be the task of various company departments, such as Purchasing, Investment and Maintenance, as well as the technical office and the plant's energy manager.
Direct atmospheric emissions reduction initiatives	Emission abatement systems have been installed in the various emission points present within the plant and these are subject to constant maintenance to ensure appropriate functioning.
Staff training	

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<p>Staff awareness raising and training designed to reduce environmental impact</p>	<p>Specific training courses have been held inside the firm which 50% of plant staff attended, a total of approx. 2000 training hours (200 of which were on environmental themes). Company policy is also explained and communicated to staff on a range of channels such as: social media, active participation in public events, etc.</p>
Client relations	
<p>Marketing policies designed to highlight product sustainability.</p>	<p>For public/client communications, product environmental information is stressed in various channels: - the firm's webpage; - participation at trade fairs and conferences; - explanatory brochures; - EPD drawn up pursuant to ISO 14025, made available to the public.</p>
Relations with local government and the community	
<p>Working together with the local council on community sustainability projects and initiatives.</p>	<p>Projects developed with local authorities have included: - plastic-free projects in schools, including steel flask distribution. - the 'Let's Clean the World' project with staff taking a direct part in cleaning community spaces. - Legambiente's sustainable towns initiative.</p>
<p>Participation in competitive tenders requiring environmental criteria</p>	<p>Almost all of the competitive tenders in which the firm has taken part over the last five years had selection criteria which included environmental aspects.</p>
<p>Access to public incentives for green process/product development</p>	<p>The firm has made use of various incentives. These have included: - Bando Grandi Progetti R&S from the resources of the Fondo rotativo per il sostegno alle imprese e gli investimenti in ricerca. - Umbria Region energy tender, Supporto al Sistema Produttivo per le Fonti Rinnovabili ed il Risparmio Energetico. - Certificati Bianchi, negotiable bonds certifying to savings in final energy uses via action and projects increasing energy efficiency.</p>
<p>Membership of business associations and networks</p>	<p>Membership of Confindustria Umbria</p>
<p>Direct joint working with business networks and associations</p>	<p>Ongoing joint working with Confindustria Umbria (for example on the Terni Urban Re-Generation project) and ITS training.</p>
<p>Initiatives and activities in schools</p>	<p>The firm has undertaken a range of initiatives with schools including: - company visits to raise awareness of the production process and the strategies pursued by the firm in various aspects including the environment;</p>

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	<ul style="list-style-type: none">- lessons in schools;- student internships;- graduate thesis partnerships.
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