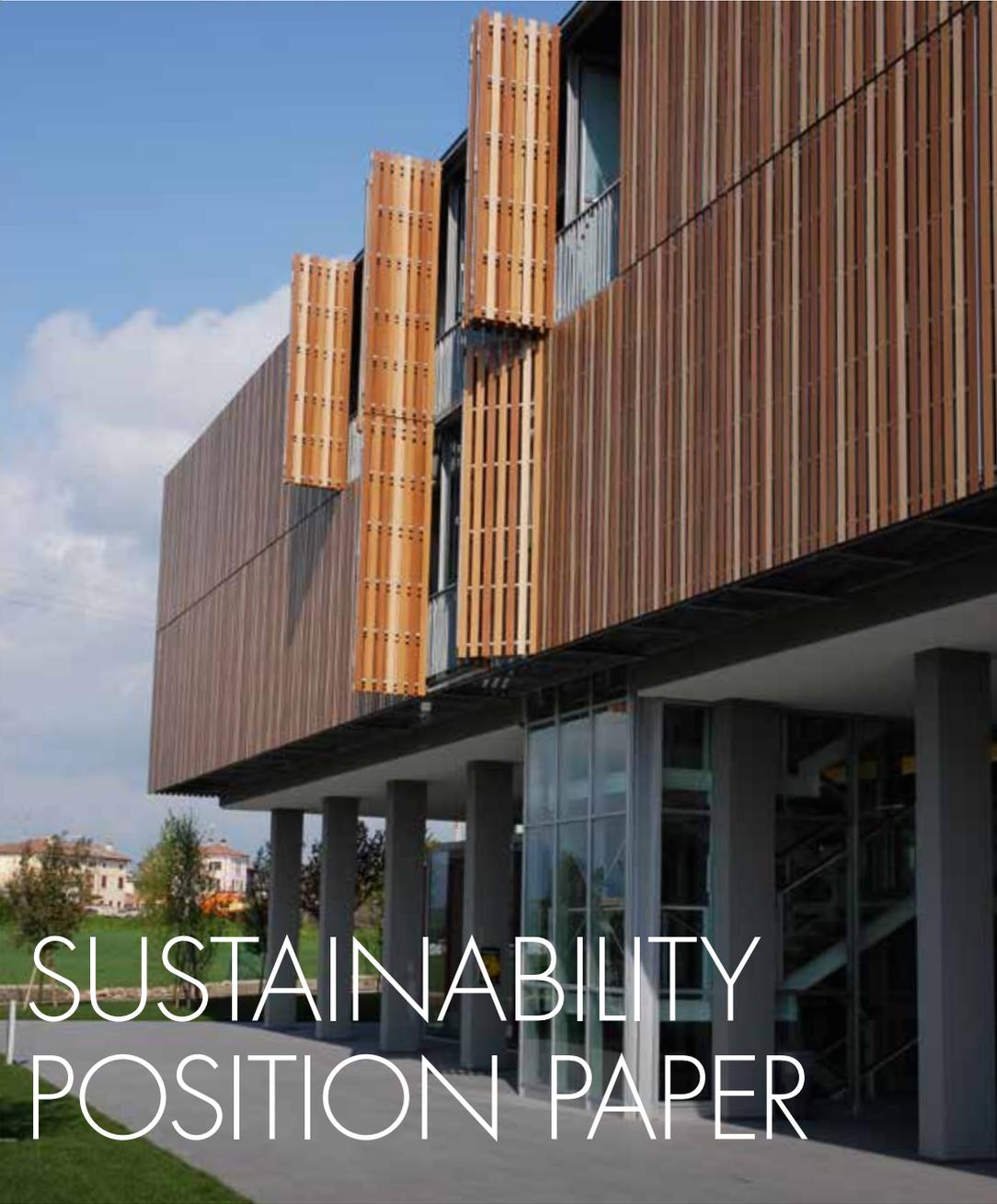


**A FACT BASED DRIVE FOR LASTING IMPACT**



SUSTAINABILITY  
POSITION PAPER

**Think Trespa**

TRESPA®

# INTRODUCTION

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TRESPA IS A LEADING GLOBAL MANUFACTURER OF HIGH PRESSURE LAMINATE PANELS FOR EXTERIOR FAÇADE APPLICATIONS.

Trespa's management and employees put License to Operate (LTO) first in their strategic priorities. LTO includes:

- Health and Safety of employees and the local community
- Product compliance to meet all regulatory requirements
- Transparent reporting and appropriate behaviour by employees
- Sustainability and the preservation of the Environment

Although LTO is ultimately the responsibility of top management at Trespa, the commitment of all employees is also required to ensure that these issues are properly addressed. Sustainability became part of Trespa's LTO strategy in

2010 following an initial survey of the environmental impact of the production site. This paper consists of five chapters:

- 1 Philosophy and Beliefs
- 2 Sustainability Policy
- 3 Progress
- 4 Measuring environmental impact
- 5 Improvement initiatives and targets

Trespa has selected ‘The Environment’<sup>1</sup> as a starting point for our sustainability efforts, which contains the following four topics:

- Prevention of pollution
- Sustainable resource use
- Climate change mitigation and adaptation
- Protection and restoration of the natural environment

This position paper describes the progress of sustainability initiatives and communicates new targets to improve sustainability performance. Over the last years the accuracy of basic data has significantly improved and a program was launched to reduce energy consumption and waste material. A Life Cycle Analysis (LCA)

was executed to assess the impact of these achievements based on 2013 production data, which was supported by thinkstep Sustainability Experts, a leading consultant in the area of sustainable development.

Trespa will restate its position when new results or other detailed information becomes available and will issue a new version of its position paper accordingly. In doing so, Trespa will clearly outline its progress as well as the change in its priorities.

<sup>1</sup>ISO 26000 Guidance on Social Responsibility

# 1 PHILOSOPHY AND BELIEFS

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SUSTAINABLE DEVELOPMENT PROVIDES TRESPA WITH CHALLENGES AS WELL AS NEW OPPORTUNITIES.

## **COMMON SENSE**

Trespa will use a common sense approach in addressing the topic of sustainable development. Our sustainability strategy is based on thorough assessment of environmental impacts.

## **OBJECTIVE AND FACT BASED**

Trespa believes in objective and fact based analysis and has performed an LCA to map its environmental footprint along all relevant parts of the value chain. Trespa trusts that the LCA according to ISO 14040/44 is currently the most objective and fact based method to assess its environmental footprint.

Trespa executed an LCA and will use the results as a basis for new improvement initiatives. Trespa will also continue to monitor alternative available methodologies and adopt ones that are understandable, transparent and standardized and that promote lasting improvements.

## **INTEGRAL PART OF BUSINESS PLANNING AND REVIEW CYCLE**

Trespa will set priorities based on its LCA and agree to realistic but challenging targets to achieve change. All sustainability initiatives have been integrated into Trespa's rolling business planning and review cycle in line with other License to Operate topics. The review cycle comprises annual target setting in the budgeting process, a monthly management review of progress measured in key performance indicators and inclusion of a sustainability paragraph in the annual report.

## 2 SUSTAINABILITY POLICY

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ANY CHANGE SHOULD START WITH THE COMPANY ITSELF. TRESPA'S APPROACH TO SUSTAINABLE DEVELOPMENT IS FRAMED BY THREE BASIC PRINCIPLES:

### **DO NO HARM**

Trespa will comply with the safety, product and sustainability regulations and guidelines set by the countries in which it operates. In addition, Trespa is looking for opportunities to minimize the impact of its operations and products.

### **DO GOOD**

Next, Trespa will support its suppliers and ensure its customers realize their sustainability challenges. Trespa is looking for opportunities to maximize the sustainability contribution of its products in the value chain, including their end use, e.g. façade cladding.

Moreover, Trespa will continue to look for opportunities and initiatives to support and promote longer term sustainable development beyond the direct scope of its current operations.

### **DO BETTER**

Finally, Trespa believes that investing in sustainable development should be beneficial to the long term position of the company. Many sustainability challenges constitute opportunities that make good business sense today and will allow the company to continue to grow.



# 3 PROGRESS ON SITE EFFORTS

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## IMPROVING INFORMATION FROM 2009 TO 2013 LIFE CYCLE ASSESSMENT.

Three clear focal points for Trespa's sustainability efforts have emerged from previous LCAs. The focal points were:

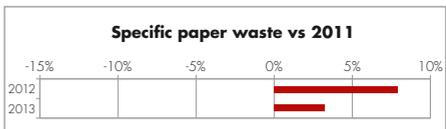
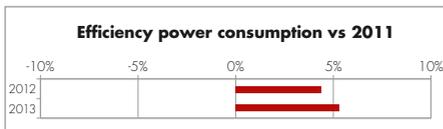
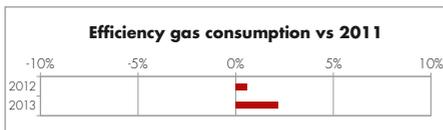
- 1.** Upstream contributions from raw material production and transport.
- 2.** Primary energy use for Trespa's production processes.
- 3.** Onsite emissions originating from resin production and impregnation.

Trespa started a dialogue with its Kraft paper suppliers to get more detailed information on material and energy usage during the Kraft paper production process. More accurate data has been incorporated in the 2013 LCA.

Trespa also put a lot of effort into improving the accuracy of the mass and energy balances of its own manufacturing processes. Detailed energy and mass balances were established for the Trespa HPL manufacturing process, including monthly power and gas consumption reporting. The understanding of energy usage, material usage and waste reduction opportunities has increased. In line with the Multi Year Agreement (MJA3) of the Dutch government, a program was defined and documented as the Energy Efficiency Plan (EEP 2013-2016) to reduce energy at the site by 2% annually.

## TRENDS

Targets have been set for onsite emissions, although the improvement of Trespa's environmental profile was limited up to now. The following charts show the trends of the relative power and gas consumptions and waste generated.



# 4 MEASURING ENVIRONMENTAL IMPACT

## RESULTS OF LCA 2013 FROM CRADLE TO GATE PERSPECTIVE.

The LCA on HPL was updated with 2013 data and covers the total impact of the manufacturing footprint including the extraction and processing of raw materials. Transportation of raw materials to the manufacturing site as well as of finished products from Trespa to its customers was accounted for. The analysis excluded the effects during the use and end of life phase which have to be analyzed on a specific product level. Results were based on the production of 1 ton of HPL.

Environmental Product Declarations (EPD) are leading documents to publish sustainability results. In consultation with thinkstep Sustainability Experts, six key

environmental indicators were selected in the LCA that are commonly agreed upon as most relevant to include in Environmental Product Declarations. These indicators cover emissions of substances with a negative impact on the environment (air, water and soil), emissions of greenhouse gases that contribute to climate change, and depletion of energy resources, both non-renewable and renewable. The LCA indicators are explained in the attachment.

Trespa currently has EPDs available according to the French (FDES), German (IBU) and British (BREEAM) assessment schemes based on the 2009 LCA results.

Results per ton HPL	Environmental impact dimensions	Units	2011 LCA	2013 LCA	delta
Climate Change	Carbon footprint (GWP)	Kg CO <sub>2</sub> -Equiv.	2338	2273	-2.8%
Primary energy consumption	Total Primary Energy	GJ	62.3	56.7	-9.1%
	Renewable energy share	%	24.4	17.3	-29%
Emissions to air, water and soil	Acidification (AP)	Kg SO <sub>2</sub> -Equiv.	6.7	5.9	-11.7%
	Eutrophication (EP)	Kg P-Equiv.	0.80	0.70	-13.2%
	Ozone Depletion Potential (ODP)	Kg R11-Equiv.	9.4 10 <sup>-6</sup>	9.5 10 <sup>-6</sup>	+0.9%
	Photochemical Ozone creation (POCP)	Kg Ethene-Equiv.	0.85	0.76	-10.7%

The 2013 LCA was based on more accurate information on saturated Kraft paper data and paper mix as used in the manufacturing process of Trespa HPL.

Flaws in the input data of the reference year 2011 were corrected. A program will be started to have the EPDs available at this point, updated to Trespa's 2014 LCA data.

# 5 IMPROVEMENT INITIATIVES 2013 - 2015

## MEASURES PROCESS EFFICIENCY AND CHAIN EFFICIENCY.

To ensure progress and positive impact on Trespas's environmental profile, Trespas has added the following list of targets to its business planning.

### **REDUCTION OF UPSTREAM CONTRIBUTIONS**

- Reducing the relative amount of waste (in kg/ton HPL) by 15% at the end of 2015 compared to end of 2011.
- Detailing the specific contributions of chemicals and of woodchips with Trespas's suppliers.

### **REDUCTION OF PRIMARY ENERGY CONSUMPTION**

- Trespas aims to reduce the energy consumption (in GJ) by 8% at the end of 2016 compared to reference year 2011 in line with the Multi Year Agreement of the Dutch government with the industry EEP 2013-2016).

### **IMPROVED PROCESS EFFICIENCY**

The steam boiler generation unit was shut down in 2012 to be replaced in the near future with an energy efficient system based on best available technology. A part of the replacement project will comprise the heat recovery of waste gas incineration. As a temporary measure, certain waste gas

streams needed to be rerouted to the less efficient waste gas incinerator resulting in an increased gas consumption since 2013.

High energy consuming electrical motors were replaced at various places in the production area. Energy consuming vacuum pumps used in the press department were replaced by a more efficient Venturi system.

The production of semi-finished wood fiber intermediates requires high energy consumption. A dedicated energy monitoring system was developed and located along the line to create awareness and interaction with shop floor employees on energy consumption. In addition, several energy reduction initiatives were implemented on electricity and pressurized air usage, and a program was launched to understand the relation between process-variables and energy usage.

All lighting was replaced by low energy consuming LED lighting and presence detection sensors were installed in less frequently visited areas. Also, high energy consuming computers in the plant have been replaced by low energy satellites and a data server has been switched off.

Production of an older paper impregnation line was stopped in 2012. Production of substrate paper for décor intermediate product was outsourced.

One of the press lines was stopped, after implementing efficiency improvements at other presses.

#### **CHAIN INITIATIVES**

Trespa agreed on the construction of a pallet assembly line at Trespa's production site. Less efficient transportation of pallets could be prevented, resulting in less fuel consumption, and correspondingly, CO<sub>2</sub> reduction.

Polyethylene packaging film used to wrap pallets for shipping was removed, leading to lower use of materials at Trespa and less waste disposal at Trespa's customers.

The amount of sawdust has been significantly reduced by optimizing the amount of edge trimming of HPL panels.

The process of cleaning press plates was changed to a more efficient laser treatment.

All refrigeration and cooling equipment

containing the ozone depleting R22 cooling agent has been replaced by environmentally friendlier cooling agents.

Finally, the PEFC chain-of-custody certificate has been achieved, as a part of Trespa's responsible sourcing strategy.

#### **FUTURE ACTIONS**

A detailed investigation of the energy consumption of the Dry Forming line has started and new leads have been found to reduce future energy consumption significantly.

A project was initiated to significantly reduce Kraft paper waste of the paper impregnation line. Opportunities have been found to optimize both material and energy consumption.

Increased awareness of waste disposal at all operational layers of Trespa will lead to many more smaller reduction initiatives.

Trespa intends to execute an updated LCA in 2015, based on full year 2014 data to assess the impact of improvement initiatives.

## **ATTACHMENT**

### **KEY ENVIRONMENTAL INDICATORS**

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#### **EMISSIONS PARAMETERS**

**AP: Acidification Potential** (sulphur dioxide equivalents):

The acidification of soil and water occurs predominantly through the transformation of air pollutant into acids. This leads to a decrease in the pH-value of rainwater and fog from 5.6 to 4 and below.

**EP: Eutrophication Potential** (phosphate equivalents):

Eutrophication is the enrichment of nutrients in a certain place that leads to a sharp decrease in oxygen availability in the local environment system. Eutrophication can be aquatic or terrestrial. Air pollutants, wastewater and fertilization in agriculture all contribute to eutrophication.

**ODP: Ozone Depletion Potential** (CFC 11 equivalents):

The ozone layer in the stratosphere (10-50 km height) is essential for life on earth. It absorbs short-length UV radiation which is important for preventing both earth temperature rise and skin cancer risks. Anthropogenic emissions such as CFCs and HCFC emissions contribute to the depletion of ozone in the stratosphere.

**POCP: Photochemical Ozone Creation Potential** (ethylene equivalents):

Photochemical ozone creation in the troposphere (closest to the earth's surface), also known as summer smog, is suspected to damage vegetation and material. High concentrations of ozone are also toxic to humans.

#### **CLIMATE CHANGE PARAMETERS:**

**GWP: Global Warming Potential** (carbon dioxide equivalents):

In addition to the natural mechanism, the greenhouse effect is increased by human activities. This results in a warming effect at the earth's surface.

## **RESOURCE DEPLETION PARAMETERS**

### ***PED: Primary energy usage***

Primary energy is energy found in nature that has not been subjected to any conversion or transformation process (such as primary energy content in crude oil, natural gas and biomass). Energy that is already converted, for example, steam or other thermal energy derived in any technical process, or electricity will require primary energy to provide this 'delivered energy'. Primary energy demand indicates the amount of energy that the system under assessment has extracted from the natural environment. It also includes energy stored in the final product.

### ***Share of renewable energy***

Renewable primary energy is a part of primary energy that can be naturally replenished (e.g. energy embedded in wood material or from wind or hydro electricity), while non-renewable energy comes from non-renewable resources such as fossil fuels or uranium.

### ***Biogenic carbon (Potential carbon storage):***

HPL products contain paper and wood chips as biomass. Carbon in that biomass comes from the carbon dioxide that was removed from the atmosphere during the biomass growth (thus decreasing the concentration on greenhouse gases in the atmosphere). This carbon is released again at the end of the life of the product (during incineration or disposal). In the current state of regulations (Greenhouse Gas Protocol, PAS 2050), the carbon storage for limited time is not considered to have significant impact on Global Warming and thus is not credited. In some cases, the potential storage credit can still be reported as information.



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