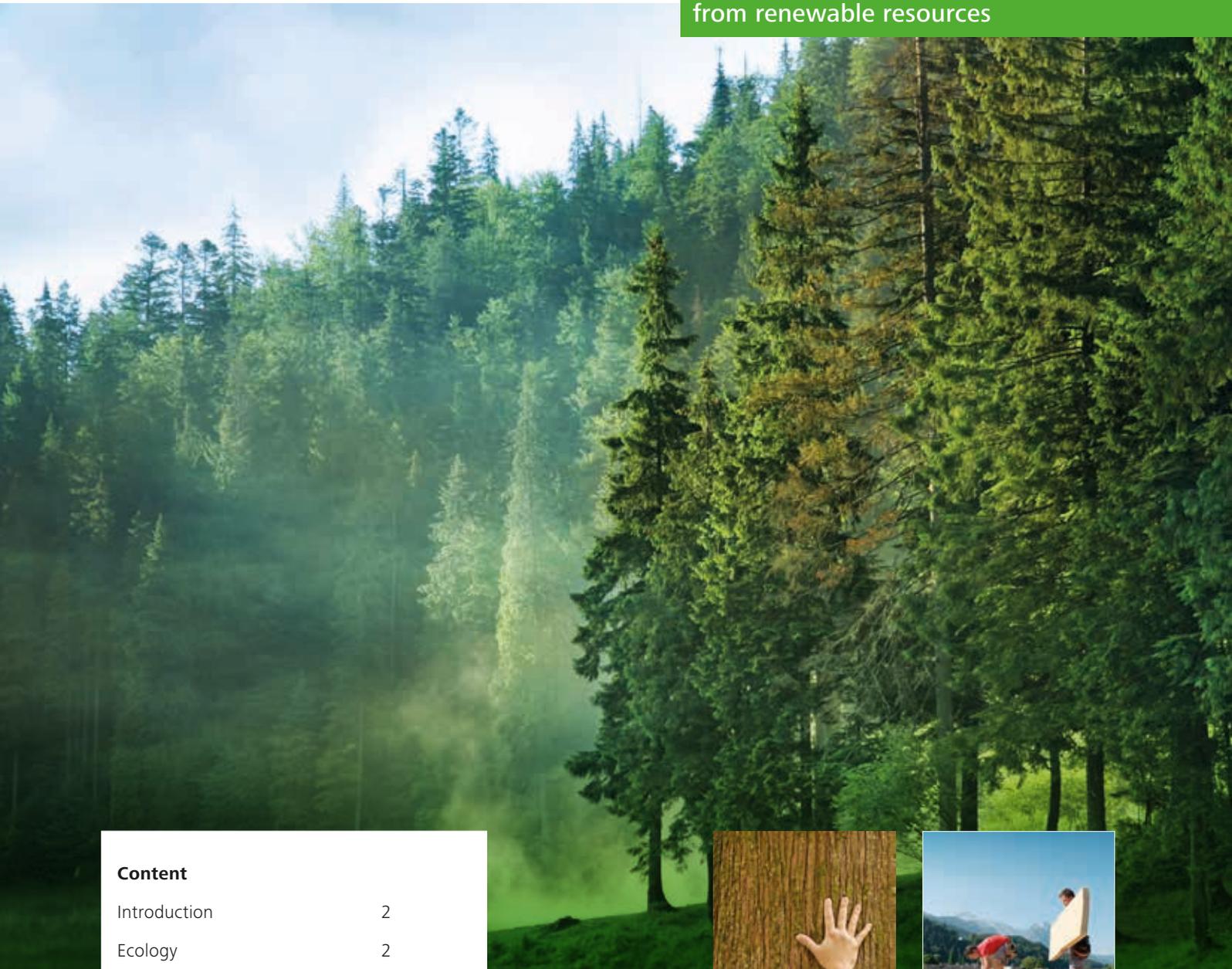


STEICO

Sustainability Report 2018

Environmentally friendly building products
from renewable resources



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STEICO
engineered by nature

Sustainability in the STEICO Group

A. INTRODUCTION

STEICO has always lived sustainability. Our roots as a manufacturer of wood fibre insulating materials go back decades. In the 1990s, when the awareness for energy-efficient building was only just beginning to develop, we were already serving an ecologically oriented clientele with insulating materials made from renewable raw materials. STEICO was one of the first companies to have its entire product range FSC-certified and the biological building properties of its products independently tested and evaluated.

STEICO has now grown out of its former niche - and the importance of sustainability has also changed in recent years. The interest in sustainability has simultaneously become both broader and deeper. In addition to the environment and climate, sustainability also includes social responsibility and concern for the future effects of our actions today. Our customers demand sound and comprehensive information in order to form their own opinions about our products and our behaviour. This gives rise to a responsibility for STEICO that we are happy to take on.

At STEICO, we understand sustainability to be the interplay of economy, ecology and social aspects. This idea is firmly anchored in our corporate strategy. We want to be economically successful in manufacturing environmentally compatible insulating materials and at the same time live up to our social responsibility towards employees and society. STEICO's products are building materials of the future due to their organic nature, and they enable ecological building as part of the sustainable development of our society. We are creating jobs and added value with our ongoing growth. In doing so, we always ensure the long-term loyalty and health of our employees and take appropriate measures.

In this first Sustainability Report, we aim to provide transparent explanations of our business. We want to point out developments and continue them into the future. It is our aim to further develop this report year after year and to enrich it with additional topics. This first step should result in a comprehensive documentation of our activities for more sustainability.

We hope that this report will be a helpful contribution to our customers and partners.

B. ECOLOGY

I. THE FOREST AND RAW MATERIALS

1. PROCUREMENT

The most important raw material for STEICO products is fresh, untreated softwood. STEICO does not use any waste or recycled wood as this could be contaminated with chemicals.

STEICO's production plants are located in wooded areas, so that we can keep transport distances short, usually less than 150 km. For our wood fibre insulating materials and Natural Fibre Boards (hard fibre boards) we do not need special wood qualities, because the wood is defibred in production. This so-called weak wood accumulates for example during forest maintenance and is not suitable for processing in sawmills.

Various log diameters are used for the production of laminated veneer lumber, and the logs are mainly delivered in short lengths. This provides the forestry offices with an optimal opportunity to combine STEICO materials with the supply of high quality timber for other clients.

For the cellulose insulating material STEICO*flor*, STEICO obtains defined used paper qualities which are converted into insulating flakes. Since most of the energy consumed is already used in the production of the paper, the production of cellulose insulation material is particularly environmentally friendly.

2. ENVIRONMENTAL CERTIFICATION

The wood that STEICO uses in production originates from sustainably managed forests, which are 100% certified according to the well-known organisations FSC® (Forest Stewardship Council) or PEFC® (Programme for the Endorsement of Forest Certification Schemes). This not only ensures that the forests are managed sustainably, but also that social standards are adhered to through certification.

STEICO does not use any wood of unclear origin or from protected forests and complies with all EUTR (EU Timber Regulation) rules.

All STEICO products (wood fibre insulating materials, cellulose insulating materials, I-joists, laminated veneer lumber) carry at least one of the certifications mentioned or are available according to both standards.

3. CO₂ STORAGE WOOD

As wood grows, the climate-damaging gas carbon dioxide (CO₂) is extracted from the atmosphere. During photosynthesis, trees split CO₂ into carbon (C) and oxygen (O₂). Carbon is stored in the wood and oxygen is released into the atmosphere. One cubic metre (m³) of wood therefore contains around 1 tonne (t) of CO₂. This CO₂ also remains bound in processed wood products, e.g. in STEICO wood fibre insulating materials and construction products.

Assuming that around 100 m³ of wood is used for a single-family house built using timber construction, this corresponds to around 100 t CO₂ which is removed from the atmosphere (whereby the positive effects of wood fibre insulating materials on the reduction of heating energy have not yet been taken into account).

Particularly when wood is used as a building material, CO₂ is removed from the atmosphere for a particularly long time - namely during the entire service life of the building, e.g. around 60 to 100 years for single-family houses. Only at the end of the building's service life is the CO₂ released back into the atmosphere when the wood decomposes or is burned.

For example, the use of wood products in construction is not a panacea for the climate – but it is an essential contribution to gaining time for the climate-friendly transformation of our society.

In 2018, the STEICO Group processed around 934,875 m³ of fresh wood from sustainable forestry. This means that almost a million tons of CO₂ are stored and removed from the atmosphere in STEICO's annual production.

4. ENVIRONMENTAL PRODUCT DECLARATION (EPD)

An Environmental Product Declaration (EPD) is a type III environmental declaration. This provides quantified environment-related information from the life cycle of a product or service in order to enable comparisons between products or services with the same function.

The STEICO Group has EPDs for laminated veneer lumber and the insulating material STEICO*flex* from French production. An EPD for I-joists is about to be released and further EPDs are in preparation.

II. PRODUCTION

1. USE OF ENERGY IN PRODUCTION

Like every manufacturing company, STEICO needs energy in its production. As the energy consumption in the production plants is considerably higher than at the sales and administration locations, the focus is on the production locations. Electricity and heat/steam are required in particular for the production of STEICO products. Heat and steam are generated from biomass, gas and coal as energy sources.

Electricity is purchased at the respective locations and its production corresponds to the national electricity mix of the country of production.

Heat and steam are generated locally. For this purpose, STEICO maintains appropriate boiler systems that can be operated with coal, gas and/or biomass. In the energy mix, most of the energy is used to generate heat and steam.

STEICO has three measures in place to improve energy efficiency:

- Reducing the use of the fossil fuel coal
- Shifting the distribution in the energy mix by using renewable energy sources such as biomass
- Increasing energy efficiency

At least one biomass boiler is currently installed at each production site. The fifth biomass boiler is currently being completed. At the same time, an existing coal boiler will be converted to biomass. Production residues are used as energy sources for the biomass boilers, e.g. the bark content of the wood. Another part is bought in.

STEICO is also investing in the installation of an electric turbine that will allow a significant proportion of electricity to be generated from biomass in a climate-friendly manner. The turbine is scheduled to go live in 2020.

Sustainability in the STEICO Group

STEICO Group: Energy consumption and changes

Energy source [MWh]	2016 Share [%]	2017 Share [%]	2018 Share [%]	Change 2018/2016 [%]
Electricity	15%	16%	16%	+12%
Coal	59%	52%	40%	-30%
Gas	5%	7%	7%	+60%
Biomass	21%	25%	36%	+79%

In comparison to 2016, 2018 was a year in which the STEICO Group was able to **reduce energy generation from coal by 30%**. At the same time, energy production from **biomass was increased by 79%**.

In addition to the increased use of biomass, **energy efficiency was increased by 17%**.

It is planned to discontinue the use of fossil fuels, especially coal, as far as possible. The Czarna Woda site is to be converted to biomass as an energy source for regular production from July 2019. The Czarnków site is to be operated in regular biomass operation from September 2019. Coal is to be kept at both locations only as a reserve energy source.

2. ENERGY CONSUMPTION IN ADMINISTRATION

In the administration area, STEICO is also making extensive investments to reduce energy consumption. The headquarters in Feldkirchen, for example, are built using STEICO's own construction system and are characterised by their high energy efficiency, which almost corresponds to the passive house standard. The integrated photovoltaic modules mean more energy is generated over the year than the building needs (so-called plus-energy house).

3. CARBON ACCOUNTING

By analysing the carbon footprint (CO₂), it is possible to identify reduction potential, develop appropriate activities and define climate protection targets. The STEICO Group's corporate carbon footprint includes seven locations in four different countries. In Germany and Great Britain these are purely administrative locations, in Poland and France both administrative locations and plants. The emissions of the sales employees in the external sales force of all countries are also included in the calculation.

In 2018, STEICO's business activities caused a total of 376,343.4 tons of CO₂ emissions throughout the Group. Of this total, 208,005.5 t are direct CO₂ emissions (Scope 1) and 168,337.9 t of CO₂ are indirect emissions from grid-bound energy (Scope 2). The largest source of emissions is the energy source for the production of steam and heat for

the production process with 54.6%. The second largest item is emissions from electricity with 44.7%. Emissions from the vehicle fleet came in third place with 0.7%. 99.8% of the STEICO Group's emissions are generated in the plants, while the administrative locations are only responsible for a small proportion of the emissions. The STEICO Group headquarters in Feldkirchen produces no emissions thanks to its own solar power production and the use of heat pump heating.

2018: CO₂ emissions

	Emission source	t CO ₂	[%]
Scope 1	Heating energy	205,313.2 t	54.6%
	Vehicle fleet	2,692.3 t	0.7%
Sub-total Scope1		208,005.5 t	55.3%
Scope 2	Electricity	168,337.9 t	44.7%
Total		376,343.4 t	

The calculation was based on the guidelines of the Greenhouse Gas Protocol.

Scope 1

Scope 1 shows all CO₂ emissions that can be controlled directly by the company drawing up the balance sheet (direct CO₂ emissions). This includes the combustion of fossil fuels (mobile and stationary), CO₂ emissions from chemical and physical processes and refrigerant leaks from air conditioning systems.

Scope 2

Scope 2 shows indirect CO₂ emissions caused by the combustion of fossil fuels during the production of electricity, heat, cooling and steam by external energy suppliers. Disclosing these in a separate category avoids double counting when comparing CO₂ emissions from different companies.

CO₂ emissions from production are offset by CO₂ storage in the wood used in STEICO products.

2018: Comparison of CO₂ emissions / CO₂ storage

CO ₂ emissions Scope 1+2	Wood used	CO ₂ storage in wood used	Positive difference
376,343 t	934,875 m ³	934,875 t	558,532 t
100%		248%	148%

The wood used in annual production for STEICO products stores more than twice as much CO₂ as was released during manufacture. Positive effects of CO₂-avoidance through the use of STEICO insulating materials is not taken into account.

STEICO's declared goal is to continue to significantly reduce CO₂ emissions in the coming years. This will be achieved

in particular by switching to biomass for the generation of

steam and heat in production in order to be able to dispense with the use of fossil fuels in the long term. The electric turbine which is to be installed on one of the biomass boilers will also help to reduce CO₂ emissions from the use of electricity.

III. RESOURCE EFFICIENCY

STEICO relies on large, integrated locations that enable high production efficiency. For example, several production plants can be supplied with heat and steam via a few central boiler plants. In addition, STEICO's production cycles focus on avoiding waste and using resources intelligently.

1. WOOD-FIBRE INSULATION MATERIALS

Wood components that are unsuitable for production, e.g. the bark, are used to generate energy in the plant's own biomass boilers. Products that are outside the specifications can be returned to the production process. Otherwise, they can also be used to generate energy in the biomass boilers.

2. LAMINATED VENEER LUMBER

Approximately 2.3m³ of roundwood is required for the production of 1m³ veneer laminated timber. The round wood is peeled into veneers, from which the laminated veneer boards are made. During the processing of round wood, around 0.6m³ of bark and non-recyclable wood components are produced. These are used to produce steam and heat in the biomass boiler. Since not every veneer ribbon is suitable for the production of laminated veneer lumber, 0.5m³ of unusable veneer is produced, which can, however, be further processed into wood fibre insulation materials at the same location. The trunk's core cannot be peeled into veneer for technical production reasons. A round residual core of 0.2m³ remains. This residual wood is sawn into strips on our own plant, and used to make STEICO transport pallets.

In this way, STEICO ensures 100% use of its wood resources. At the same time, the energy from the by-products can be used to cover the energy requirements of the Czarna Woda production site to such an extent that regular operation on a biomass basis is planned from July 2019. Coal will then only be held temporarily as a reserve energy source.

3. WATER

Water is a valuable commodity that is needed in large quantities for our production. At STEICO, we therefore strive

to make the best possible use of water as a resource, to avoid waste water and to reduce water consumption.

We have already established a closed water cycle at our plant in Czarnków. In the first step, fresh water is used for the production of steam and heat, which are fed directly into the production process. The resulting industrial water is then used for the production of wood fibre insulation materials. Some of the water evaporates during the drying process and is replenished with industrial water from steam and heat production, so that all the water that we obtain for our production is reused several times and fed back into production again and again.

At our plant in Czarna Woda, production water is biologically treated. At the same time, investments are being made to install closed water cycles. The amount of water used for biological treatment has already been significantly reduced by two thirds - from 58% in 2016 to 13% in 2018 (compared to the fresh water used). At the same time, the efficiency of water as a resource compared to the production volume was increased by 6%.

C. ECONOMY

I. GROWTH

The STEICO Group has recorded steady growth in recent years. Acting sustainably while being aware of values is a key part of our success.

- Larger production sites can be operated more efficiently. The energy used decreases in relation to the output quantity.
- Growth enables investments in energy-efficient production facilities.
- Larger companies that demand certified timber are strengthening efforts towards sustainable forest management.
- STEICO insulation materials are environmentally friendly in and of themselves, as they save considerably more energy during their lifecycle than is required for their manufacture. That is why growth in this area does not lead to an increasing burden on the climate.
- Growth creates jobs. With an average of 1,627 employees, the STEICO Group employed 249 more people in 2018 than in 2016 (1,378 employees).

II. PRODUCTS

Insulation materials are classic products for improving the energy efficiency of buildings and are known to contribute to protecting the climate and the environment. Laminated veneer lumber and I-joists are also characterised by sustainability and environmental protection aspects in use.

1. ENVIRONMENTALLY FRIENDLY INSULATION MATERIALS

Insulation materials play a key role in determining a building's energy efficiency. Due to their insulating effect, they significantly reduce the amount of heating energy required. STEICO wood fibre insulation materials and cellulose insulation are characterised by particularly low thermal conductivity. The lower the thermal conductivity, the better the insulating effect. The thermal conductivity is given as the so-called Lambda value (λ). With $\lambda_D 0.036$, the flexible wood fibre insulation mat STEICO *flex* has the lowest thermal conductivity of natural insulating materials. With $\lambda_D 0.037$ the facade insulation board STEICO *protect 037* has the lowest thermal conductivity for stable wood fibre insulation boards. The cellulose insulation STEICO *floc* with $\lambda_D 0.038$ also offers one of the best values in its category.

As part of the STEICO construction system, the main STEICO insulating materials are certified as components suitable for passive houses. This means that they are suitable for use in buildings which, due to their high energy efficiency, can cover their heating requirements without traditional heating.

The STEICO Group currently produces about 2.5 million m³ ecological insulating materials. Assuming a quantity of about 75 m³ of insulating material required for state-of-the-art insulation for a single-family house in timber construction, more than 33,000 single-family houses can be insulated per year. STEICO is thus making a contribution to the energy revolution and to a climate-neutral building stock.

2. I-JOISTS

STEICO's I-joists have the shape (geometry) of an H beam or a double T beam. In contrast to a solid wood beam with a rectangular shape, the middle section of the I-joist is much slimmer, and it is thus made with comparatively little material. This saving in solid material is filled with insulating material in timber frame construction. In a roof construction, for example, this shifts the ratio between the proportion of insulating material and the proportion of supporting structure in favour of the insulating material. A higher proportion of insulating material in turn means a higher energy efficiency of the entire component. By using STEICO I-joists, the energy efficiency of a component can be improved by up to 15% (compared to the use of solid wood cross sections).

In this way, I-joists have special significance in low-energy and passive houses and contribute to avoiding heating energy in these buildings.

3. LAMINATED VENEER LUMBER

Laminated veneer lumber is an industrially produced wood-based material with a particularly high load-bearing capacity. The use of energy in its production is offset by the particularly efficient use of wood as a raw material (cf. B. III. 2.). When producing laminated veneer lumber, formats can be produced that cannot be reproduced by naturally grown wood (boards up to 2.5m wide, 90mm thick and 18m long).

In addition, the high strength of laminated veneer lumber allows a particularly slender design of the load-bearing structures, which means that construction can be carried out with less material overall.

III. DISPOSAL

From processing residues to materials arising during dismantling: STEICO wood fibre insulating materials, I-joists and laminated veneer lumber can be disposed of in the same way as untreated wood (waste code AVV/EAK 030105/170201).

STEICO cellulose insulation can be disposed of in the same way as waste paper (waste code AVV/EAK 170604/170904).

In Germany, STEICO offers its customers a collection service for packaging material in cooperation with a national waste disposal company.

D. SOCIAL AFFAIRS

Committed employees are an important key factor for economic success at STEICO. It is therefore of particular concern to us to keep our staff's motivation and health at a high level and to establish a strong bond with the company in order to secure its long-term success.

1. DIVERSITY

STEICO is an international group and employs people from different cultural backgrounds and maintains business relationships in many countries. In doing so, we actively strive for respectful interaction and mutual understanding of intercultural differences.

2. GENDER EQUALITY

Many careers in the construction industry are still mostly dominated by men. STEICO sees an equal relationship between the sexes as a matter of course and promotes the development of women at all hierarchical levels.

2018: Percentage of women (as of 31 Dec. 2018)

Type of employment	Total number of employees	Number of women	Share of women [%]	Percentage of women in management positions [%]
Production	1515	287	19%	15%
Administration	185	81	44%	47%
Total	1700	368	22%	23%

3. COMPATIBILITY OF FAMILY AND CAREER

To make it easier for women in particular to return to work after parental leave, we at STEICO offer individual working time models that are tailored to the needs of the individual and take family requirements into account.

4. INDIVIDUAL WORKING TIME MODELS

We generally offer individual working time models to all employees who are unable or unwilling to work full-time. This enables us to make the best possible use of everyone's potential and keep important expertise within the company. In Feldkirchen, for example, 26% of our workforce use the option of individual part-time models.

5. TRAINING AND CONTINUED PROFESSIONAL DEVELOPMENT

All employees of the STEICO Group have access to a wide range of opportunities for personal and professional development. This offer ranges from selective further

training measures to extensive education and continued professional development programmes.

6. CO-DETERMINATION

At all our locations, we offer employees the opportunity to participate actively in the development of the company, e.g. through a company suggestion scheme. In addition to an employee representative body, which decides on the expenditure of the social fund, there is a works council at our production sites which represents the interests of the workforce.

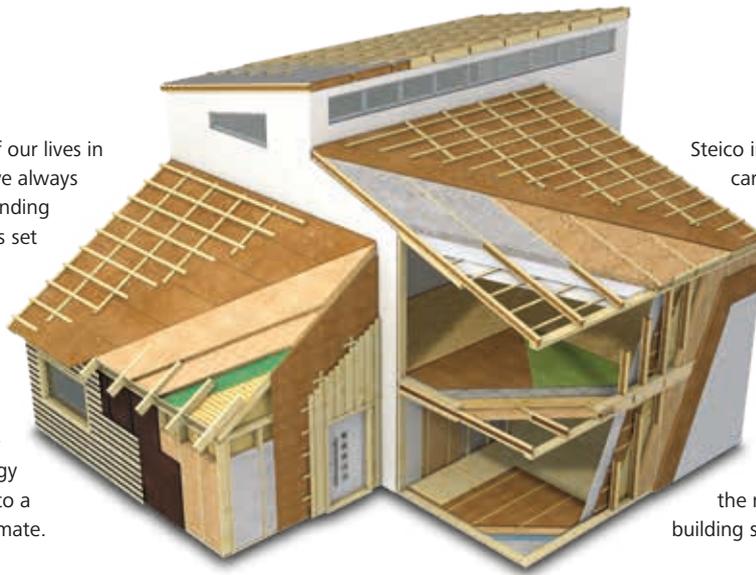
7. DISCOUNTS

STEICO Group employees can purchase products from our own production at favorable conditions.

E. CLOSING REMARKS

STEICO aims to operate sustainably and to live up to our responsibility for the environment and society. This report lays the foundation for transparent communication on sustainability. We will continue to expand and intensify this commitment in the coming years.

We spend approx. 80 % of our lives in enclosed rooms. But are we always aware what we are surrounding ourselves with? STEICO has set itself the target of developing building products which consider the needs of both man and nature. Our products are therefore produced using sustainable natural materials. They help reduce energy use and add considerably to a natural healthy internal climate.



Steico insulation and construction materials, carry a number of distinguished 'seals of approval' which is a sign of high quality, healthy and functional building products. The raw materials used in Steico products are certified by FSC® (Forest Stewardship Council®) and PEFC® (Programme for the Endorsement of Forest Certification®), ensuring a traceable and fully sustainable usage of the raw materials. STEICO, the number 1 choice for your sustainable building solutions.

Natural Insulation and Construction Systems for New Builds and Renovations – Roof, Ceiling, Wall and Floor



Renewable raw materials without harmful additives



Excellent cold protection in winter



Excellent summer heat protection



Energy Saving and increased property worth



Weather tight and breathable



Excellent Fire Protection



Excellent sound protection



Environmentally friendly and recyclable



Light and easy to handle



Insulation for healthy living



Strong quality control



Compatible insulation and structural building systems



STEICO
engineered by nature

STEICO SE • Otto-Lilienthal-Ring 30 • 85622 Feldkirchen (GER)
Tel.: +49-89-99 15 51-0 • Fax: +49-89-99 15 51-700
Internet: www.steico.com • E-mail: info@steico.com