



# Sustainability @ Lohmann

Sustainability Report 2019

## Who we are

We offer smart, customized bonding solutions and excellent service for our customers. Our products can be found in the automotive, building & construction, consumer goods & electronics, graphics, medical, hygiene and technical textiles industries. The portfolio covers double-sided adhesive tapes and high-tech die-cuts as well as structural adhesive films and state-of-the-art closure solutions. Almost all products are customized solutions. We can look back on eventful 168-years of history.

The creative performance of our Lohmann Bonding Engineers is wide-ranging. Starting with global specification work, to individual product development and finally to an innovative bonding construction. The latter extends from the formulation and polymerization of adhesives to coating and converting as well as to the production of high-quality die-cuts. By means of a mechanical integration of the bonding solution we support and optimize the customer's production process on site. We call this philosophy the "Smart Bonding Approach".

We want to do right by our target groups, increase our company's value and secure its future sustainably. We do this on the basis of our values trust, accountability, performance, entrepreneurship and global thinking. We want to offer high-quality products and a comprehensive service to our global customers. This includes being locally available for them. Hence, we are operating at numerous international branches and with exclusive sales partners in over 50 countries.

For us, a continuous development of our products and production technology is part of ensuring a sustainable future as well. By means of our global presence and our high-performance technology center we can react quickly to market changes and develop customized products.

Our product brands are: Duplo**COLL**®, Duplo**FLEX**®, Duplo**MED**®, Duplo**TEC**®, Flex**EAR**®.



## Environmental protection for present and future generations (1/4)

As a company in the German chemical industry, we have been actively involved for decades in the global initiative “Responsible Care“. Environmental protection is a binding corporate goal for Lohmann and stands as one of the core elements of our globally verified, integrated management system, firmly anchored in all business processes.

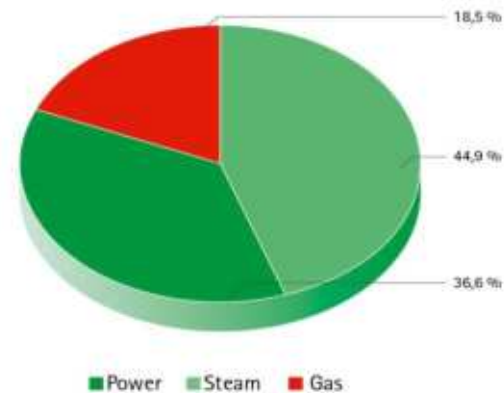
### 1) Environment / Climate Protection

**Energy / Resources:** Electricity, Gas, Heat, Water, Emissions, Waste

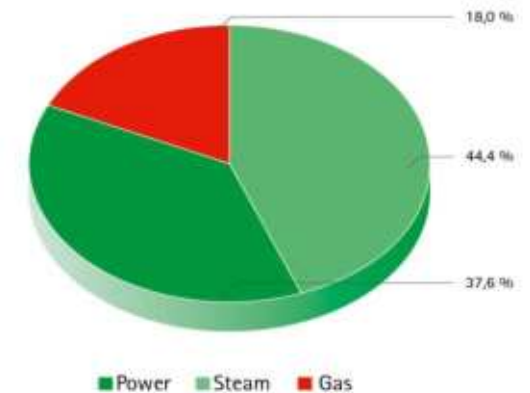
#### Lohmann's Measures / Results:

- In order to sustainably improve the energy efficiency of the company, Lohmann has introduced an environment and an energy management system according to DIN EN ISO 14001 and ISO 50001, for the sites Neuwied, Altendorf and Remscheid. Additional international management systems are: ISO 9001 - Quality, ISO 13485 – Medical Devices, ISO 14001 – Environment, IATF 16949 – Automotive
- Energy management with online energy monitoring
- Increased energy efficiency
- Modern exhaust air purification plants with energy recovery
- Annual energy, solvents and waste analyses
- Sites China, Neuwied: Renovation dryer plant: new frequency controlled motors with lower power demand, lower, controlled air volumes, optimized heat transfers
- Neuwied: Commissioning of a new central compressed air supply plant: demand and frequency controlled compressors, reduction of pressure level from 7.5 to 6.5 bar, heat recovery with input into heating network (115.000 kWh in 2018), reduction of noise emissions
- Sites Remscheid, Spain: New modern extraction systems (lower noise emission)
- Modernization of the drinking water network in individual buildings: fresh water is used in the sanitary and social areas, as well as temporarily as process water

Neuwied: Share of energy source from overall energy requirements 2017



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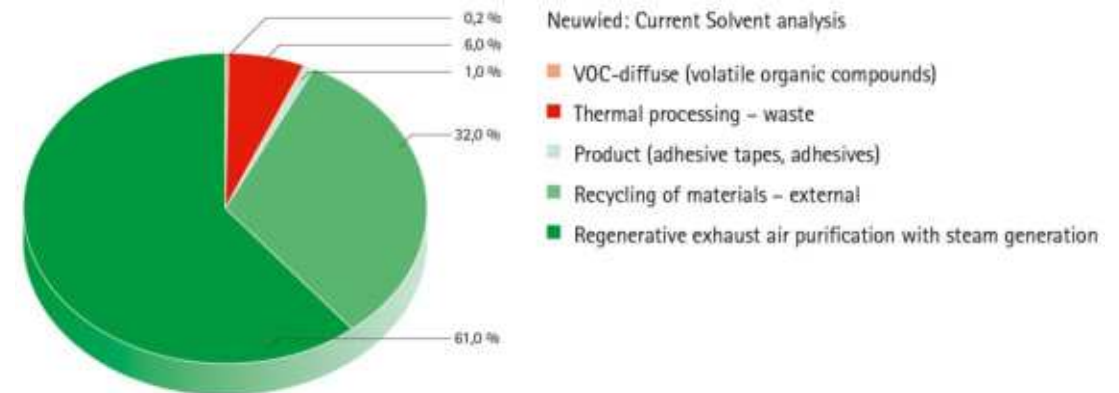
- Neuwied: Renovation of the sewage networks
- Innovative drinking water supply as part of the "work-place-development"; Installation and commissioning of a new cooling supply system
- Sites China, Neuwied, Remscheid, Spain; GB: Switching to LED lighting in production facilities and offices
- Remscheid: Installation of two new condensing heating systems
- China: Reduction of VOC/emissions and energy efficiency in both electric and natural gas (e.g. installation of an exhaust gas collection and disposal system in production)
- Altendorf: No industrial waste water, utilization of well water, use of waste heat from the neighboring biomass cogeneration plant for space heating
- Future measures: centrally regulated instead of decentralized process refrigeration

## Environmental protection for present and future generations (2/4)

### 2) Resources Conservation

#### Lohmann's Measures / Results:

- Reduction of emissions (thermal exhaust air purification)
- Prevention of waste, e.g. multiple use of process films in the coating process
- Neuwied: New cleaning system for the production of adhesives
- Neuwied: Introduction of high-pressure cleaning system for cleaning production containers (saving 50% of both sewage and cleaning time for container cleaning)
- Reuse / recycling of materials
- Neuwied, Sweden: Networked concept for production sites that links production and energy requirements in an intelligent way: Heat from production processes is not discharged into the environment but is made available to the plants as power
- Environmentally friendly packaging concept
- A new combined heat and power plant in Neuwied supplies the plant with heat and electricity: A modern heating station ensures the heat supply of all buildings at the site in Neuwied. It consists of two gas condensing boilers, each at 575 kW (kilowatts) heat output and a CHP plant with 216 kW and 142 kW power output. Thus, Lohmann has strengthened its energy independence, as the company produces its own electricity at about 8-9% a year. Moreover, the cost of electricity at the location has been significantly reduced.
- Neuwied: Energy efficient refrigeration with very good EER (Energy Efficiency Ratio) and heat recovery



- Renewal of sanitary areas: Motion sensors for energy-saving lamps, automatic water-saving flushing devices
- Development platform "solvent-free & water based technologies" (e.g. Dry Coating project, introducing solvent-free adhesive bonding systems, lower power demand because drying process is ceased)
- Neuwied: Electric filling station at the Technology Centre
- Altendorf, Remscheid: Construction of storage and logistics buildings .Fewer transports to external logistics service providers
- Uniform corporate image at all sites worldwide (Layout design according to environmentally friendly aspects, e.g. "moss wall")
- Neuwied: Sustainability project at the canteen (e.g. waiver of plastic packaging, cutlery, cups etc.)

## Environmental protection for present and future generations (3/4)

### 3) Product related Environmental Protection

The consideration of the entire life cycle of a product from companies, as well as from the German / European Environmental Policy (Life Cycle Management)

#### Lohmann's Measures / Results:

- Implementation of legal requirements and demands (e.g. water conservation, air pollution control, waste disposal, noise reduction)
- Fulfillment of reformulated standards (e.g. REACH, RoHS) and consistent monitoring
- No raw materials sourced from crisis areas (Supplier Code of Conduct)
- Substitution of substances hazardous to health wherever possible
- Environmental and energy management system (e.g. ISO 14001 and 50001), quality management system
- Identification of environmental and energy indicators
- Declaration on "declarable substances"
- Use of sustainable raw materials (e.g. tea filters, paper, renewable raw materials)
- Complete recycling of packaging (Eco-Signet / Sustainability Logo)
- Development of products that in their application contribute to a better environment: For example, in the building sector, use of "Static Direct Glazing" (new insulating glass bonding, which eliminates the thermal bridge and thus optimizes the thermal insulation of the window), or Lohmann's vapor barrier tapes for sealing the building shell) as well as structural bonding films (e.g. Epoxy-Tapes)
- Almost all adhesives for applications in the construction industry are water-based, acrylic adhesives that can be classified as sustainable even during the manufacturing and finishing processes.
- Sustainable, self-adhesive products for solar energy generation
- Usage of solvent-free adhesives even for complex applications (e.g. CPT-Tape: Clear Performance Tape for glass-metal-bonds, glass partition walls)
- Eco-efficient product developments, e.g. for mounting insulating materials on house facades
- Future measure: Construction of a dry coating plant in order to introduce solvent-free adhesives





## Environmental protection for present and future generations (4/4)

### 4) Risk Protection and Hazard Prevention

Supervisory and advisory tasks in the areas of protection in occupational, health and accident prevention. Comprehensive, preventive and defensive fire control, taking into account conditions that are constantly changing.

#### Lohmann's Measures / Results:

- Investigation and analysis of occupational accidents in terms of additional preventive measures (e.g. reducing the accident rate)
- Systematic, sustainable and legally secure implementation of all measures for occupational safety and health protection
- Constant updating and documentation of the risk assessment
- Identification, evaluation and assessment of fire risks in all divisions
- Neuwied: Plant fire brigade with specialized knowledge and equipment for all fire risks and environmental aspects
- Regular safety training for staff and external persons (e.g. fire extinguishing drill)
- Active improvement of safety standards by means of effectiveness control and regular audits
- Modern online safety trainings (SAM by Secova)
- Various measures regarding occupational safety and health protection (e.g. measurements for odour emissions).



## II. Economy

### Socially responsible business

In order to act responsibly, we must be economically successful so that we can also support projects for sustainable development and invest in the latest technology. Therefore, economics has the same importance for us, as does environmental protection and our commitment towards our employees and society.

### Profitability

#### Lohmann's Measures / Results:

- A complete value chain: Everything from one source
- Lohmann's "Smart Bonding Approach": Starting with the world-wide specification work, followed by the individual product development, through to innovative adhesive construction. With the aid of mechanical integration of the adhesive solution, the production process of the customer is supported and optimized on site
- Pursuit of process excellence
- Customer-oriented, efficient processes
- Lean topics aim at establishing a systematic, flowing process-organization worldwide. It is Lohmann's corporate philosophy to work towards the exclusion of all processes that are not necessary for the value chain in production and management with the aid of a stringent organization. The objectives are organized information and process chains. This also includes workplace management according to 5S (5S stands for sort, systematic structuring, cleanliness and orderliness, setting standards, self-discipline), customer-relationship-management, value stream analysis at different sites (e.g. Altendorf, China, Neuwied, Spain, GB or USA), maximized cost savings by means of tool and raw material optimization).  
*For example:*
  - » **Altendorf:** SMED lean management method to shorten setup times by means of technical and organizational adjustments.
  - » **China:** Value Stream Mapping of Material Flows.

- » **Great Britain:** Scrap, set-up, and material waste recycling and further utilization, e.g. for educational establishments.
- » **Spain:** Lean Management implementation concerning waste material reduced from 1.7% in 2017 to 1.1% in 2018 (as percentage of total material consumption). Scrap material reduced from 0.32% in 2016 to 0.17% in 2018.
- » **USA:** optimum cost savings by tool and raw materials optimization as well as adjustments to the processes.
- Development processes according to "Lean Six Sigma": Description, measurement, analysis, improvement and monitoring business processes using statistical methods
- "Lean Six Sigma Green Belt", training and establishment
- Monitoring the overall performance of systems with the aid of aggregated indicators
- Focusing on strengths, a clear-cut strategy
- Definition of Lohmann's "Vision-Mission-Values-Strategy"
- Long-term investments (e.g. the new technology center: A multifunctional building with the Bonding Arena®, a flexible workspace for all market-relevant functions (e.g. rapid prototyping, mountodrom). Further special features: a unique high-performance coating line for innovative process technology and coating technology. Furthermore, a modern conference center for internal and external events)
- Long-term and reliable supplier partnerships (Supplier Code of Conduct)
- Neuwied: Planning of a dry coating plant for solvent-free adhesive bonding systems



## III. Social Issues

### With people for people (1/2)

Healthy and motivated employees are the key to our company's success and the foundations of our sustainability concept. As a responsible and globally active company, it is also important to contribute to the positive development of society. An essential element of our sustainability strategy is our Code of Conduct, in which we have formulated specific demands in relations to our actions. These apply to all executives and employees of Lohmann.

#### 1) Employees

##### Lohmann's Measures / Results:

- Neuwied: Corporate health management / promoting sport (e.g. in-house sport groups in various types of sports)
- Safe and fair workplaces worldwide
- Ergonomics and its sustainable improvement worldwide
- Sites in Germany: flexible working time models that take into account the reconciliation of family and work life
- International exchange of knowledge in working groups across sites and countries
- Internal (Lohmann Academy) and external trainings worldwide
- Neuwied: Training and internship programs (e.g. the "Mittelrhein Model" since 1975: Linking together business studies and industrial training in a commercial occupation)
- In-house training program for new employees worldwide (e.g. the international "Fit for Lohmann")
- Code of Conduct
- Global employee satisfaction survey
- Leadership principles and leadership training program
- Sites in Germany: funded company pension
- Lohmann-Partner AG (employee affiliated company of the Lohmann Group); all active employees can acquire shares and thus become co-owners





## III. Social Issues

### With people for people (2/2)

#### 2) Social and Corporate Responsibility

##### Lohmann's Measures / Results:

- Sustainable support of selected projects at home and abroad (e.g. German Doctors, "Lohmann for Haiti")
- Permanent cooperation with charitable institutions
- Cooperation with schools and associations etc. (e.g. project "Trans-Job")
- Offering various student internships at different sites (e.g. Neuwied, Remscheid, Altendorf, Great Britain)
- Skilled occupations: machine and plant operator, warehouse logistics, industrial clerk ("Mittelrhein Model"), information clerk, chemical technician, laboratory chemist
- Neuwied: Multiple commendations as best training organization
- Promoting scientific talent (e.g. for over 40 years a sponsoring company of "Jugend forscht")
- Earmarked donations and sponsoring in projects of a manageable size
- Supporting the integration of international employees, internships for refugees
- Cooperation with authorities and institutions
- Neighborhood information management
- Peter Barth Scholarships: promotion of candidates in the areas of chemistry and materials science
- "School Laboratory" initiative which takes place at various colleges and universities, and we are member of the associated sponsorship society
- Cooperation with schools and associations for the regional event "Night of Technology": A platform and fair for young scientists
- Code of Conduct
- Worldwide social engagement (Great Britain: many charity events, e.g. dragon boat race, marathons and cycle rides for charity, Altendorf, Neuwied, Remscheid: Cap-collection campaign organized by trainees for polio vaccination, Poland: Warszawa Business Run for a charitable purpose)





Please note that we are frequently updating the Sustainability Report on our website. For the latest information please visit [www.lohmann-tapes.com](http://www.lohmann-tapes.com) → **Company** → **Quality and Environmental Policy** → **Sustainability Report**

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