

Cold rolled steel Excellence



WAEZHOLZ



**// OUR CUSTOMERS CAN REST
ASSURED THAT WE ALWAYS
EXCEED EXPECTATIONS
IN EVERYTHING WE DO. //**

DR. HANS-TONI JUNIUS, PRESIDENT

Waelzholz Excellence

Our customers consistently require better products as their companies grow and change in order to meet their respective customers' needs. Among the factors driving these requirements are more efficient manufacturing processes, more rigorous safety requirements, and the automobile industry's ongoing need for weight reduction. Outstanding, consistent, and reproducible material properties are essential in order to meet these demands.

At Waelzholz, we are able to meet these needs by employing effective, innovative processes to develop a wide array of high quality products. Waelzholz products consistently exceed established industry standards. In addition to our standard grades, we regularly develop high-performance grades to meet the individual specifications of customers.

This is how we achieve Engineering Excellence.

We believe that it is equally important to understand the unique processes of each customer so that our experts can offer the best possible guidance in product selection and application. Our global presence allows us to assist our customers in markets all over the world. We are dedicated to helping you find the steel strip and service you need to make your business even greater.

This is how we achieve Global Service Excellence.

Waelzholz Internationality



USA

Waelzholz North America in Cleveland, Ohio, supplies the North American market with tailor-made materials.



Brasil

Brasmetal Waelzholz in São Paulo produces annealed, hardened and tempered as well as surface coated steel strip.

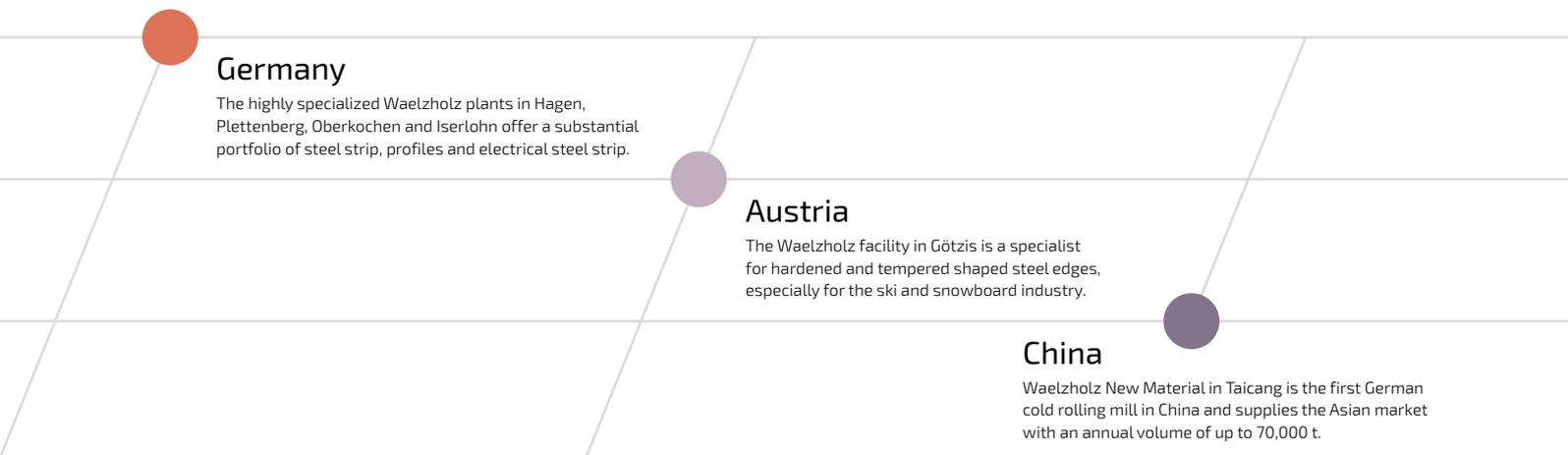


France

The Waelzholz Service Center in Thiers, France, offers customized services to the French market.

// COLLABORATING ACROSS TIME ZONES IS INTEGRAL TO OUR DAY-TO-DAY OPERATIONS. WE CONTINUALLY INTERACT WITH OUR CUSTOMERS AROUND THE GLOBE. //

VOLKER DORNIS, SALES



Germany

The highly specialized Waelzholz plants in Hagen, Plettenberg, Oberkochen and Iserlohn offer a substantial portfolio of steel strip, profiles and electrical steel strip.

Austria

The Waelzholz facility in Götzis is a specialist for hardened and tempered shaped steel edges, especially for the ski and snowboard industry.

China

Waelzholz New Material in Taicang is the first German cold rolling mill in China and supplies the Asian market with an annual volume of up to 70,000 t.

Waelzholz has been operating internationally for many years. Our production facilities and service centers throughout Europe, North America, South America, and Asia allow us to help our customers succeed in their target markets. Our experienced staff is available wherever and whenever our customers need us, providing solutions with the highest quality products available and expert advice.

Over 50 percent of our sales are generated internationally, with more than 25 percent of our products manufactured outside Europe. Thanks to our many years of experience on

the global stage, we are well known as a valuable partner by companies around the world. For example, our state-of-the-art production facility in São Paulo, Brazil has been in operation since 1973 and currently has a production capacity of more than 100,000 tons of steel strip.

Our materials technology and quality management departments, located at our headquarters in Hagen, Germany, work closely with each of our international facilities to provide our customers with consistency, expertise, and the highest quality products worldwide.

**// WE CONTINUALLY INTERACT WITH OUR NETWORK
OF CUSTOMERS, SUPPLIERS, UNIVERSITIES AND OTHER
PARTNERS SO WE CAN KEEP OUR FINGER ON THE PULSE
OF THE INDUSTRY. //**

DR. HEINO BUDDENBERG, MANAGING DIRECTOR

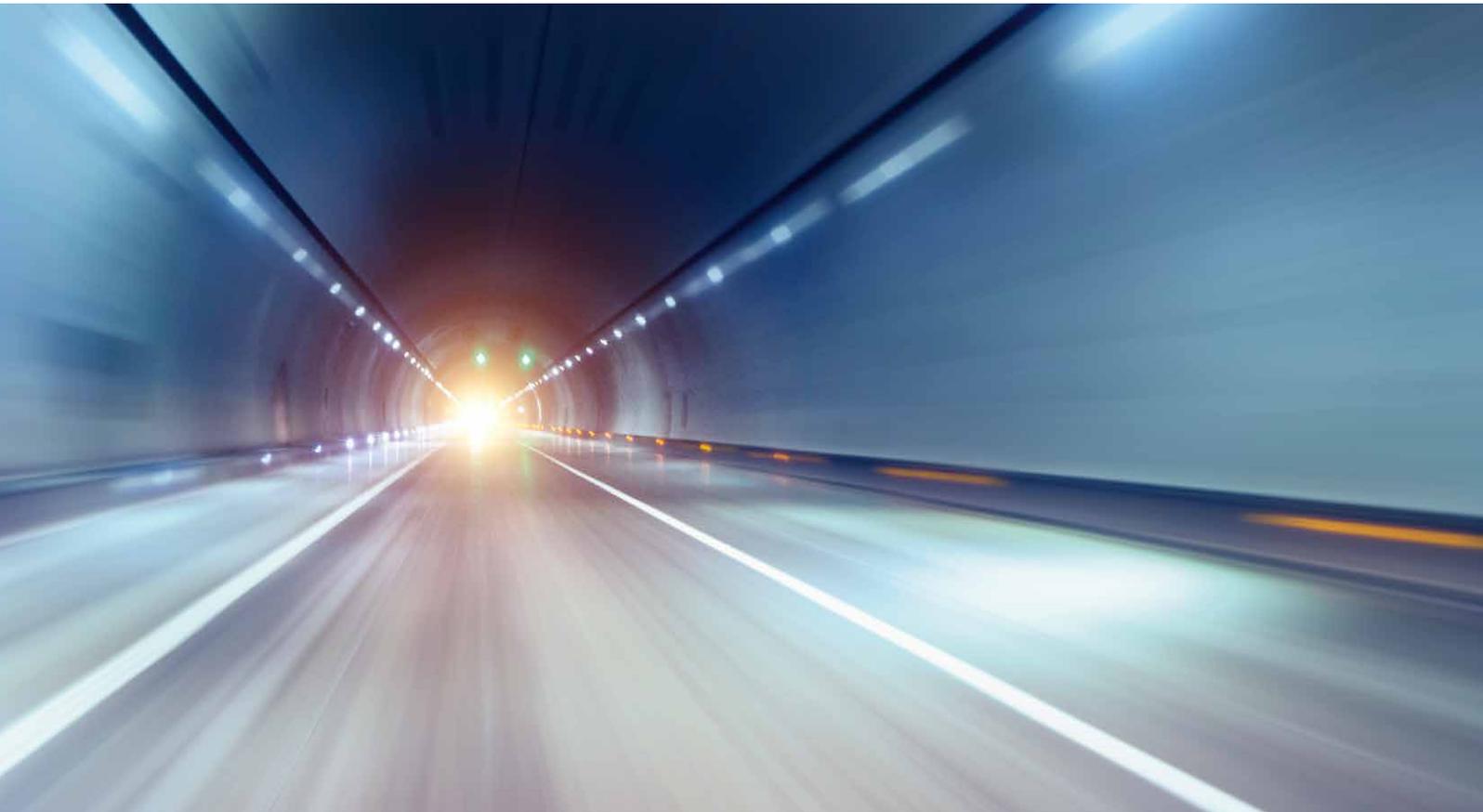
Waelzholz Future

We work tirelessly to identify and solve our customers' unique needs. Our team focuses on identifying trends early to make certain that our product development is always headed in the right direction. By thinking forward and providing our customers with innovative products, we support them to position themselves as industry leaders.



A specific example of this philosophy is our advanced, high-strength grade RAWAEL®, which was developed especially for the automotive sector where it is used for parts such as seat tracks. It combines supreme strength with optimum formability while providing a weight reduction of up to 50 percent compared to the conventional steel grades.

Thus we strive to help our customers develop innovative products, strengthen their position in the market, and even open up new markets. As a technological leader, we're at home in a wide variety of industries ranging from energy generation to automotive manufacturing and other industrial applications.



Waelzholz Expertise

Our materials technology specialists are experts at finding solutions for our customers either by selecting appropriate products from our range of standardized materials or by providing customized products to meet their unique needs.



Martensitic hardened and tempered steel strip for wear-resistant tools



Advanced high strength micro-alloyed grades for lightweight and safe automotive components

In many cases our customers involve us in the early stages of their product development. This type of collaboration results in new and better construction options for our customers. Our engineers constantly hone and develop our technological capabilities and production techniques, so we can develop more effective steel strip products to better meet customers' needs.

For example, our conductive high-speed hardening and tempering line, operating at up to 300 meters per minute, enables us to rapidly heat and cool flat and shaped wire. This produces microstructures and material properties that are of significantly higher quality than those produced with conventional hardening and tempering processes.



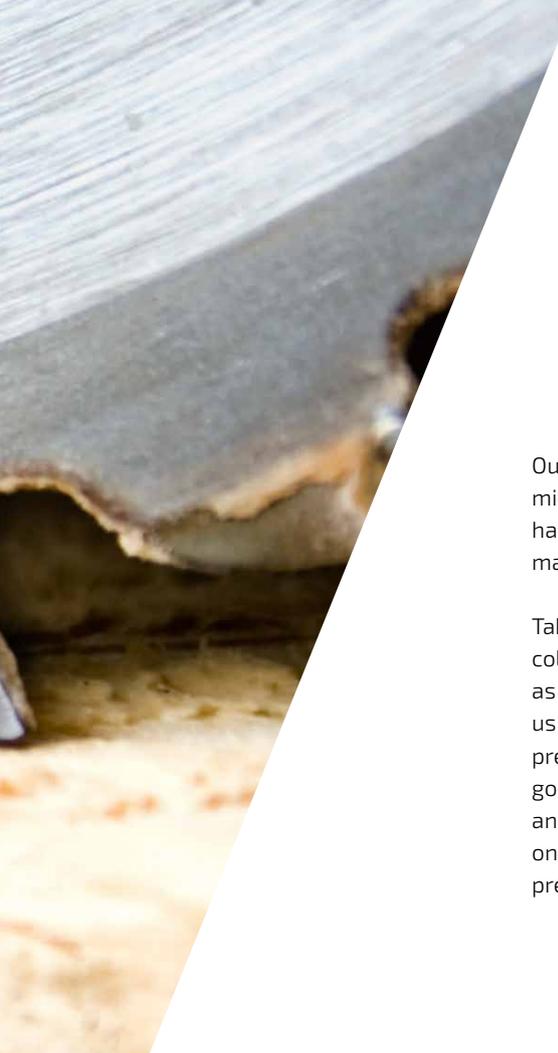
High strength and low-loss electrical steel strip for efficient electric drives

// WHEN WE THINK OF STEEL STRIP, WE IMMEDIATELY THINK ABOUT PROCESSES: THE PROCESSES OF OUR CUSTOMERS, THE PROCESSES OF OUR SUPPLIERS, AND THE PROCESSES AT WAEZHOLZ. //

DR. MICHAEL HELLMANN, MATERIALS TECHNOLOGY



Waelzholz
Reliability



Our spectrum of steel strip ranges from high or low carbon steel to unalloyed, micro-alloyed, and alloyed steel. Regardless of whether we supply cold rolled, hardened and tempered or surfaced coated variations. We meticulously manufacture all of our products in categories with clearly defined characteristics.

Take spring steel, for instance. Our experience in combining chemical composition, cold rolling, and heat treatment means we can achieve precise specifications such as yield strength and the ratio of tensile strength to yield strength. This enables us to produce fine blanking materials for an excellent smooth cut proportion, or pre-tempered steel strips (PT-strips) with yield strengths up to 1,300 MPa for good bendability and high component strength as well as martensitic hardened and tempered steel, which offers a perfect flatness. Our customers can depend on receiving the exact steel strips they ask for order after order, as we are able to precisely and consistently reproduce the products' microstructure.

// THROUGHOUT THE YEAR, MOST OF OUR CUSTOMERS RECEIVE SEVERAL DELIVERIES OF A PARTICULAR STEEL STRIP ITEM. WE ENSURE THAT EVERY SINGLE COIL CONSISTENTLY MEETS SPECIFICATIONS AND IS OF EXACTLY THE SAME HIGH QUALITY. //

DR. MATTHIAS GIERSE, MANAGING DIRECTOR

**// OUR CUSTOMERS COMBINE ELECTRIC STEEL LAMINATIONS
WITH BACKLACK. NO RIVETS. NO WELDING. NO MATERIAL DAMAGE.
JUST UNDISTURBED MAGNETIC FLUX. //**

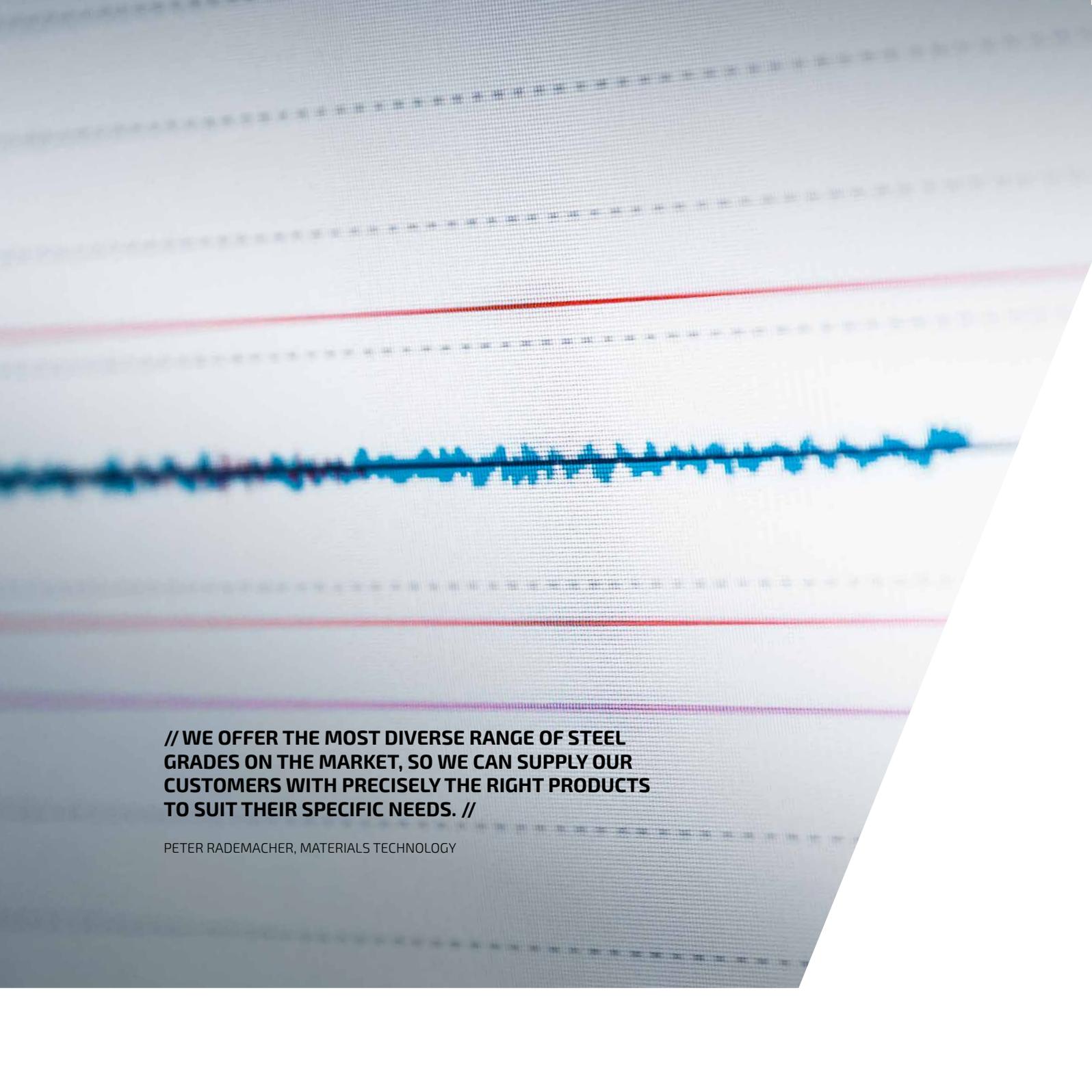
NORBERT BRACHTHÄUSER, MATERIALS TECHNOLOGY

Waelzholz Innovation

From generators and electric motors for industrial applications to electric car engines, wherever there is a need for efficiently produced energy, manufacturers turn to Waelzholz electrical steel strip. Essential performance factors for these kinds of applications include low core losses, high flux density, and permeability.

Our customers frequently face complex challenges as a result of ever-changing demands of evolving technology. We supply many of our customers with tailor-made steel strips and assist them in the development of new products and innovations. One of those challenges, for example, has arisen from the significant stress placed on the rotor teeth of motors by the high rotational speeds of modern electric car engines. To meet the demands of such specialized applications, we have produced electrical steel strip variations with yield strengths of up to 500 MPa.





**// WE OFFER THE MOST DIVERSE RANGE OF STEEL
GRADES ON THE MARKET, SO WE CAN SUPPLY OUR
CUSTOMERS WITH PRECISELY THE RIGHT PRODUCTS
TO SUIT THEIR SPECIFIC NEEDS. //**

PETER RADEMACHER, MATERIALS TECHNOLOGY

Waelzholz Precision

The breadth and depth of our product range is more comprehensive than any other on the market. Our technical capability allows us to produce material with a wide range of characteristics. Our customers have come to rely on our selection of conventional steel grades, which meet a vast number of varied requirements. When highly specialized technical properties are called for, we go one step further, developing tailor-made solutions to meet the specific needs of our customers.

All of our products are manufactured with the utmost precision and our product quality and consistency are second to none. Our customers order materials from us that require very tight

manufacturing tolerances. The integrated control of our cold rolling and heat treatment processes allows us to manufacture extremely flat steel strip surfaces with minimal dimensional deviations. We can achieve thickness tolerances that are below one third of even the most stringent industry standards. This enables our customers to maintain consistently reproducible processing.

Waelzholz Personality

**// WHEREVER A CUSTOMER IS LOCATED:
FOR US, A PERSONAL RELATIONSHIP MEANS MUTUAL
UNDERSTANDING AND APPRECIATION. //**

RAINER DINN, SALES