



**Service & Know-how**  
Metal Industries





With a diverse range of high-quality grinding tools and a service-oriented corporate culture, TYROLIT is a **competent provider of solutions** for customers all over the world.

**Daniel Ehmanns**

Head of Division Metal Industries

Members of the Executive Board – TYROLIT Group

# TYROLIT service & expertise

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# TYROLIT Group

## Providing solutions for your grinding application

TYROLIT is one of the world's leading manufacturers of bonded grinding, cutting, drilling and dressing tools, and machines for the construction industry. The family-owned company, founded in 1919 and a member of the Swarovski Group, is based in Schwaz in the Austrian Tyrol, and currently has over 4,480 employees at 29 production locations in 12 countries. TYROLIT's Metal and Precision, Construction, Stone–Ceramics–Glass and Trade divisions produce around 80,000 different products. These are delivered to customers all over the world by 29 sales companies and distributors in 65 countries.



Around 1,200 employees currently work at the company headquarters of the TYROLIT Group in Schwaz, Austria.

### Quality and innovation

The TYROLIT Group is one of the world's market leaders in the abrasives industry. For us, maximum precision at every step is paramount – both in the quality of the manufactured products and where innovation is concerned. The continuous further development and improvement of our products in all business units is a primary corporate objective.

### Customised products

TYROLIT has a huge and varied product range for numerous fields of application. These include both standard products for everyday use and individually adapted, customised products for customer-specific processes. Together with our customers, we find the most cost-effective solution for the task with which we are entrusted.

### Expertise for our customers

We therefore strive to offer our customers a first-class service in the form of advice and ongoing support at all times. To achieve this, in each of our company's numerous business units a team of experts with many years of experience in the industry is at your side wherever you are in the world – providing tailor-made and individual local advice.

# A global company Business units at a glance



## Metal and Precision

From precision machining in the engine and transmission industry to the production of cut-off wheels with diameters up to 2,000 mm for the steel industry – the TYROLIT product range in the Metal and Precision business unit includes high-tech tools for a wide variety of applications. In addition, we offer complete made-to-measure solutions.

## Trade

Thanks to its global sales network, in addition to premium product solutions in the three core areas of cutting, grinding and surface treatment, TYROLIT's Trade business unit guarantees truly customer-focused marketing support. Continuous, pioneering innovations make a decisive contribution to the success of our customers around the globe.

## Construction

In the Construction business unit, TYROLIT is a leading system supplier of drilling systems, wall and wire saws, floor saws and tools for the surface grinding of concrete motorways. In addition, TYROLIT offers customised machine tool combinations for special projects on request. This means that our customers always obtain the ideal solution for working with concrete.

## Stone – Ceramics – Glass

Our tailored diamond tools and grinding solutions in the Stone – Ceramics – Glass business unit impress with their exceptional performance and quality. For the most exacting customer requirements in numerous industries, TYROLIT offers innovative products for cutting, calibrating, polishing and trueing natural and artificial stone, and ceramic and glass materials.

METAL INDUSTRIES

# Global presence In your vicinity

## Global focus

TYROLIT believes in thinking and acting globally. With a worldwide sales network currently in 65 countries and with production plants in 12 countries on five continents, we offer our customers all the advantages of a globally active company.



## Local availability

Think globally, act locally – in your national language and directly in your vicinity. This is the principle we follow in dealing with our customers. Local contacts and technical distribution in numerous countries guarantee you optimum customer support at all times.



## Customer-focused sales structure

To ensure complete market coverage, we have established a dual sales structure. Our local sales team looks after customers in two different sales channels – industry-specific direct sales and indirect sales through local trading partners.

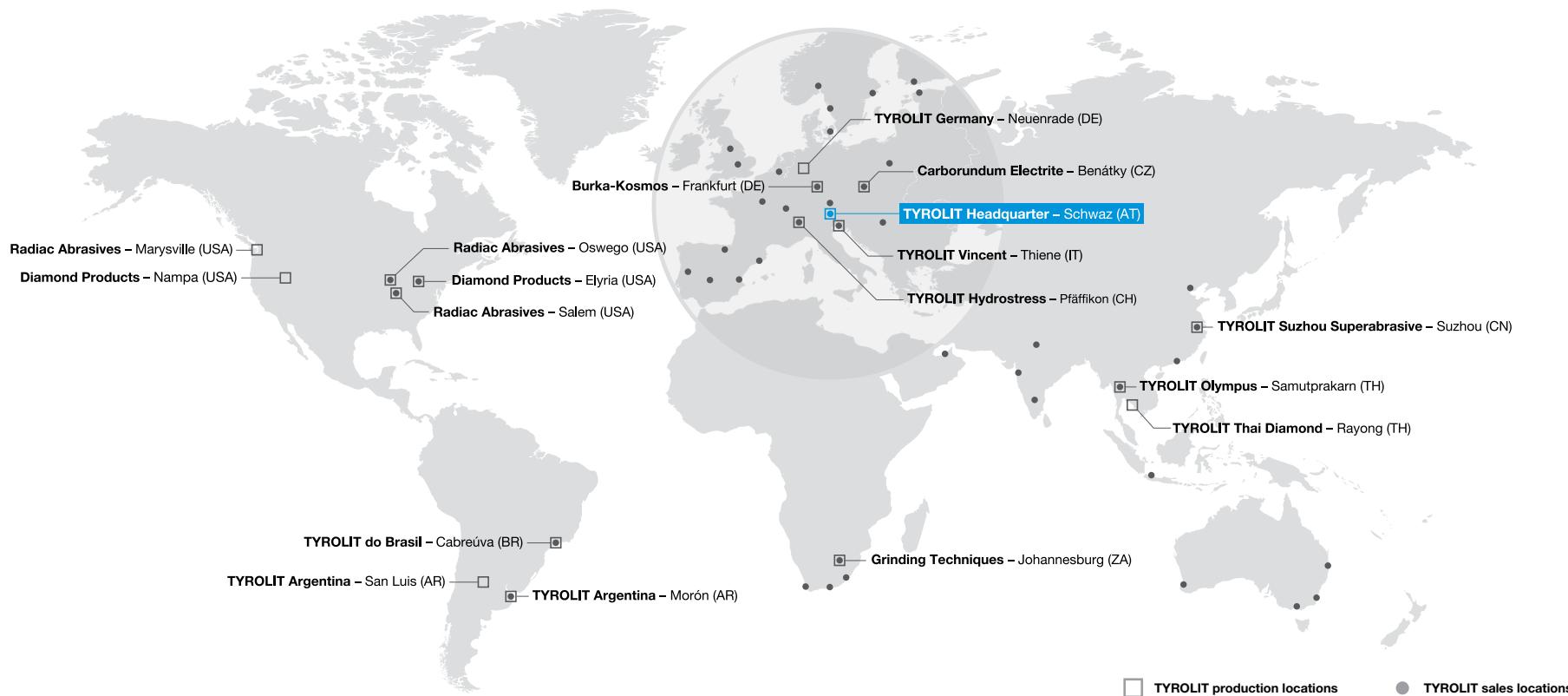
### Sales channels at TYROLIT

#### Direct sales

- Standard range in numerous specifications
- Individual products for very demanding applications

#### Indirect sales

- Standard range in three quality lines, for all common materials and applications



## TYROLIT Metal Industries sales companies

Argentina   Buenos Aires, AR
Belgium   Brussels, BE
Brazil   Sao Paulo, BR
Central & Eastern Europe   Benátky, CZ
China   Hong Kong, CN
Denmark   Glostrup, DK

Germany   Maisach, DE
Estonia   Peetri, EE
Finland   Helsinki, FI
France   Sarreguemines, FR
Great Britain   Crick, UK
India   Bangalore, IN

Italy   Thiene, IT
Canada   Mississauga (ON), CA
Middle East   Dubai, AE
Netherlands   Zaandam, NL
Norway   Oslo, NO
Austria   Schwaz, AT

Poland   Warsaw, PL
Portugal   Santo Tirso, PT
Sweden   Täby, SE
Switzerland   Eptingen, CH
Spain   Barcelona, ES
South Africa   Johannesburg, ZA

Thailand   Bangkok, TH
Hungary   Budapest, HU
USA   Oswego (IL), US
USA   Elyria (OH), US

## Committed to research **Pioneering spirit of a technology leader**

At TYROLIT, more than 100 employees work in Research & Development and ensure that all products are the perfect answer to customer requirements. We endeavour to be at the forefront of progress and to live up to our role as pioneers in the abrasives manufacturers' market. For this reason, for years we have forged close links with renowned colleges and universities, such as the Machine Tool Laboratory of the RWTH Aachen University, and the Institute of Production Technology and Laser Technology at the Vienna University of Technology, for example.

### Samples put to the test

In the TYROLIT test centre, made-to-measure developments for customer-specific requirements undergo exhaustive tests during operation. All major grinding and cutting applications are tested on our own test grinding machines in one of a total of three test centres. In this way, new machining processes can be developed for customers, and existing grinding methods can be dramatically improved.

### Cooperation with machine manufacturers

Comprehensive machine expertise is a fundamental prerequisite for developing individual grinding solutions. As a leading abrasives producer, for many years we have maintained close relationships with numerous machine manufacturers in the market. As a result, we can offer our customers a perfectly coordinated process, in which machine and tool work in harmony.

### Comprehensive expertise

At TYROLIT, ground-breaking technological performance has always been in the foreground – and not just since the development of the super-thin cut-off wheel for off-hand cutting. By continuously expanding our existing expertise and understanding everything about combining and harmonising innovative materials and processes, we can permanently keep our product range at the very top technical level.

## Latest TYROLIT product innovations



**2014 Comfort Start edges** – Innovative product feature for considerably enhanced working comfort for off-hand grinding.



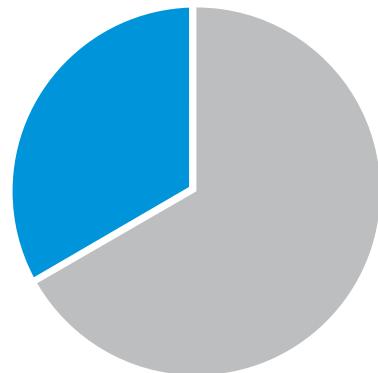
**2015 SKYTEC XD-1** – High-performance grinding tools with an especially high diamond concentration for machining PCD and PCBN.



**2015 GENIS 2** – Customised CBN grinding tools for ideal, cost-effective grinding solutions.



**2016 Cerabond 1.0 mm** – Super-thin cut-off wheel with a unique performance level for off-hand cutting.

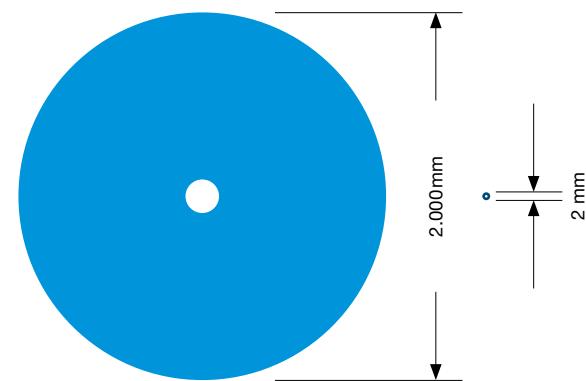


**30** % of annual turnover is achieved with products that are on the market for less than 3 years.



**4,000** times larger – the difference between our largest and smallest abrasive grains.

Ø 0,001 mm



**1,000** times larger – the diameter of our SECUR cut-off wheel for applications in the steel industry is this much bigger than our smallest products, which are used in medical technology.

## 100% focus on customers Smooth processes from A to Z

Thanks to our perfectly coordinated supply chain, which extends from in-house machining and order processing to production and all the way to delivery, we can always guarantee our customers maximum faithfulness to deadlines.



### Global logistics

Our 16 warehouses all around the world ensure the best possible product availability for customers at all times, 365 days a year. Our ultra-modern central warehouse in the Czech Republic was opened in 2015. In future, this will be the central hub for our logistics in Europe, enabling us to respond to customers' wishes even faster, more efficiently and with a more personalised service.

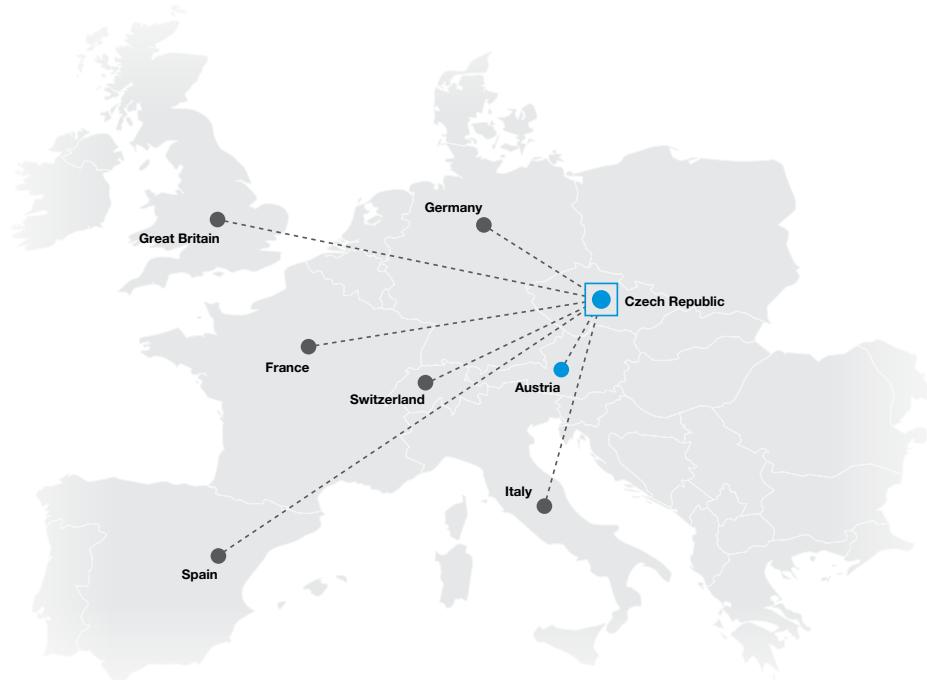
### Central Planning & Customer Service

Coupled with our team of specialist customer service employees, the use of modern planning systems with forecasting methods specially designed for individual sales areas and product ranges ensures the rapid, smooth and perfectly coordinated processing of all orders.

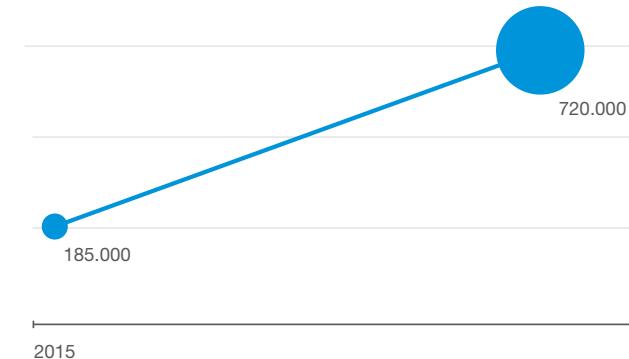
### Key account management

At TYROLIT, key account customers receive individual and personal support from their own account managers. Central contracts are at hand at all times to answer questions, coordinate local sales processes and accompany transfer projects for globally active customers.

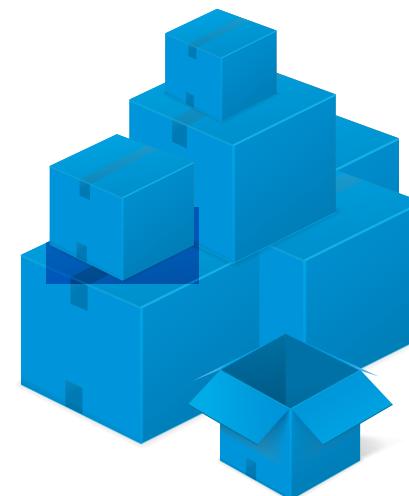


**TYROLIT warehouses in Europe****Other warehouses**

- |           |              |
|-----------|--------------|
| Argentina | India        |
| Brazil    | South Africa |
| China     | Thailand     |
| Dubai     | USA          |



**720,000** delivery items a year can be sent from our new central warehouse in Běnátky (Czech Republic) in future. (currently: 185,000)



**4,000,000**

consignments leave the  
warehouses of the TYROLIT  
Group every year.

A high-precision metalworking machine in operation. A bright red workpiece is being machined by a precision tool, creating a shower of small metal shavings. The machine's components are made of dark, polished metal, reflecting the bright light from the cutting area.

# Business unit Metal and Precision

# Business unit at a glance

## Metal and Precision

In direct sales at the Metal and Precision business unit, customers cannot fail to be impressed by our numerous high-tech grinding tools combined with high system expertise in all key industries. Coupled with our global application technology, this enables us to always offer our customers financially attractive grinding solutions for countless applications.

### Precision Industry

The Precision Industry business unit creates ideally coordinated machine tool combinations for demanding applications. Close cooperation between Research, Product Development and Application Technology enables ultimate precision in the machining of complex components.

#### Key industries

- Automotive industry
- Transmission industry
- Bearing industry
- Turbine industry
- Tool manufacturing industry
- Special industries

### Metal Fabrication

In the Metal Fabrication business unit, we answer to the needs of our customers in the steel and foundry industry with a tailor-made product range. As a pioneer in the production of large cut-off wheels with diameters up to 2,000 mm, we possess years of application expertise in these industries.

#### Key industries

- Plant construction
- Foundry industry
- Steel industry

### Focus on target groups

From our team of marketing managers with many years of experience in specific industries, Precision Industry and Metal Fabrication customers can always expect a perfectly tailored package consisting of a grinding solution and attractive services.

## Products that are a delight **Maximum quality standards**

We are one of the world's leading manufacturers of grinding tools for cutting and grinding a huge and diverse range of standard and special applications. All TYROLIT products are manufactured and tested in our own factories to the highest standards. In addition, our specialised expert teams ensure the continuous further development of products, under consideration of individual customer needs.



### **Conventional abrasives (A + C)**

We offer our customers a comprehensive range of conventional grinding wheels based on corundum and silicon carbide. Conventional grinding wheels are predominantly employed in the mechanical industry for precise, especially cost-efficient production. These products are ideal for use in numerous standard applications.



### **Superabrasives (D + B) for special applications**

Extremely hard abrasives – known as superabrasives – are primarily used for machining ultra-hard materials. We boast a wide range of tailor-made CBN and diamond tools based on different bond systems (metal, resin, ceramics). These products are especially suitable for the cost-effective machining of materials that are difficult to cut.

## Industries & grinding processes

	Surface grinding, creep feed grinding	Side grinding, double disk grinding	External cylindrical	Centreless grinding	Internal cylindrical	Involute grinding	Honing, finishing	Decoating, deburring, polishing	Contour grinding	Dressing	Fettling, high-pressure grinding	Stationary cut-off grinding	Off-hand grinding & cutting
<b>Steel &amp; nonferrous metal manufacturers</b>										Grinding tools	Billets, slabs	Semi-finished products	Semi-finished products
<b>Foundry industry</b>			Rollers					Cast parts		Grinding tools	Cast parts	Cast parts	Cast parts
<b>Steel and plant construction</b>				Precision tubes				Semi-finished products	Rails			Rails	Semi-finished products, rails
<b>Automotive industry</b> Valve & piston systems	Piston rings, CV joints	Piston rings, valves	Valves, piston pins, CV joints	Valves, pistons	Hydr. compensating elements, CV joints	Hubs	Cylinder liners			Grinding tools		Valves, piston rings	
<b>Automotive industry</b> Engine shafts		Con-rods, engine blocks	Crankshafts, camshafts	Tubes	Cams		Crankshafts			Grinding tools			
<b>Automotive industry</b> Injection systems			Pumps, turbo charger, needles	Injection parts	Injection parts					Grinding tools			
<b>Turbine industry</b>	Nozzle guide vanes, turbine blades		Nozzle guide vane rings, casing		Casing			Turbine components		Grinding tools		Turbine components	Turbine components
<b>Bearing industry</b>	Linear guides	Inner rings, outer rings, rolls	Inner rings, outer rings	Outer rings, rolls, needles	Inner rings, outer rings			Inner rings, outer rings, rolls, needles		Drills, milling cutters	Grinding tools		Linear guides
<b>Tooling industry</b>	Thread rolling dies		Peel grinding, taps	Tungsten carbide/ HSS blanks				Drill bits, milling cutters	Drill bits, milling cutters, saws, taps, cutting inserts	Drill bits, milling cutters	Grinding tools	Tungsten carbide/ HSS blanks	
<b>Gear industry</b>		Drive shafts		Drive shafts, gear shafts	Gears, gear shafts		Gears			Grinding and honing tools			
<b>Special industries</b>	Skis and snowboards	Technical ceramics, wafers, blades	Technical ceramics, paper rolls and en- graved printing rolls	Hydraulic cylinders and pistons, razor blades			Hip and knee joints	Insulation glass	Hypodermic needles	Grinding tools		Ceramic and porcelain components, isolators	

● Conventional abrasive (A+C)

● Superabrasives (D+B)

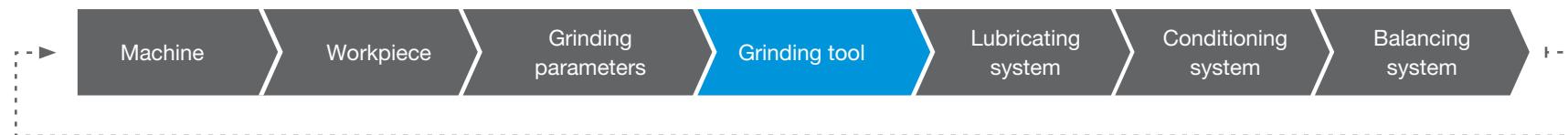
## TYROLIT application technology The best solution for your processes

Grinding expertise – this has characterised TYROLIT for nearly one hundred years. A particularly noteworthy benefit is our experienced team of specialist application engineers who, year in, year out, devise and implement sustainable solutions for customers all over the world.

All employees in the various countries have excellent links to our headquarters in Austria, where they obtain thorough support on all technical issues.



### TYROLIT application technology in practice

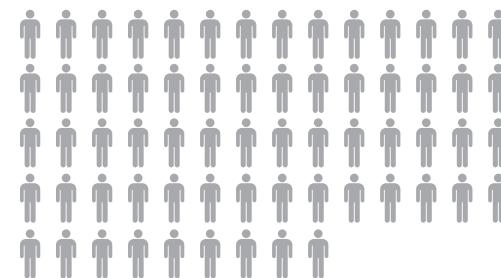


Argentina  
Brazil  
China  
Germany  
France  
Great Britain  
India  
Italy  
Mexico  
Austria  
Switzerland  
South Africa  
Czech Republic  
USA

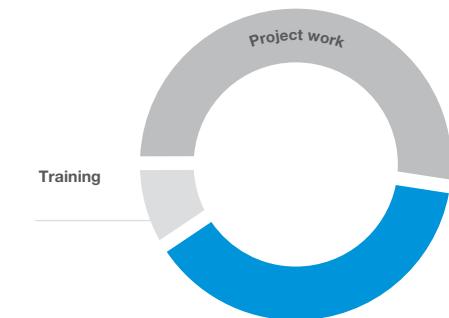
**14** sites with local contacts and a global pool of engineers at our headquarters guarantee our customers seamless technical support.



**1.4** times around the world – or around 31,000 miles – is the distance a TYROLIT application engineer covers a year on average.



**65** application technology employees around the world are working to provide solutions to ongoing customer requirements.



**38** % of a TYROLIT application engineer's time, on average, is spent with the customer.

## Quality management at TYROLIT Processes at the highest level

The endeavour to achieve the highest quality at every step is a vital guiding principle throughout the TYROLIT Group. From the selection of raw materials to the manufacture of products, right through to final inspection – all processes are subject to stringent quality assurance. The company has been ISO 9001 certified since 1994.

### Safety standards

As a manufacturer of high-quality products, guaranteeing the maximum possible safety while using our tools is especially important to us. As a founding member of the German “Organization for the Safety of Abrasives (oSa)”, we are highly involved in the development of industry-wide standards.

### Working and operating safety

For employees at our production locations, we exceed the applicable statutory requirements for occupational health and safety, and guarantee this high standard by means of ongoing work assessments and staff training.



# Focus on the customer Solutions for measurable success

## Individual process consulting

With Innovative Performance Consulting (IPC), TYROLIT offers its customers tailor-made consulting services. In close consultation with customers, work processes are analysed and joint project targets are defined.

Based on this set objective, an individual project team of experienced TYROLIT specialists and customer representatives is formed. Seamless project documentation and a final performance test enable the resulting savings to be evaluated directly on the customer's premises.

## IPC benefits

- Optimised productivity
- Optimised costs
- Individual service
- Transparency

IPC demonstrably optimises part-based production costs for customers.



## The IPC process at a glance



A close-up, low-angle shot of a worker's hands and arms as they use a power tool to cut through a metal frame. The worker is wearing blue jeans and a blue long-sleeved shirt. A blue glove on their right hand holds a circular saw blade. Sparks are flying from the cutting point. The metal frame has several circular holes. The background is dark.

# Business unit Trade

# Business unit at a glance

## Trade

In the Trade business unit, our indirect sales channels provide professional users around the globe with TYROLIT products. Several hundred sales force staff and application engineers around the world work with our trading partners on their premises, providing them with expert and competent advice on a daily basis.

### Comprehensive product range

In the Trade business unit, we offer an extensive standard range specially for the requirements of professional end users – in three quality lines, optimised for different materials. All products can be seen in our tools catalogue and are available all over the world.

### Focus on target groups

Professional end users from different fields of industry have special requirements for products in their everyday use. To facilitate the sale of TYROLIT trade products for our sales partners, we offer product ranges with optimised features for different target groups.

### Sales support

To ensure joint success with our trading partners, the global TYROLIT sales and marketing team is at their side all year round to provide support with a broad range of customer-specific activities. Measures are discussed at annual planning meetings, then put into action.

#### Specialist retail product ranges

- Cutting
- Grinding
- Brushes
- Precision grinding
- Coated abrasives
- Diamond tools

#### Specialist retail target groups

- Construction
- Ironmongery
- Industry
- Automotive components
- Precision industry
- Sanitary technology
- Welding technology

#### Services for specialist retail

- Campaigns
- Catalogue
- Trade fairs & events
- POS equipment
- Training courses
- Sales support

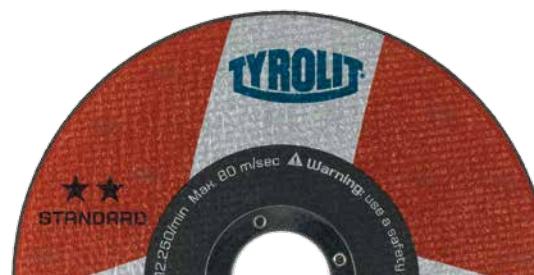
## Trade products for professionals Three quality lines for optimum results

In the Trade business unit, as a complete supplier we offer an extensive range in three quality lines, to satisfy the requirements of professional end users to the best of our abilities. This reflects our many years of expertise in the production of professional grinding tools for numerous applications.



### PREMIUM ★★

The product line for professionals impresses with uncompromisingly high quality and new, innovative technologies. All products from the PREMIUM \*\*\* range guarantee maximum cutting ability, outstanding results and above-average lifetimes for every application.



### STANDARD ★★

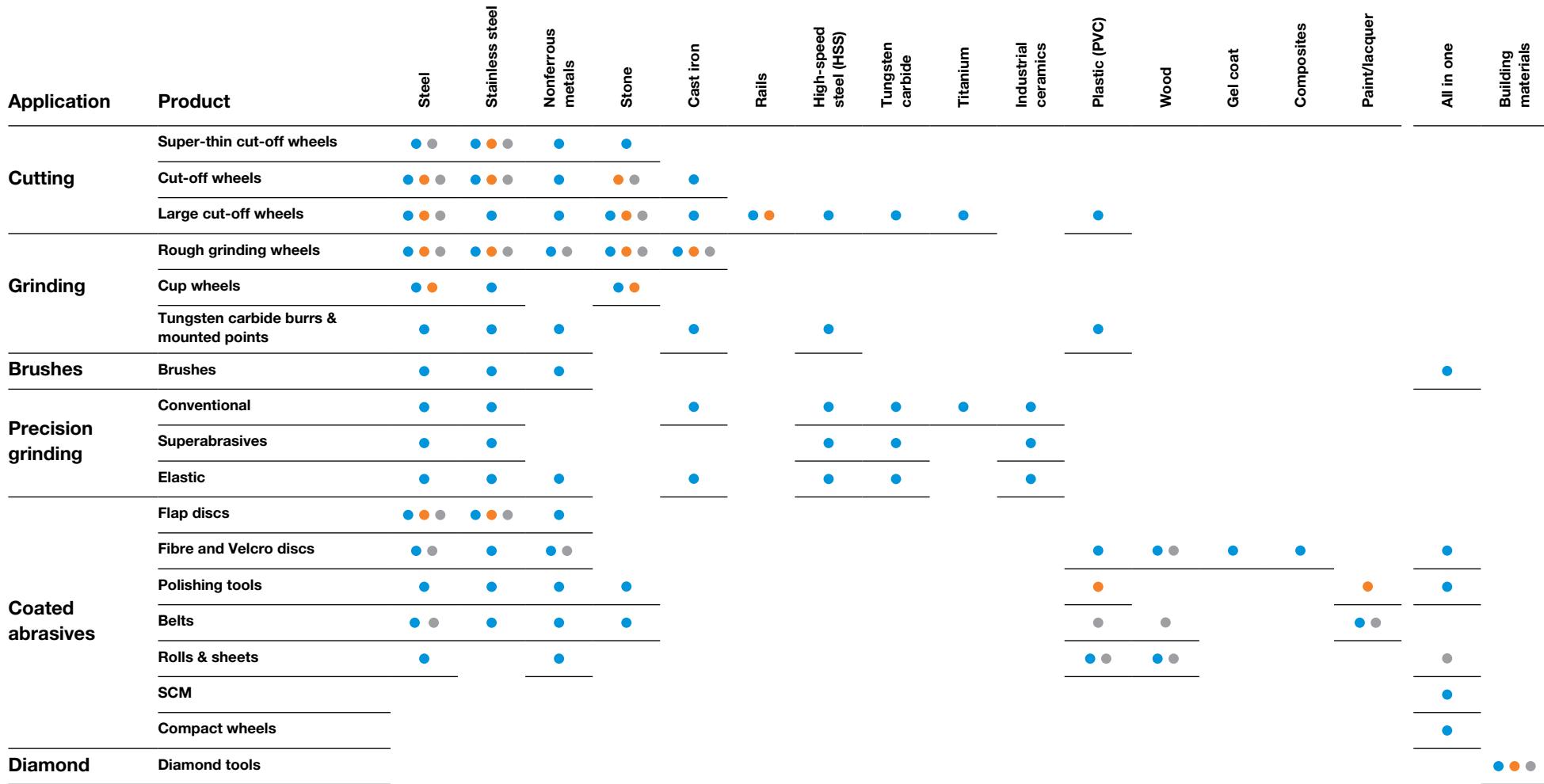
Products from our STANDARD \*\* range combine the technological achievements of decades of research with an especially attractive price-performance ratio. They also impress with their high cutting ability and long lifetimes.



### BASIC ★

Developed for universal applications in everyday use, products from our BASIC \* range boast impressive machining quality at a high level. At the same time, they represent the entry level into the world of professional abrasives from TYROLIT.

## Industries & grinding processes



● Premium    ● Standard    ● Basic

## Successful together The TYROLIT Premium Partner scheme

In order to ensure sustained growth in the market, a jointly defined and clearly communicated strategy is essential. When selecting our Premium Partners in each market, we pay particular attention to high-end positioning, professionalism and shared values. For only in this way can we achieve lasting success together.

### Focus on Premium Partners

- Strengthening the value of the TYROLIT brand through the targeted sale of our Premium products
- The focus is on product performance and quality, not price
- Only select retailers can become Premium Partners

- Attractive purchasing conditions and bonus systems ensure greater success
- Proactive marketing and sales support for all Premium Partners by the TYROLIT marketing team



## Marketing support Professional planning with TYROLIT

We are at our Premium Partners' side in the markets, offering numerous sales and marketing activities all year round. The annual marketing plan we develop sets out all the major activities and campaigns with which we actively support trading partners. Rounding off these services are tandem visits to end users and product training courses in specialist retail.

### Tools catalogue

This extensive reference work in 16 languages contains the complete trade range in the categories Cutting, Grinding, Brushes, Precision Grinding and Coated Abrasives for numerous applications.



### Marketing support

Our central and local marketing teams assist you with activities at the POS, sales promotion measures and the organisation of in-house exhibitions. What's more, you receive many publications in your national language, as well as in-store materials and product demonstrations.

### TYROLIT ACADEMY

With our TYROLIT ACADEMY, we offer a tailor-made training scheme for retailers, providing in-depth knowledge of industrial abrasives. This builds a strong foundation for permanently improved sales figures and profitability.

## TYROLIT the top-class act Know-how, learning, teaching

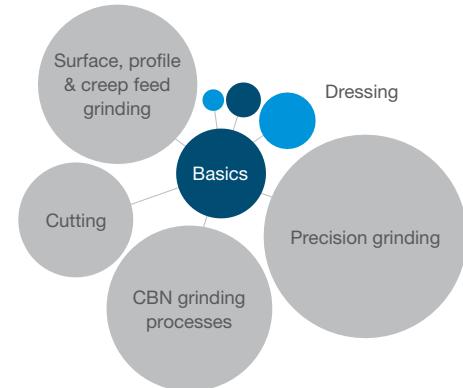
### Basics and special seminars

In addition to regular seminars on the basics, we also offer numerous special further training seminars. These are individually tailored to our customers' needs. From selecting the right grinding wheel specification to application preparation, balancing and conditioning, then to the influence of individual grinding parameters and lubricant adjustments, these courses cover all key areas, enabling grinding processes to be optimised step by step.

Seminars can be held either at our company or on customers' premises.

### Specialists from all fields

Through intensive cooperation with our experts from the fields of research and development, application technology and TYROLIT's in-house test bay, as we put together and conduct our seminars and training courses, all topics are prepared and presented on a solid knowledge base.



**300** different subjects are covered by the annual further training programme available to customers.



## New findings from the field

A key element of training courses at TYROLIT is the demonstration of factors influencing technical grinding in the field. These are performed in Schwaz on our own test grinding machines.

Freed from the restraints of their own production environment, course participants have the opportunity to influence machine settings and so discover all the potential for optimisation. They do this under the guidance of experienced test engineers.

## Up-to-date presentation

All training documents are continually updated and are attractively presented. The interactive presentation method is assisted by animations and short videos, providing participants with the best possible means of understanding the complex subject of grinding.

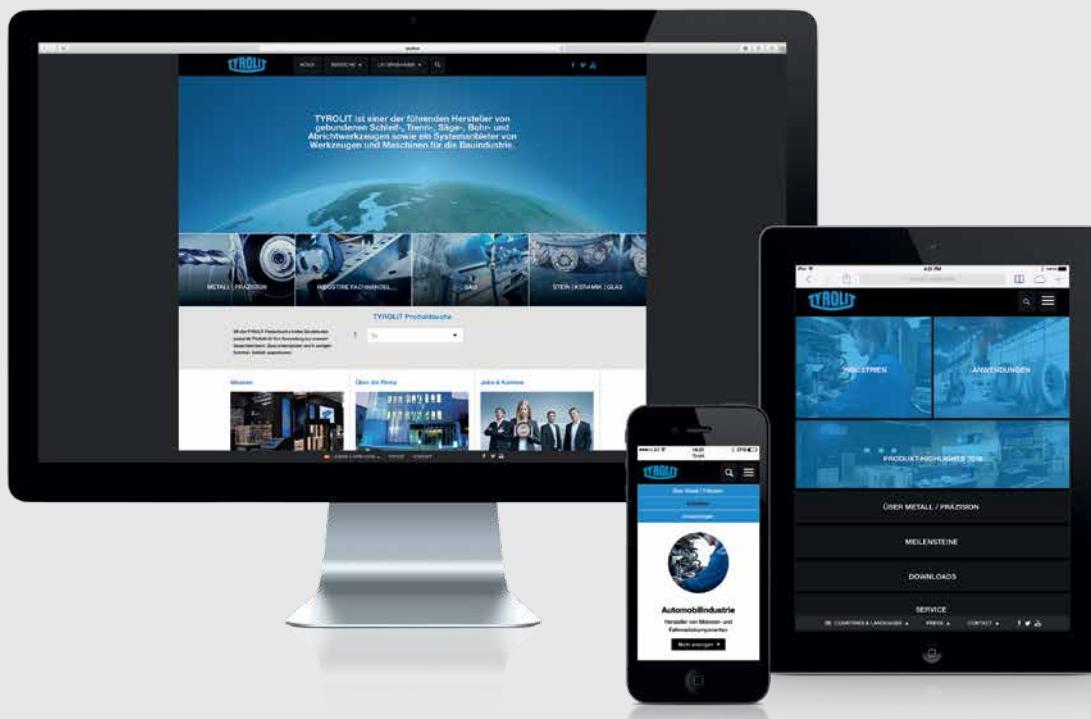
All presentation documents are available in a choice of English or German.

## e-learning tool

With the new e-learning tool from Metal Industries, customers have the opportunity to acquire detailed knowledge of the basics on TYROLIT products and the company online in a simple and uncomplicated way.

Furthermore, they then have the chance to test the knowledge they have obtained in various categories, and have it certified in a final test.

## TYROLIT online services Available to you around the clock



### Company website

Information on the TYROLIT Group and extensive insights into the available product range and individual business units is available in numerous languages on the TYROLIT website at [www.tyrolit.com](http://www.tyrolit.com).

### TYROLIT Web Shop

At the TYROLIT Web Shop, customers can find and order their specific products 24/7. The entire standard range, complete with information on stock availability and shipping methods, is available online.

### EDI (Electronic Data Interchange)

With EDI, we offer our customers an easy way of connecting local IT systems to TYROLIT's SAP system. This enables the direct exchange of orders, order confirmations and invoices, considerably simplifying the buying process.

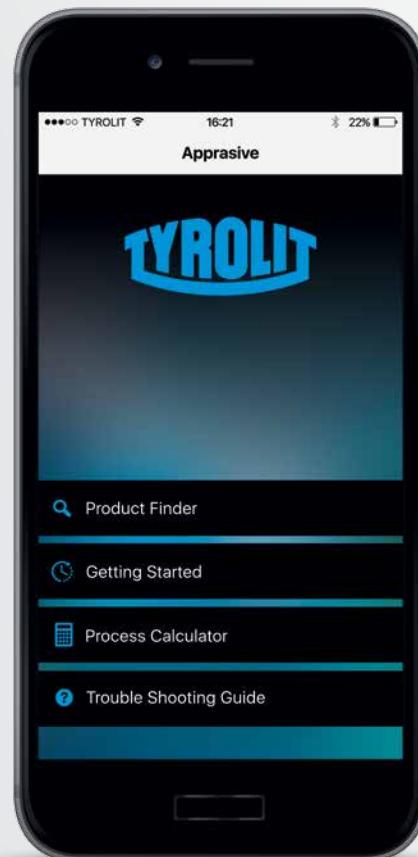


## TYROLIT Apprasive® for mobile terminal devices

The Apprasive app is compatible with iOS, Android and Blackberry operating systems and is available as a free download on the TYROLIT website and at the appropriate app stores.

# 4.750

people a month since 2012 have used the TYROLIT Apprasive app for mobile terminal devices.



### Product Finder

The Product Finder gives you an overview of our catalogue items. Thanks to its simple navigation, you are sure to find the right tool for your application quickly at any time.



### Getting Started

The Getting Started feature supplies valuable information on the preparation, assembly and start-up of TYROLIT tools, and also offers comprehensive safety instructions for handling these products.



### Process Calculator

The Process Calculator offers extensive interactive calculation for determining a huge variety of process-relevant grinding parameters. Formulas, standard values and detailed explanations make it easy to use in your everyday work.



### Trouble Shooting Guide

The Trouble Shooting Guide helps you to rapidly resolve problems, and offers tips for working with TYROLIT tools.

# Sustainably green Production in harmony with nature

## Sustainable production

As a company, TYROLIT promotes high environmental awareness. We insist on sustainable production, advanced manufacturing technologies and the responsible use of resources. For us, environmental protection is not a restriction, but rather an opportunity that spurs us on to continuous further development.

## Certifications and awards

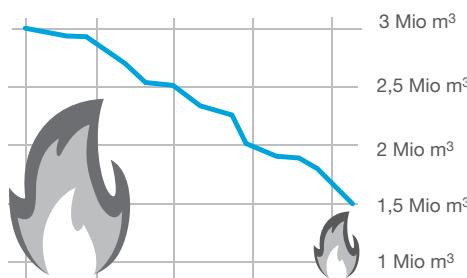
- **1996:** Certified to ISO 14001
- **2006:** Certified as a sustainable company (by the Tyrol Regional Council and the Tyrol Chamber of Commerce)
- **2008:** SKF Sustainability Award
- **2010:** Member of respACT (company platform for CSR and sustainable development)





**881,000 kWh**

is produced annually by the moving solar panels of TYROLIT's solar system.

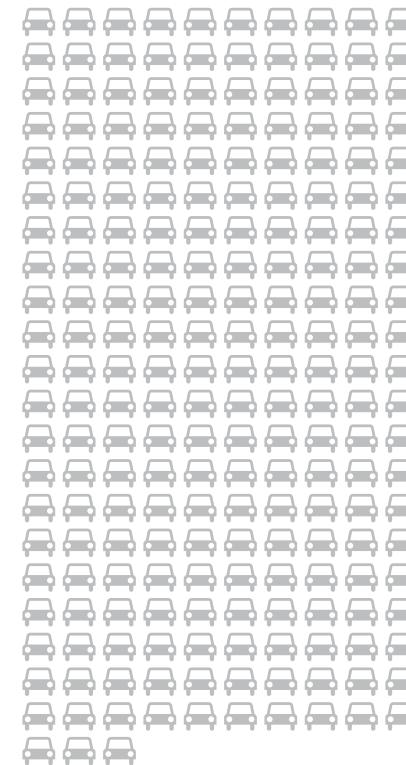


**50** % less gas is consumed by TYROLIT every year thanks to the use of regenerative post combustion.



**5.500.000 €**

was invested in the two major projects – regenerative post combustion and solar system (3,000 m<sup>2</sup>) – alone.



**2,130** mid-range cars produce the same quantity of CO<sub>2</sub> each year that TYROLIT saves through post combustion and solar energy.

**TYROLIT SCHLEIFMITTELWERKE SWAROVSKI K.G.**

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