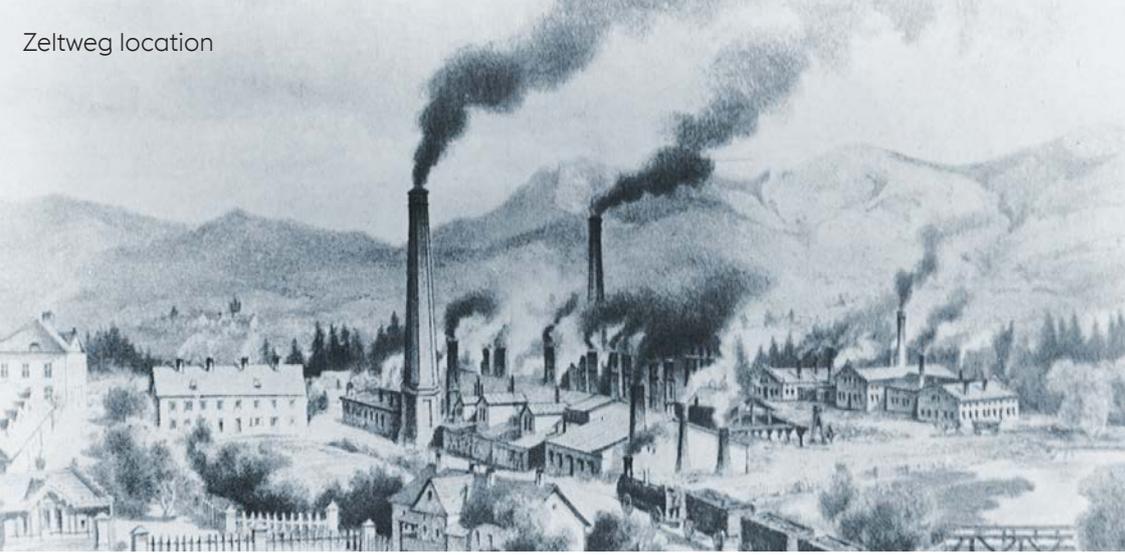


# MANAGEMENT MANUAL

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Quality. Environment. Work safety.  
Health. RAMS.

Zeltweg location



Donawitz location



## EXPERTISE FOR MORE THAN 160 YEARS

voestalpine Railway Systems, along with its subsidiaries and associated companies have been supplying rail transport companies, with their products for more than 160 years. Of the list of requirements these companies have for the products they buy, which has the most importance? Clearly, safety is first and foremost.

Safety is crucial for the operation of railroads; accidents can cause tremendous damage to life and transported goods as well as to the environment, especially at the ever increasing speeds of passenger and freight traffic. In this context, it is imperative to establish a functioning quality management system that strives for continuous improvement.

## THE STRUCTURE OF voestalpine Railway Systems

voestalpine Railway Systems is the corporate headquarters that advises its customers and acquires orders for rails, turnout systems and turnout components, as well as electronic safety and monitoring systems and hydraulic drives and services. The development and creation of design drawings for these

orders is carried out at the company headquarters or coordinated by headquarters. Production takes place at the approximately 50 production sites of the subsidiaries and associated companies worldwide.

# CERTIFICATION OF voestalpine Railway Systems

Rails, turnouts, sleepers, fastening systems, track components as well as electronic monitoring and safety systems have been developed, designed and manufactured in accordance with particularly stringent quality requirements. Our service portfolio likewise meets the highest standards for quality, functionality and safety.

To ensure the safe and reliable functioning of the products and services of voestalpine Railway Systems, our goal is to achieve the same level of quality in all voestalpine Railway Systems companies and orient ourselves towards optimized processes in accordance with ISO 9001.

voestalpine Railway Systems has a certified quality management system in accordance with ISO 9001:2015, which incorporates decades of experience from the series of earlier certification/system levels (ISO 9001:2000, ISO 9001:1994), each of which was implemented in a pioneering role.

voestalpine Railway Systems has always been committed to environmental protection and occupational safety. It is therefore a logical consequence that the parent company of the voestalpine Railway Systems group also became certified to ISO 14001, ISO 45001, ISO 50001 and the EMAS Regulation. voestalpine Railway Systems emphasizes the leading function within the voestalpine Railway Systems group in environmental and occupational safety matters as well. By issuing group guidelines, voestalpine Railway Systems actively promotes employee and environmental protection beyond the site boundaries.

**Lloyd's Register**

Current issue date: 23 November 2020  
Issue date: 23 November 2020  
Certificate validity number: 1030979

Original appointment: ISO 9001:18 November 2007  
ISO 45001:18 February 2019  
ISO 50001:18 November 2018  
ISO 14001:18 August 2017

## Certificate of Approval

This is to certify that the Management System of:  
**voestalpine Railway Systems GmbH**  
Kempelstraße 199, 8700 Leoben, Austria

has been approved by Lloyd's Register to the following standards:  
**ISO 14001:2015, ISO 45001:2018, ISO 50001:2018, ISO 9001:2015**

Approval number(s): ISO 14001 – 0018687, ISO 45001 – 0026637, ISO 50001 – 0018686, ISO 9001 – 0018684

This certificate is valid only in association with the certificate schedule bearing the same number on which the locations applicable to this approval are listed.

The scope of this approval is applicable to:  
ISO 14001:2015, ISO 45001:2018, ISO 50001:2018, ISO 9001:2015  
Research, design and sales of railway systems, especially including rails, turnout systems, turnout installations, turnout components, rail expansion joints, fastening systems, sleepers/sleepers as well as associated drive and setting devices, signaling, detection and safety-related systems for infrastructure and rolling stock including related surveying, servicing, logistics and training. Information, coordination and controlling of the subsidiaries of voestalpine Railway Systems GmbH concerning health, safety, environmental, energy and quality-related technical, organizational and legal affairs on basis of internal requirements for sustainable development and corporate social responsibility.

*Paul Graß*  
Paul Graß  
Area Operations Manager North Europe  
Issued by: Lloyd's Register EMEA Niederlassung Wien  
for and on behalf of: Lloyd's Register Quality Assurance Limited

Lloyd's Register Group Limited, its affiliates and subsidiaries, including Lloyd's Register Quality Assurance Limited (LRQA), and their respective officers, employees or agents are authorized to carry out the activities described in this certificate only if they are acting in accordance with the terms and conditions of the relevant LRQA Register membership. Any other activities are undertaken by the company or its employees or agents and for that they are responsible in liability to the client and are not covered by this certificate. Issued by: Lloyd's Register EMEA Niederlassung Wien, Operating: ISO 9001-2015, ISO 14001, ISO 45001, Austria for and on behalf of: Lloyd's Register Quality Assurance Limited, 1 Trinity Park, Borehamwood, Hertfordshire SG8 2BS, United Kingdom. Page 1 of 2

**Lloyd's Register**

## ENVIRONMENTAL VERIFIER'S DECLARATION ON VERIFICATION AND VALIDATION ACTIVITIES

Lloyd's Register Quality Assurance Ltd., with EMAS environmental verifier registration number AT-V-0022 and accredited for the scope:

**Research, design, manufacture, sales and servicing of railway systems, especially including turnout systems, turnout installations, turnout components, rail expansion joints, fastening systems as well as associated drive and setting devices, signaling, detection and safety-related systems for infrastructure and rolling stock including related surveying, servicing, logistics and training.**  
NACE Code: see appendix

declares to have verified:  
**voestalpine Railway Systems GmbH  
voestalpine Turnout Technology Zeltweg GmbH  
voestalpine Signaling Austria GmbH  
Alpinestraße 1, 8740 Zeltweg  
Austria**

registration number AT-030360  
meets all requirements of Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community Eco-Management and Audit Scheme (EMAS) amended by Commission Regulation (EU) 2013/1955.

By signing this declaration, LRQA declares that:

- the verification and validation has been carried out in full compliance with the requirements of Regulation (EC) No 1221/2009,
- the outcome of the verification and validation confirms that there is no evidence of non-compliance with applicable legal requirements relating to the environment,
- the data and information presented in the Environmental Statement of the organisation reflect a reliable, credible and correct image of all the organisation's activities within the scope mentioned in the environmental statement.

This document is not equivalent to EMAS registration. EMAS registration can only be granted by a Competent Body under Regulation (EC) No 1221/2009. This document shall not be used as a stand-alone piece of public communication.

LRQA Ref No: VN40005048-04 Date of verification: 18 November 2020  
Verification Expiry: 17 November 2023  
Date of validation: 18 November 2020  
Validation Expiry: 17 November 2021

*Di Harald Kretzer*  
Di Harald Kretzer, Lead Verifier  
Lloyd's Register EMEA, Niederlassung Wien  
1010 Wien, Operating: 180741-744, Österreich  
on behalf of: Lloyd's Register Quality Assurance Limited  
Akzessionsnummer: AT-V-0022

Lloyd's Register EMEA Niederlassung Wien, Operating: 180741-744, 1010 Wien, Österreich, FN 238207 Z  
Die Substanzierung gilt zusammen mit der Erklärung als Nachweis über die Verifizierung und Validierung. Sie werden bei der Beantragung auf Antrag für die zuständigen Stellen nach Artikel 3 der Verordnung benötigt. Der Text dieser Erklärung muss vollständig in der Umweltberichterstattung des Verifizierten abgedruckt werden.

# CERTIFICATIONS OF THE PRODUCTION LOCATIONS\*)

## ISO 9001

### Europe

voestalpine Turnout Technology Zeltweg (AT)  
Weichenwerk Wörth (AT)  
voestalpine Signaling Austria (AT)  
voestalpine Signaling Siershahn (DE)  
voestalpine Signaling Sainerholz (DE)  
voestalpine Signaling UK (UK)  
voestalpine Signaling Poland (PL)  
voestalpine Turnout Technology Germany in Butzbach, Brandenburg and Gotha (DE)  
voestalpine Turnout Technology Netherlands (NL)  
VAMAV Vasúti Berendezések Gyöngyös (HU)  
JEZ Sistemas Ferroviarios Lodio Ludio (ES)  
Matériel Ferroviaire d'Arberats (FR)  
voestalpine Railway Systems Latvia (LV)  
voestalpine Railway Systems Lietuva (LT)  
voestalpine Turnout Technology UK (UK)  
voestalpine Railway Systems Bulgaria (BG)  
voestalpine Railway Systems Romania (RO)  
voestalpine Kardemir Demiryolu Sistemleri Sanayi ve Ticaret Anonim Sirketi (TR)  
voestalpine Railway Systems Saudi Arabia (SA)  
voestalpine Railway Systems France (FR)  
voestalpine Rail Technology (AT)  
TSF-A (AT)  
Travertec (RO)  
voestalpine Railpro (NL)  
voestalpine Rail Center Duisburg (DE)  
voestalpine Rail Center Königsborn (DE)  
voestalpine Track Solutions Germany (DE)

### North America

voestalpine Railway Systems Nortrak in Cheyenne, Birmingham, Chicago Heights, Newton, Pueblo and Decatur (US)  
Nortrak-Damy (MX)

### South America

voestalpine VAE Brasil Produtos Ferroviarios (BR)

### Australia

voestalpine Railway Systems Australia (AU)

### Africa

voestalpine VAE South Africa in Isando and Kimberley (ZA)

### Asia

voestalpine VAE VKN India (IN)  
CNTT China  
voestalpine Railway Systems (TH)

## ISO 45001 or OHSAS 18001

voestalpine Railway Systems Lietuva (LT)  
voestalpine Railway Systems Australia (AU)  
voestalpine Turnout Technology Zeltweg (AT)  
voestalpine Signaling Austria (AT)  
Weichenwerk Wörth (AT)  
voestalpine Railway Systems Latvia (LV)  
voestalpine Turnout Technology Germany in Butzbach, Brandenburg and Gotha (DE)  
JEZ Sistemas Ferroviarios Lodio Ludio (ES)  
Matériel Ferroviaire d'Arberats (FR)  
voestalpine Railway Systems Romania (RO)  
voestalpine Railway Systems Bulgaria (BG)  
voestalpine VAE VKN India (IN)  
voestalpine Kardemir Demiryolu Sistemleri Sanayi ve Ticaret Anonim Sirketi (TR)  
voestalpine Railway Systems Saudi Arabia (SA)  
voestalpine Railway Systems (Thailand) (TH)  
voestalpine Rail Technology (AT)

## ISO 50001

voestalpine Turnout Technology Zeltweg (AT)  
voestalpine Railway Systems Latvia (LV)  
voestalpine Signaling Austria (AT)  
voestalpine Turnout Technology Germany in Butzbach, Brandenburg and Gotha (DE)  
voestalpine Rail Technology (AT)

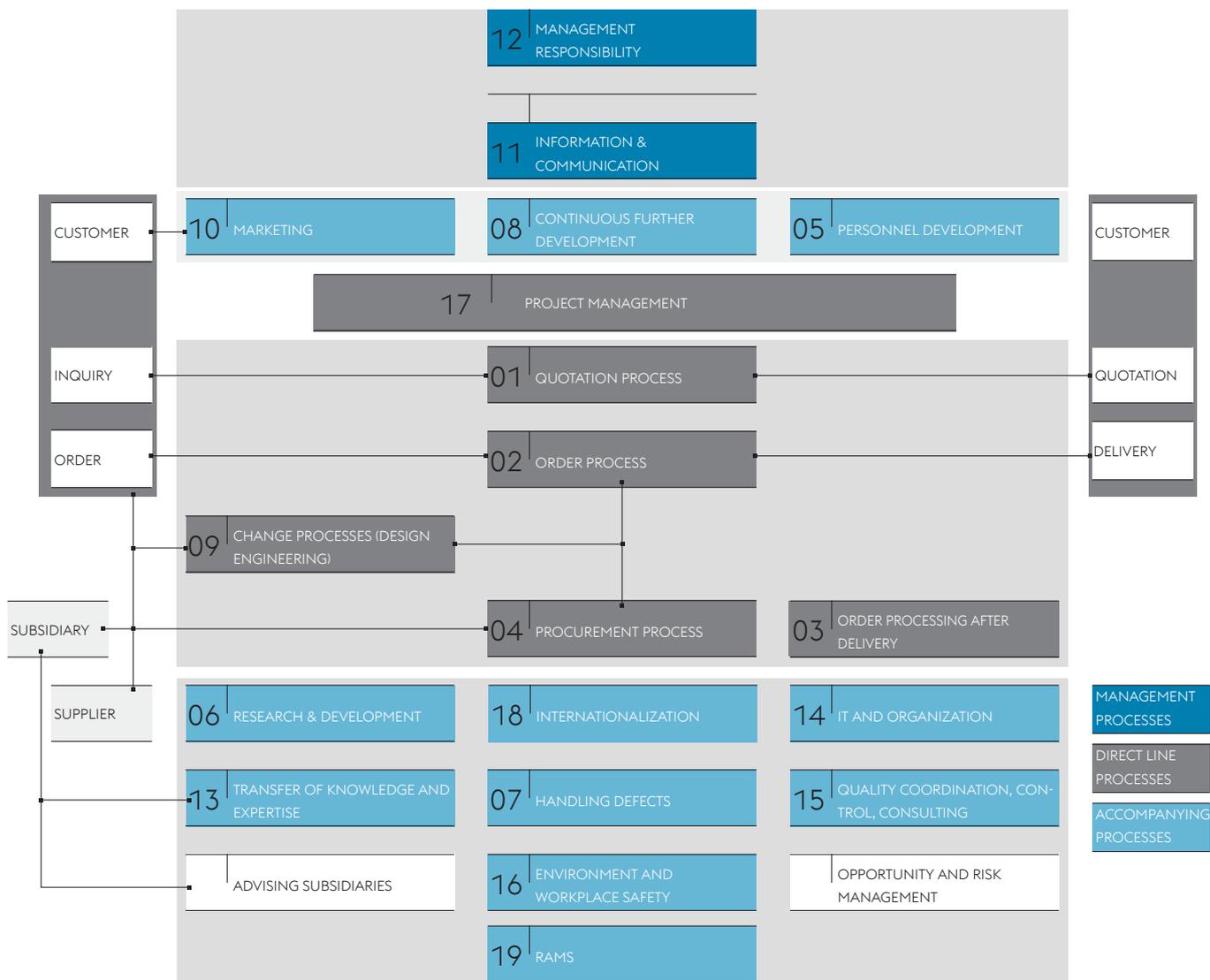
## ISO 14001

voestalpine Turnout Technology Zeltweg (AT)  
voestalpine Signaling Austria (AT)  
Weichenwerk Wörth (AT)  
voestalpine Railway Systems Lietuva (LT)  
voestalpine Turnout Technology Germany in Butzbach, Brandenburg and Gotha (DE)  
JEZ Sistemas Ferroviarios Lodio Ludio (ES)  
Matériel Ferroviaire d'Arberats (FR)  
voestalpine Railway Systems Romania (RO)  
voestalpine Railway Systems Bulgaria (BG)  
voestalpine VAE South Africa (ZA)  
voestalpine VAE VKN India (IN)  
voestalpine Kardemir Demiryolu Sistemleri Sanayi ve Ticaret Anonim Sirketi (TR)  
voestalpine Railway Systems Latvia (LV)  
voestalpine Signaling UK (UK)  
voestalpine VAE South Africa Isando (ZA)  
voestalpine Railway Systems (Thailand) (TH)  
voestalpine Rail Technology (AT)

\*) As of September 15, 2020

# THE PROCESS LANDSCAPE OF voestalpine Railway Systems

A process-oriented approach was chosen for the development, maintenance and improvement of our products and services. The most important processes – those that create value – were identified. The interaction of these processes is managed by those responsible through process landscapes, process descriptions and their metrics. The process descriptions represent the procedures within our organization in full compliance with ISO 9001:2015, ISO 14001:2015 and 50001:2018 and ISO 45001:2018 and are binding for all employees of voestalpine Railway Systems.



# THE PROCESS DESCRIPTIONS OF voestalpine Railway Systems

- 01 Quotation process**
  - Prequalification
  - Processing customer inquiries and creating quotations
- 02 Order process**
  - Order verification and release for design engineering
  - Design engineering process in order (approval and implementation)
  - Purchase order and order coordination
- 03 Order processing after delivery**
- 04 Procurement process**
  - Procurement from subsidiaries
  - Qualification of subsidiaries
  - Procurement of bought-in goods
  - Route order
- 05 Personnel development**
- 06 Research & Development**
- 07 Handling defects**
  - Complaints
  - Defects discovered during production
- 08 Continuous further development**
- 09 Change processes (design engineering)**
- 10 Marketing**
  - Customer satisfaction, external communication, pull
  - Customer benefits, external communication, push
- 11 Information management & communication**
- 12 Responsibility of management as process**
  - Vision, strategy, quality policy & objectives
  - Organization
  - Agreeing on objectives
  - Management review
- 13 Transfer of knowledge and expertise**
- 14 IT and organization**
- 15 Quality coordination, control, consulting**
  - Planning the management system
  - Process landscape and responsibility
  - Process metrics
  - Documents and quality records
  - Creating and controlling process descriptions
  - Obtaining and maintaining standards
  - Maintaining customer specifications
  - Internal audits
- 16 Environment and workplace safety**
- 17 Project management**
- 18 Internationalization**
- 19 RAMS**

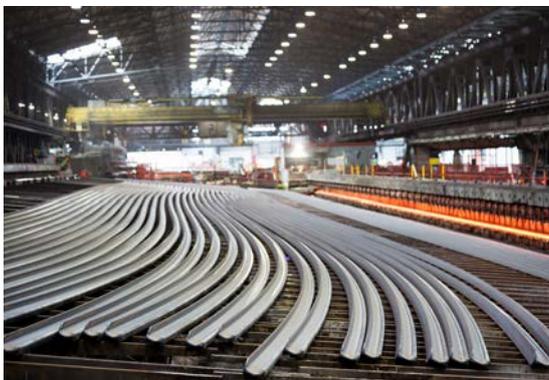


# THE QUALITY POLICY OF voestalpine Railway Systems



## The system provider

Complete solutions from a single source are increasingly in demand. This makes it necessary to develop new products as system modules and to open up new service areas within the value chain. This includes entering into strategic partnerships to optimize our chances for success.



## Listening to the customer

The market success of our products and services is directly related to the recognition of customer needs and expectations. Special attention is paid to the fulfillment of customer requirements in technical and scheduling aspects as well as customer expectations with regard to the price-performance ratio of our products and services.



## Technological leadership

Based on our current market position, we want to further expand our technological leadership and have the right technology available in all important railroad markets. As a leading company, we meet the challenges of digitization as well as making use of the best performing rail, turnout and signaling technology.



## Leading with objectives

In order to effectively implement our policy and to meet the challenge of continuously improving our performance processes, products and services, efficient and measurable, quality objectives have been defined. These are intended to serve as the planning basis for operational team objectives that are clearly measurable and can be retrieved easily using our standard IT modules.



## THE QUALITY OBJECTIVES OF voestalpine Railway Systems

### Customer satisfaction

To the greatest extent possible, our goal is to maintain and increase the satisfaction of our customers with the products and services of the voestalpine Railway Systems Group as well as to satisfy customer wishes regarding consulting as well as pre-sale and after-sale service.

### On-time delivery

We will adhere to the agreed-upon delivery dates and communicate with the customer in a timely manner in the event that deviations arise or are evident. For this purpose, a monitoring system is used to measure the strengths and weaknesses of our subsidiaries, partner companies and suppliers so that we can advise them in their continuous aspirations for improvement.

### We want to evolve

This means continuous further development of all activities. The highest priority here is to optimize internal processes and improve communication between corporate headquarters, producing subsidiaries and external partners in rendering products and services.

### Everyone contributes to corporate success

Our managers are obligated to share the agreed-upon quality objectives with their employees, monitor their implementation and communicate openly in this ongoing process of evaluation. To enable our employees to assess their contribution toward the achievement of the quality objectives, the next step involves breaking down the quality objectives into a hierarchy of operational team objectives and having the managers agree on these with the employees. The achievement of team objectives must be objectively measurable and key performance indicators must be easy to access from the IT systems that are used.

# CORPORATE POLICY ON HSEE (HEALTH, SAFETY, ENVIRONMENT & ENERGY)

The preservation of natural resources as well as the protection of employees are primary corporate objectives of voestalpine Railway Systems GmbH and its subsidiaries. This concerns not only the position as a technology leader, but also as an innovative company with regard to ecology and safety technology in the area of environmentally friendly rail transportation, all while taking into account social responsibility.

Accordingly, we are committed to a **comprehensive program for management of quality, safety, environment and energy** in compliance with the statutory provisions as well as the objective of continuous improvement. Therefore, integrated principles of our corporate conduct for the areas of health, occupational safety, environment and energy (HSEE policy) are:

- » **Fulfillment of all applicable laws and provisions** concerning protection of the environment and employees as well as commitment to the principles of **sustainable development and social responsibility**.
- » Based on the United Nations Charter and the European Convention for **Human Rights, human rights are regarded as fundamental values** that all employees are to respect and observe. Our corporate culture recognizes and appreciates that every person is unique and valuable and is to be respected for his or her individual abilities. In our company, therefore, we do not tolerate any kind of discrimination or exploitation—in any form whatsoever—and we particularly stress the protection of the rights of children and youth. Concerning this we refer to the **Code of Conduct** of voestalpine AG.
- » Obligation to the **continuous improvement** of corporate protection of the environment and employees as well as of energy efficiency with the goal of reducing environmental impact and accident and health hazards to the extent this can be achieved through use of the best available and economically justifiable technology.
- » Promotion of the **sense of responsibility of our employees** with respect to protection of the environment, protection of employees and energy consumption at all levels.
- » Striving for the highest quality, safety and reliability as well as for user-friendliness and environmental friendliness during **product development**. Particularly relevant here are low maintenance effort and expense, conservation of raw materials and resources during manufacturing as well as minimization of environmental pollution during transport, use and disposal.
- » **Prevention of waste materials** and, to the extent that it is not possible to prevent waste, environmentally friendly return of the waste into the cycle of materials.
- » Operation of an **active risk management program** by recording and evaluating substances and processes based on company-specific requirements so that the required measures for operational safety can be planned in advance.
- » **Planning and operation** of workplaces, means of production and infrastructure, while continuously taking into account the aspects of health protection, occupational safety, the environment and energy.
- » Primary focus on **prevention measures** for preserving the health of our employees and for preventing accidents and their effects on people and the environment.
- » **Holding suppliers**, waste management companies and third-party companies to account for the implementation of our environmental and safety guidelines as well as working with them for further improvement of the corporate protection of the environment and employees.
- » Open and objective **communication with our customers, the public and the responsible authorities** as well as requests for suggestions and criticism so that we can work together to reduce impacts and risks.
- » Active **strategic and operational energy management** with the goal of the Zeltweg location having the highest possible level of self-sufficient power supply based on renewable and sustainable energy sources as well as the highest efficiency for use of energy in production as well as in the life cycle of our products (taking into account not only the energy consumption of the product itself, but also its properties relevant to energy consumption in rail operations).
- » For voestalpine Railway Systems GmbH as a holding company, it is of greatest importance that the **subsidiaries continuously improve their services in the area of HSEE** and exercise their **individual** responsibility. To that end, in regard to the subsidiaries voestalpine Railway Systems GmbH takes on
  - » the role of an information provider and motivator with respect to current HSEE topics and developments,
  - » the role of an advisor in specialist questions,
  - » the role of a coordinator primarily in conjunction with projects involving multiple locations or group-wide projects,
  - » the role of a designer of due-diligence checks in the event of acquisitions or expansion of existing locations as well as
  - » the role of a controller with the help of the supervisory boards, yet without releasing them from their individual responsibility.
- » In areas recognized as relevant, for the purpose of the group's risk management, the **subsidiaries are given mandatory minimum requirements** for protection of employees and corporate protection of the environment, which may also go beyond the respective national requirements. The subsidiaries must periodically report on their status in supervisory board meetings.
- » The roles of controller and advisor additionally result in useful synergy effects to utilize and promote **the exchange of experiences between the locations** accordingly: Sustainable ideas and exemplary solutions should be communicated within the voestalpine Railway Systems Group across the borders of locations and countries.

# HSEE IN PRACTICE

## HSEE and customers

It is important to us that our products are safe and environmentally friendly during both operation and maintenance. That is why our product range includes, for example, energy-saving, noise-reducing and vibration-reducing sustainable designs (geometries, material selection, including environmentally friendly coatings and railroad tie systems, etc.)

- » Environmentally friendly, encapsulated drive systems (prevention of soil contamination)
- » Energy-saving monitoring systems (fewer interruptions/restricted speed zones)
- » Services for maintaining rails and turnouts (increased service life plus noise reduction)
- » Options for recycling turnouts

Our installation and maintenance instructions should also contribute to ensuring the occupational safety of the personnel on site.

## HSEE within voestalpine Railway Systems

In addition to instruction on the topic of environment and occupational safety (e.g. basic instruction for employees, behavior at the tracks etc.) we provide information about various aspects in the area of HSEE. These training programs/seminars include things such as health training, e.g. for sitting properly or even back exercises.

## HSEE and subsidiaries

Our subsidiaries are provided with guidelines. These guidelines contain not only informational materials, but also mandatory specifications and recommendations. The principal item is the voestalpine Railway Systems HSEE Guidebook. Continuous further development of the subsidiaries is an objective of ours and will be monitored in the supervisory/advisory board meetings at regular intervals by means of reporting requirements for the subsidiaries.



GM - Documentation RAILWAY SYSTEMS	C-D 16.00.00 Rev. 0	Chapter 1 Page: 18 of 33 pages
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Figure 1.16: Storage room for flammable liquids (paints, cleaning agents, solvents etc.) with sufficient secondary containment and air-extraction from bottom of containment.

Explosion-proof extraction unit at grid level for suction of fumes

Grid for secondary containment for 100% storage volume plus reserve for fumes in case of fire fighting according to DIN-standards

### 1.4 Storage of gas-cylinders

- General storage of gas-cylinders:** The safe storage is very important for safety and fire-aspects. The cylinders shall be stored in cages or fixed with chains at walls etc. both in empty and filled condition in order to avoid damage by being upset. See for example figure 1.17a (storage of gas-cylinders in cages) and 1.17b (fixed storage with chains at the wall).

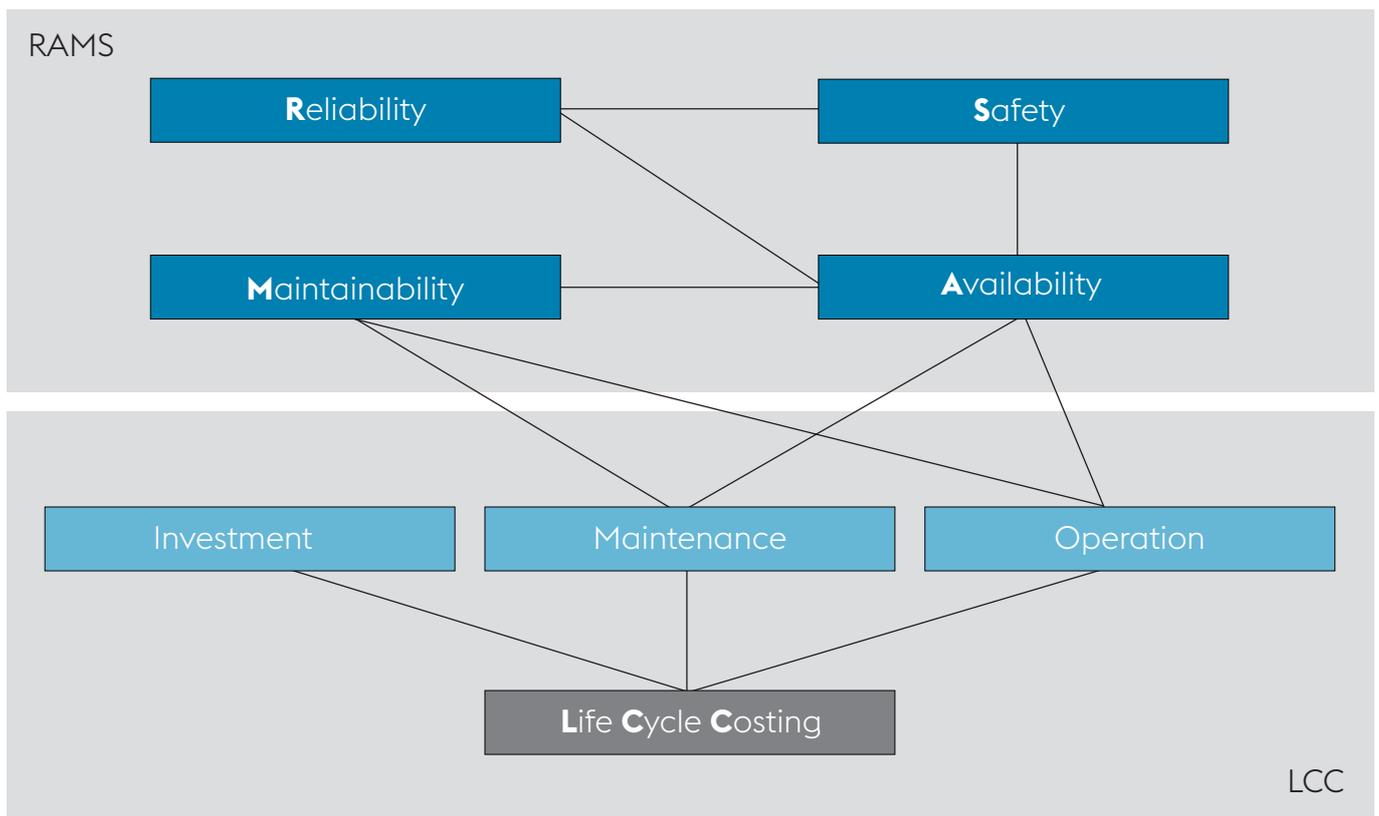
Picture 1.17a: Storage of gas-cylinders in cages

Picture 1.17b: fixed storage of gas-cylinders with chains at the wall

- Storage areas for gas-cylinders:** Typically, there should be separate areas for storing gas cylinders (within the halls only the daily need shall be stored). National codes for colours and labelling of the cylinders have to be fulfilled. The cylinders shall be labelled if they are full or empty (also important to know about in case of emergency). Storage areas can be subject to national permits depending on country. (Figure 1.18 – example of gas storage area).

voestalpine Railway Systems  
HSEE Guidebook, example

# RAMS POLICY



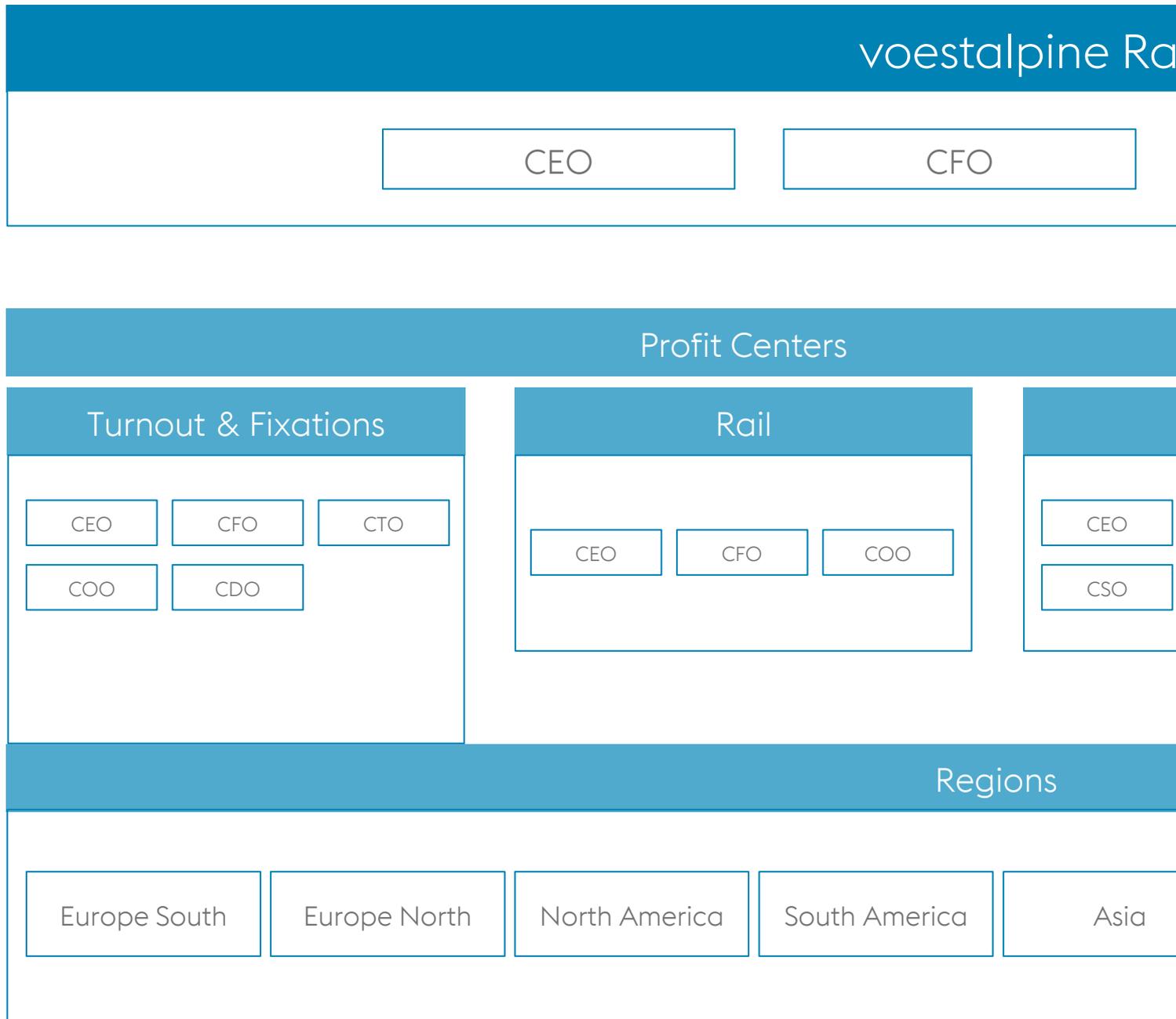
The management of voestalpine Railway Systems GmbH is always upholding the reliability, availability, maintainability and safety (RAMS) of its products and systems as a basic principle for the continuous growth of the voestalpine Railway Systems Group and integrates this basic principle into the management policy. The objective of voestalpine Railway System RAMS management is to **minimize potential hazards for people and the environment and to maximize the reliability and safety of our products while taking into account economic goals and basic conditions.**

This basic principle is implemented by voestalpine Railway Systems in its corporate policy and objectives described, for example, in the Management Manual. voestalpine Railway Systems is committed to comprehensive management of quality, HSE and RAMS and gears its research and development activities (R&D) toward long-

term retention of technological leadership for railway technology and turnout systems as well as their components while increasing customer benefit. For this purpose, voestalpine Railway Systems has set up a RAMS management system that is concurrent with all developments and projects. This RAMS management system serves to comply with statutory and contractual obligations as well as to achieve the defined company objectives.

The concurrent handling of RAMS management with its activities in development and customer projects is aimed at proving that the **requirements of the safety management organization and the performance of the products and systems regarding RAMS are fulfilled.**

# THE ORGANIZATIONAL CHART OF voestalpine Railway Systems



# ilway Systems

CTO

CMO

Signaling

CFO      COO

Competence Center

Track Solutions

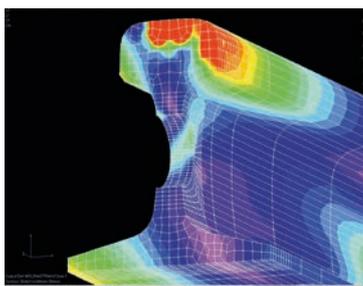
CEO      CFO      COO

- Functional Areas
- Finance, Controlling, IT
  - Legal
  - HR
  - Technology
  - Sales Coordination
  - Marketing & Communication

Australia      Africa      RoW

- Staff Functions
- Corporate Development & M&A
  - OPEX / Ind. Eng.
  - Q-HSEE
  - Investments
  - Purchasing Coordination

# QM IN RESEARCH & DEVELOPMENT



All research and development activities of the Group are coordinated by the Head of Technology of voestalpine Railway Systems. This ensures that the knowledge and facilities available in the Group are used optimally and that resources are deployed in the best possible way. In the different traffic areas (mixed traffic, tramways with Vignoles or grooved rails, heavy haul and high speed), solutions are developed together with customers in the area where the best conditions for expert, fast and efficient implementation are in place.

New developments are systematically introduced from the design and test stage with highly specialized use of modeling and simulation to carefully planned prototype applications. Market studies, documented technical feasibility

tests during the design and production stages as well as verification and validation steps are among the decisive quality measures.

voestalpine Railway Systems is the worldwide leader in recognized patents for rails, turnouts and their components as well as electronic safety and monitoring systems and hydraulic drives. A steering function is performed by central product management as a think tank.

# QM IN PRODUCTION: TECHNOLOGICAL PROCESSES



Technological processes such as flash-butt welding, forging, gluing turnout components and rolling and heat treating rails are given the special attention they deserve as central processes at many of our production sites. Highly qualified metallurgists develop the necessary parameters for optimum heat conduction tailored to the respective material. The use of digital technologies ensures the best possible reproducibility. Continuous process tests, 100% non-destructive testing and periodic maintenance of the machines guarantee process reliability.

Through continuous process optimization, several patents have already been developed, such as the welding of manganese hard steel with rail steel. Patented by voestalpine Railway Systems, this method is now used around the world.

State-of-the-art technologies are used for the non-destructive testing of welds under the supervision of Level 3 inspectors.

Destructive material tests and metallographic examinations for process tests are carried out using calibrated and constantly monitored equipment in the company's own laboratories or by state-accredited testing institutes. voestalpine Railway Systems ensures a defined quality level by centrally monitoring the production sites and specifying minimum standards.

# YOUR PARTNER

Through the process-oriented approach to developing, maintaining and improving the effectiveness of the management system, we want to further consolidate and deepen the trust our customers have placed in us to date. Of course, in case of an audit, we grant our customers full access to our quality documentation.

**If you have any questions or suggestions pertaining to Quality and Environmental Management, please contact:**



**Erik Stocker**

Vice President - Quality Management Material Technology

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Alpinestraße 1, A-8740 Zeltweg, Austria  
Phone +43/50304/28-343  
Fax +43/50304/68-343  
erik.stocker@voestalpine.com



**Peter Eichberger**

Vice President - RAMS and Safety

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peter.eichberger@voestalpine.com



**Kurt Gressenberger**

Quality Management Material Technology

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**Manfred Torschitz**

Vice President - HSEE

HSEE-Adviser voestalpine Railway Systems Group and voestalpine Metal Engineering Division

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8740 Zeltweg, Austria  
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