TEST ANALYZE DISCOVER DEVELOP

TECHNOLOGIES FOR THE FUTURE

KV R&D CENTER GMBH / IMAGE BROCHURE

KV R&D sets standards in rope technology through relentless research and development. We combine the robustness and versatility of ropes with innovative solutions. Our pursuit of excellence, thorough testing, and partnerships shape our pioneering innovation course. Experience a future shaped by our passion for excellence in rope technology.

Marco Elig **Thierry Verreet**

Managing Directors KV R&D

THE RESEARCH AND DEVELOPMENT INSTITUTION KV R&D

TECHNOLOGIES FOR THE FUTURE

Established in 2018 as a collaborative endeavor between Kiswire Ltd. and verope® AG, KV R&D serves as an autonomous partner company dedicated to advancing research and development within the specialized sector of wire ropes and their components. Located in Contwig, Germany, KV R&D integrates verope's expertise in application engineering and rope design with the advanced production technology, metallurgical, and materials science knowledge of Kiswire, recognized as one of the global leaders in the manufacture of high carbon steel wire.

Our mission is to forge ahead with the creation of highly innovative products tailored for lifting applications, while simultaneously enhancing the quality and performance of our current range and components through the integration of cutting-edge production and testing facilities. Our commitment to application-focused research and development is reinforced through strategic partnerships with leading Original Equipment Manufacturers (OEMs), wire rope component producers, and academic institutions, ensuring that our advancements remain at the forefront of the industry.

INNOVATION AT THE CORE

Harnessing a blend of revolutionary ideas and profound expertise, we venture beyond conventional laboratory boundaries. Our mission is to expand the functional and performance frontiers of special wire ropes and their components.

EXCELLENCE DEFINED

Empowered by innovative visions and specialized knowledge, we are dedicated to refining special wire ropes and their components to their utmost potential. Our pursuit of excellence focuses on elevating quality and enhancing performance, utilizing our expertise to surpass the conventional standards.

RESEARCH AND INNOVATION

THE FUTURE IS NOW

THE COMPOSITE FIBRE ROPE RESEARCH

Our exploration in composite fibre ropes aims to push technological boundaries and revolutionize rope performance. With a deep understanding of material science and design, we create solutions that focus on durability, safety and efficiency.

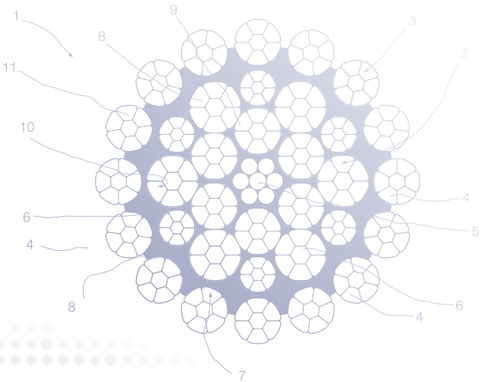
Check out the video
for more information about the fibre rope research

Check out the video
for more information about rope lifetime monitoring

EVOLUTIONIZING ROPE LIFE MONITORING

With the help of advancing rope life monitoring, we excel in accurately predicting rope longevity. Our innovative technologies are specifically designed to optimize maintenance schedules and enhance operational safety.

Keep up to date
about enhancing rotation resistance



REDEFINING ROTATION RESISTANCE WITH EXCEPTIONAL STRENGTH

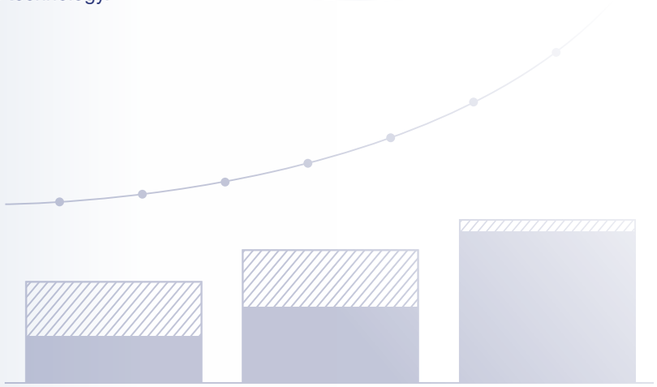
Our approach to enhancing rotation resistance combines exceptional strength with the established tensile properties of ropes. These developments aim to improve functionality and safety for ropes in the most demanding conditions.

THE TEST AND ENGINEERING INSTITUTION KV R&D

SERVICES FOR NOW

At KVR&D, we deliver comprehensive development and testing services that embody technical excellence. Our focus is on delivering innovative engineering solutions of superior quality that are ready for the challenges of today and the innovations of tomorrow. Our expertise shines in the specialized domains of special wire ropes, fiber ropes and advanced wire rope technology.

Our portfolio of services includes material testing, advanced development, meticulous calculations, and the creation of customized solutions.



TESTING FACILITY

In our testing facility in Contwig, a variety of advanced machines for comprehensive testing of ropes and components are available.

TENSILE TESTS
Tensile Test machines for wires and ropes with a maximum capacity of 5kN / 50kN / 300kN / 2500kN.

TENSION-TENSION FATIGUE TESTS
Tension-tension fatigue test machine for ropes with a maximum capacity of 210kN.

BENDING FATIGUE TESTS
Bending fatigue test machines (CBOS) for strands and ropes with a maximum capacity of 1kN / 7kN / 50kN / 198kN.

ANGLE OF ROTATION AND TORQUE TESTS
Rotation angle and torque test machine for ropes with a maximum capacity of 300kN.

SINGLE WIRE TESTS
Special tools for wire, strand and rope testing such as strain measurement systems, corrosion testing machines, optical microscopes and much more.

Furthermore, we are equipped to conduct special tests and prototype tests tailored to the unique requirements of our clients.

TEST BOX

COMPREHENSIVE TESTING SOLUTIONS

DESTRUCTIVE TESTING

In the realm of destructive testing, our expertise guarantees precise execution of wire rope tests in alignment with applicable international standards. We conduct a range of tests, including the determination of tensile strength, bending fatigue, and corrosion resistance, following strict protocols to ensure accurate and reliable results.

NON-DESTRUCTIVE TESTING

Our capabilities extend to non-destructive testing, allowing for detailed rope analysis while adhering to international standards. Employing state-of-the-art techniques, we offer visual inspections, strain measurements, and hardness evaluations to assess wire rope performance without damaging the material.

HIGHEST QUALITY SERVICE

Our dedication to superior quality and strict compliance with international standards is a testament to our commitment to delivering the highest quality service to our clients.

INNOVATION BOX

PIONEERING CUSTOM ROPE SOLUTIONS

UNIQUE SOLUTIONS

We approach customer challenges with a fresh perspective, utilizing our expertise and creativity to deliver unique rope solutions. Our commitment lies in enhancing existing designs or inventing completely new solutions, all aimed at bringing your vision to life.

SUSTAINABLE INNOVATION

Our process includes comprehensive market and patent research, ensuring our innovations are not only unique but also marketable and sustainable. By keeping up with industry trends and intellectual property rights, we pave the way for innovations that lead to long-term success.

EXPERTISE & EXCELLENCE

Our commitment to excellence is the cornerstone of our service, guaranteeing that our clients projects not only meet but exceed the highest standards of innovation and performance.

APPLICATION BOX

BOX03

INTEGRATED SOLUTIONS FOR ROPE LIFETIME OPTIMIZATION

ROPE SERVICE LIFE ESTIMATION

Our engineering tool provides theoretical estimations of rope service life according to Feyrer's methodology, offering precise lifetime predictions based on load, environmental influences, and usage conditions. These insights facilitate proactive maintenance scheduling and ensure seamless operations.

ADHERENCE TO DIN EN 13001 STANDARDS

Our service ensures that the design and management of rope systems strictly comply with DIN EN 13001 standards. By aligning with these rigorous guidelines, we guarantee the implementation of rope operation practices that prioritize safety and efficiency, crucial for reducing operational risks and boosting productivity.

ASSESSMENT UNDER REAL-WORLD CONDITIONS

Specializing in the evaluation of rope performance under actual operational conditions, our approach includes thorough analysis and data interpretation to pinpoint improvement opportunities. We deliver actionable recommendations to optimize rope operation and significantly prolong its service life.

MAGIC BOX

BOX04

BESPOKE SOLUTIONS FOR UNMATCHED PRECISION

TAILORED SOLUTIONS AND UNBOUNDED POTENTIAL

We specialize in tackling complex issues, crafting bespoke solutions that not only meet but surpass expectations. Whether it involves refining our existing services, devising entirely new solutions, or catering to specialized demands, our commitment is to deliver precisely what our clients need. Their satisfaction drives us, and we're dedicated to ensuring our clients requirements are fulfilled with unparalleled accuracy and excellence.

ACADEMIC PARTNERSHIPS

BRIDGING THEORY AND PRACTICE

KV R&D is deeply committed to technical and social advancement, actively collaborating with regional and international universities to promote teamwork and social involvement. Since 2018, KV R&D has demonstrated its support for students through a wide range of initiatives and projects. The company regularly participates open campus events, workshops and other student-focused projects, facilitating direct interaction with students.

These engagements have led to numerous study-supporting internships, including the integration of construction projects into the curriculum, specialized lectures on wire ropes, and internships supporting bachelor's and master's theses on wire rope topics. The aim of these collaborations is to connect students with KV R&D, providing personalized opportunities to nurture their interests and talents. As part of its commitment to talent development, KV R&D also sponsors various scholarships and awards, underscoring its dedication to student success.

To illustrate this successful collaboration, the following exemplary projects can be highlighted:

DEVELOPMENT OF BENDING FATIGUE TEST RIGS

In close cooperation with engineering students, advanced test rigs were developed to investigate the bending fatigue of wire ropes under simulated operating conditions.
These projects allow students to gain practical experience in developing and implementing testing facilities.

REAL-TIME WIRE ROPE LIFE MONITORING SOLUTIONS

Collaborating with computer science and engineering students led to the development of innovative monitoring systems that track and analyze the condition of wire ropes in real time. These systems significantly contribute to enhancing the safety and efficiency of wire rope usage.

SOFTWARE PROGRAMS FOR ESTIMATING WIRE ROPE LIFETIME

In partnership with computer science and mechanical engineering students, specialized software solutions were created to accurately estimate the service life of wire ropes. These tools provide valuable support for engineers and technicians in maintenance planning and operational optimization.

EXPANDED NETWORK AND EXPERTISE THROUGH UNIVERSITY COLLABORATIONS

Collaborating with universities offers KV R&D much more than just access to students. Through these partnerships, the company taps into an extensive network that brings a wealth of expertise on „Out of the Box" topics and expanded options for material testing and special investigations.

JOINT RESEARCH PROJECTS

The collaboration also encompasses joint research projects that serve both academic advancement and practical application. An example of this successful cooperation is the publication **„The Influence of the Position and Number of Steel and Plastic Sheaves on the Service Life and Lifetime of Wire Ropes."** Another study addresses the impact of fluctuating loads on **compacted and non-compacted ropes**.

These research projects bridge theoretical knowledge and practical application, contributing to the development of innovative solutions that significantly improve the efficiency and safety of wire rope usage.

LET'S SPARK INNOVATION TOGETHER

YOUR WIRE ROPE EXPERTS – HERE TO SUPPORT YOUR NEEDS

Check out our website to meet the team

Contact
www.kvrnd.com
info@kvrnd.com
+49 (0) 6332 488 70 13

Keep up to date
on LinkedIn and Instagram

KV R&D Center GmbH
KISWIRE verope

KV R&D
CENTER GMBH
Edition May 2024

Printed on environmentally friendly FSC® paper.

KV R&D Center GmbH
Seilmacherstraße 7
D - 66497 Contwig
Tel: +49 (0) 6332 488 70 13

www.kvrnd.com
info@kvrnd.com