

The HELUKABEL Group's customer magazine

POWER

Issue
#5
2016/02



This is what
high-quality
forklifts look like

Hubtex produces special forklifts
for the entire world

PAGE 10

PAGE 8

Cutting made easy

PAGE 15

A tough job for
wind turbine cables

PAGE 18

Walking again
with an exoskeleton

WHERE DOES CABLING GO?



DEAR READERS,

I am delighted that you have picked up the newest issue of POWER and that you are interested in the stories we have put together for you. It's always amazing to read about the impressive range of applications in which our cables and wires are used, from forklifts that move heavy, bulky loads (p. 10) and racing cars (p. 6) to exoskeletons produced by American company Ekso Bionics that allow paralysed patients to walk again (p.18). This last story really spoke to me and it's wonderful that we were able to contribute towards making such a worthwhile product. We of course want to acknowledge our dedicated employees in this issue as well. We introduce them and the work that they do in our plant in Windsbach, Germany, and at our branches in Limbach-Oberfrohna (Germany) and South Korea, for example.

Another year is already drawing to a close, but November still has a highlight in store for us: the SPS IPC Drives that takes place in Nuremberg, Germany. This has been one of the most important trade fairs for HELUKABEL over the years. SPS IPC Drives is where many of the world's automation players come together in order to exchange ideas, discuss interesting trends, acquire new customers, and keep an eye on competitors. We will be at the trade fair once again this year and would be delighted to meet you. Please stop by and say hello! We are looking forward to your visit.



With best regards

Helmut Luksch
General Manager of HELUKABEL GmbH

POWER

ISSUE #5 2016/02



8 KABELMAT



15 WIND POWER CABLES



18 SPIRAL CABLE



20 HEAVY-DUTY CUTTING STATION



26 SUPPLY CHAIN MANAGEMENT

UPDATE 6

News on projects and products.

HOW TO DEAL WITH CABLE DRUMS 8

Kabelmat develops a special cable drum storage system for h.team GmbH.

NO UPPER LIMIT! 10

Hubtex specialises in developing and manufacturing customised forklifts.

ENDURANCE TESTS FOR THE WIND INDUSTRY 15

W2E wires wind turbines with products from HELUKABEL's WK series.

JASON WALKS AGAIN 18

And stands upright thanks to the exoskeleton from Ekso Bionics.

MOVING LARGE ITEMS WITH EASE 20

The heavy-load cutting facility in Hemmingen processes orders automatically.

BETWEEN SIEMENS AND HELUKABEL 24

Supply chain management for customers. Roberto Vogt shares what logistics is all about.

Service/Legal details 22

Site: Welcome to South Korea! 26

Where does cabling go? 27

Faces behind the scenes 28



Cover story

NO UPPER LIMIT!

Hubtex is a leading manufacturer of special vehicles for material handling and logistics. Its forklifts, sideloaders and other special devices transport heavy, bulky goods all over the world.



New branch in Portugal

HELUKABEL's 26th international branch opened its doors in Portugal in June. Cables and wires, predominantly for industrial applications, are stored in a 600-square-metre (6,500-square-foot) warehouse in Coimbra, located between the industrial centres of Lisbon and Porto. HELUKABEL Portugal's product portfolio ranges from conventional control cables to highly flexible data cables. The branch is run by a sales and logistics team of eight employees. ■

"There is a thriving electrical industry in Portugal, and developments in the mechanical engineering and renewable energy industries are also very promising."

EDUARDO SOARES, DIRECTOR OF THE
HELUKABEL BRANCH IN PORTUGAL



HELUKABEL supports the High-Octane Motorsports Team from the University of Erlangen, Germany, which regularly participates in the international Formula Student racing competition by providing cables, wires and accessories. Over 600 student teams compete against one another every year in racing cars that they build themselves on famous tracks such as the Hockenheimring racing track in Germany. While on a smaller scale than what Nico Rosberg and Sebastian Vettel are used to, the standards that need to be met are just

as high. Johannes Strobel heads the electronics subproject on the University of Erlangen team and is responsible for everything related to cables. He has his fair share of challenges to meet. "The conditions in the engine compartment are particularly difficult to handle, since it reaches a temperature of up to 900°C (1,652°F) due to the exhaust pipe," he says. "The materials need to be able to endure this heat." It's just as well that Strobel got in touch with HELUKABEL GmbH, whose cables, wires and accesso-

ries meet the team's requirements for high-temperature applications. "Virtually the entire car is wired with products from HELUKABEL, from shielded CAN Bus cables and single cores right to heat-shrink and fabric tubes," he says. High-Octane Motorsports did not experience a single cable-related failure during the entire 2016 season. ■

Find out more at:
www.facebook.com/octanes
www.high-octane-motorsports.de

TRAINING, RESEARCH, TESTING

EBZ GROUP provides engineering services for production systems worldwide. The Training Cell in McCalla, Alabama is where EBZ electricians and pipe fitters come for internal training on PLCs and robots, and where EBZ researches and develops better processes. HELUKABEL donated all the power and data cables used within the Training Cell. "Our new training facility has been very beneficial to our end users in terms of them being able to select the products they will be using, before anything is actually installed," said Bill Hunter, EBZ Electrical Superintendent. For example, automotive manufacturers test several products in the cell before

deciding which system would be the most effective for them to implement.

An added bonus of the Training Cell is it allows local high schools with technical programs to let its students take what they learn in the classroom and apply it to a real-world work environment. "After these students have gained some automation experience we look forward to taking some of them on as interns with the EBZ team," Hunter said. "This is invaluable for these kids who may not readily have the resources to go away to college; an intern-ship with us may end up being their first step into the workforce."

PRODUCT TICKER



NEW ACCESSORIES CATALOGUE COMING SHORTLY

HELUKABEL announces several new additions to its range of cable accessories in its 21st edition. New products will be added to the HELUTOP cable gland series as well as the cable lug range, among others. The catalogue will also provide information about the right tools to use, such as cable shears, socket wrenches and drum unwinders.

For more information, contact
Susanne.Moeller@helukabel.de



Matt Badour, Regional Sales Manager at HELUKABEL USA (left), and Bill Hunter, EBZ Electrical Superintendent, at the Training Cell in McCalla, Alabama.

Certified for Saudi Arabia

A wide range of product groups from HELUKABEL have been pre-certified in accordance with the specifications of the Saudi Arabian Standards Organization (SASO) since 2015. Although the process of becoming pre-certified, carried out in collaboration with TÜV SÜD, is very costly, it offers many benefits to HELUKABEL customers. For pre-certified pro-



ducts, certificates of conformity can be issued quickly and in a straightforward manner; these certificates need to be presented to customs officials when importing to verify that the cables and wires fulfill the requirements of Saudi Arabia. This in turn allows the products to cross the border quickly and reach the recipient in a timely manner.

DRAG CHAIN-COMPATIBLE COAXIAL CABLE

HELUKABEL is bringing a new line of drag chain-compatible coaxial cables to the market. A particularly high mesh density provides optimal screening. The special outer sheath makes the coaxial cable robust and abrasion resistant.

For more information, contact
Udo.Braun@helukabel.de



HOW TO DEAL WITH CABLE DRUMS

A specially manufactured cable drum warehouse from Kabelmat provides an enormous amount of storage space and brings structure to the warehouse logistics system of h.team GmbH + Co.KG.

It has been 14 years since Bernd Haussmann founded the electrotechnical company h.team with two employees in Calw, Baden-Wuerttemberg, Germany. The company now has 50 employees, who take care of a long list of customers. They are experts in connectors, cable sets, field bus systems, and specialise in setting up electrical systems for machines and automation components. It was logical for the company to search for an effective, well-functioning warehouse logistics solution in order to keep up with the increasing needs commensurate with its rapid growth. Ruben Heinzelmann, Procurement Manager of h.team, smiles as he says, "Let's not get into the state of our previous warehouse. I'd rather focus on the new storage rack system." The company opened up its new headquarters roughly two years ago in order to bring the

production, logistics, development, sales and management of its electrotechnical components and systems together under one roof. The new premises, featuring a floor space of 10,000 square metres (107,640 square feet), is only two kilometres (1.2 miles) away from the company's previous building.

We take a couple of steps past the entrance, walk down the corridor in the office building and turn left through the glass door to arrive in a gigantic, still partially empty, warehouse. The first thing that catches our eye is the cable drum rack to our right. It is almost 20 metres wide (66 feet) and five metres (16 feet) high and the multi-coloured cables give it a bright, colourful look. Andreas Heselschwerdt, who works in the production department, walks through the overhead roller door on the other side to join us. He slides the

MESSROL, a manual coil and spool winder from Kabelmat, in front of rack bay number 5. "This device allows me to quickly and easily unwind small quantities of cable measuring less than 50 metres (165 feet)," says Heselschwerdt. Large batches, on the other hand, are cut and stripped automatically.

No downtime

As he watches the process, Heinzelmann says, "This is where we store bulk goods such as feedback and motor cables – all the way up to the ceiling. We developed this special cable storage and unwinding system in collaboration with Kabelmat." The system allows the company to avoid long setup times and spares the employees from the intense labour necessary to move and retrieve cable drums.



The operator lowers each cable using a pulley, which prevents unused cables from getting in the way when cuts are made.

Instead, Heselschwerdt and his colleagues can easily manoeuvre their way around the rack. The new cable drum storage system from Kabelmat saves an enormous amount of space, can store up to 220 drums and significantly increases productivity. "It is managed through our computerised system and is connected to our EDV storage system," says Heinzelmänn. "This means we can make sure that we never have any downtime and that we are always informed about the availability of our cable stock."

Extra features

"We spent a long time thinking about the requirements that such a cable storage and unwinding system would need to fulfil," says Heinzelmänn. It needs to stand very close to the wall in order to

save space. This means you can only access it from one side, but h.team wanted to fully exploit the maximum storage capacity of the space. The company decided to develop a storage system that could store two drums back-to-back on each LAGROL shelf except for the bottom shelves. "Our challenge was to find a viable solution that would allow us to load and unwind the cable drums stored on the upper shelves against the wall without damaging our cables or needing to move our drums all the time," says Heinzelmänn.

h.team and Kabelmat decided that using pulleys would offer the best solution. Each cable now has its own pulley, which the operator uses to bring down the cable. This prevents excess cables not being used from getting in the way and makes it easier to pull down the selected cables.

Another key feature of the system are the brakes. This is how it works: each cable drum is placed on a drum axle when it is first received. Cones centre and fix the drums on the axle, preventing it from loosely sliding back and forth. An employee in the production department then raises the drum by the axle and latches it onto the axle holder. "This process prevents the cable drums from endlessly unwinding as soon as you pull on the cable. The brake linings on the axle holder stop the axle from moving, thereby stopping the entire drum from rotating further. This means that the cable runs smoothly, but its movement stays under control," explains Heinzelmänn.

More storage space

Additional rack shelves are still available in the warehouse system. Heinzelmänn emphasises the word "still" before adding, "We are an ambitious company. We built an entirely new warehouse specifically so that we could meet increasing demands as we continue to grow. We have enough storage space available here for the next few years." Heselschwerdt has now arrived in a forklift. He uses the Kabelmat TROMPLAT fork to lift up an entire drum, one millimetre at a time, places it in the axle holder and disappears through the overhead roller door once more. ■

OPTIMAL NETWORKING

h.team GmbH + Co. KG in Calw, Baden-Wuerttemberg, Germany, specialises in planning and implementing all kinds of electrotechnical machine wiring systems. The company supplies customers in the automotive, pharmaceutical and electronics industries with connectors, smart sensors, and optimal field bus and data systems.



Stephan Hohmann and his design team develop special forklifts for moving heavy loads to tall heights.

NO UPPER LIMIT!

Forklifts from Hubtex are the ideal solution for moving long, bulky and heavy goods. The medium-sized company based in Fulda, Hessen, Germany, manufactures tailored products, providing a clear advantage over other companies that mass-produce material handling vehicles.



From aluminium profiles, flat glass blanks and aircraft engines, to wood panels, cable drums, plastic tubes, and press tools, forklifts from Hubtex can gently move heavy, bulky loads of virtually any material for any industry. The Hubtex catalogue of special solutions covers 84 pages and presents a truly impressive range of products. Stephan Hohmann, Electrical Design Special Vehicles at Hubtex, has just returned from a trip to the US, where he was overseeing the commissioning of a mobile assembly platform in an aircraft hangar. The assembly platform allows technicians to safely work at tall heights and features a lifting device that can transport all necessary parts to the fuselage. The dual capabilities of this piece of equipment have been successful for many years. Among others, HELUKABEL supplied JZ-603 control cables and MULTIFLEX 512 drag chain cables, which are UL certified. "All of the HELUKABEL VDE cables that we use are also available with UL certification," says Hohmann. "It speaks volumes that these cables have passed the strict safety inspections carried out by American aviation authorities."

Customised industry solutions

Forklifts from Hubtex have also proven to be the ideal choice for the glass industry. Featuring heat-resistant cables, the forklifts remove flat glass panels directly from the autoclave, a gas-tight pressure chamber that bonds layers of laminated glass plates under high pressures at a temperature of 120°C (248°F) for increased

All special vehicles from Hubtex feature cables, wires and assembly accessories supplied exclusively by HELUKABEL.



Hubtex specialises in designing solutions that are tailored to individual requirements for companies' intralogistics.

strength. "It is even hotter in the foundry where our vehicles feature protective, heat-resistant armour, an emergency exit for the driver, and a fire-extinguishing system. These vehicles transport the convertor, for example, which is a container filled with glowing, liquid iron," says Stephan Hohmann. These vehicles are equipped with heat-resistant HELUKABEL products: MEGAFLEX 500, KOMPOSPEED 600, as well as ROBOFLEX RECYCLE cables in various cross sections.

"Our vehicles are often used for several shifts in a row, seven days a week. This means that cables, wires and connectors also need to fulfil the highest requirements."

STEPHAN HOHMANN,
ELECTRICAL DESIGN SPECIAL VEHICLES

Quality comes first

The makers of Gouda & Co. require extremely durable vehicles that can withstand the roughest operating conditions when it comes to the storage of its tasty blocks of cheese. Multidirectional side loaders that are deployed in refrigerated warehouses are exposed to high humidity and a high concentration of salt in the air, which requires cable to be well protected to withstand corrosion. The cables in the vehicles must also withstand the rough conditions associated with a refrigerated warehouse. To this end, Hubtex relies

on JZ-500 control cables, H01N2-D arc welding cables, as well as the TRONIC and CAN Bus data cables.

When asked why Hubtex opts for HELUKABEL as its principal cable supplier, Hohmann convincingly responded, "There was an incident a few years ago that gave our electrical assembly team a very hard time. Our cable supplier at that time switched from talcum to silicone in its cables, which

made it significantly harder to remove the insulation. We wanted a remedy to this problem," says Hohmann with a smile. He goes on to emphasise that the company puts a high level of focus on quality when evaluating tenders. "Our vehicles are often used for several shifts in a row, seven days a week. Downtime would have disastrous consequences on production processes. This means that cables, wires and connectors also need to fulfil the highest requirements."

HELUKABEL succeeded in all aspects of the tendering process, impressing with exceptional product quality combined with a variety of VDE and UL certified products. HELUKABEL's strengths go far beyond what the average cable supplier offers. European and North American certification are rarely based on the same set of approval standards. European organisa-

Sascha Link, Area Sales Manager at HELUKABEL (left), in a discussion with Stephan Hohmann, who emphasises, "Whenever we face a challenge, Sascha Link makes sure we quickly find a solution."



tions generally focus on the materials that are used in the products and whether they comply with the RoHS directive and REACH regulation. Using plasticisers and/or lead is prohibited, since they carry many risks. Furthermore, cables need to be halogen-free and have low smoke density and toxicity. American certification bodies, on the other hand, prioritise flame resistance. Products from HELUKABEL fulfil both sets of requirements.

No catalogue goods

Hohmann recognises HELUKABEL's strengths in highly flexible and high-performance cables, which can withstand millions of cycles in drag chains without corkscrewing. The cables can also be installed in very tight spaces and in the roughest environmental conditions, such as extreme temperatures. The price-performance ratio also fulfills purchase requirements. An additional deciding factor was the behaviour of the cables during installation. "HELUKABEL products are very easy to process, whether they are PUR or PVC cables," says Hohmann. Even though most machines are customized products, the electrical assembly team uses pre-determined construction kits. This means that new solutions can be quickly developed from tried and true components. "Functions such as steering and driving are invariable. Therefore, we revert to the basics," says Hohmann.

Another benefit of using HELUKABEL products is the excellent consultation skills provided by Sascha Link, Area Sales Manager. Link is more than just a salesman to Hohmann. "Whenever we face a new challenge, Sascha makes sure we quickly find a solution. We also discuss our ideas with him and he regularly offers convincing alternatives," Hohmann says. This is how a simple supplier relationship quickly turned into a valuable partnership. Special vehicles from Hubtex now feature cables, wires and assembly accessories that are supplied exclusively by HELUKABEL. ■

FORKLIFTS FOR THE ENTIRE WORLD

Hubtex, based in Fulda, Germany, is a leading materials handling and logistics vehicle manufacturer and specialises in producing custom-built vehicles. Forklifts, side loaders and other special devices from Hubtex transport unwieldy goods, often weighing several tonnes, through the corridors of manufacturing and trading companies worldwide. The company has continuously grown since it was founded in 1981 and currently employs over 300 employees.

ENDURANCE TESTS FOR THE WIND INDUSTRY

In order to harness the power of the wind, several cables need to function reliably and fulfil many different technical requirements. For the continual development of turbines used all over the world, W2E collaborates with HELUKABEL.

Wind power is now an established component in the global energy mix. Much of it is produced with turbines from W2E Wind to Energy, a developer based in Rostock, Germany. Time and again, this company finds itself grappling with cable challenges. Dr. Torsten Schütt, Head of Electrical Engineering at W2E, says, "The first thing everyone thinks about is how to transfer the power that is generated. Our turbines currently have a capacity of around three megawatts, which involves currents of several thousand amperes." How-

ever, in addition to the actual power cables, there are many other important cables in the nacelle and tower that make sure the wind turbines are operating properly. These cables transport data from various sensors that measure pressure, rotational speed, power, voltage, temperature and oil level, for example. Such cables may also control various motors that make sure the nacelles and rotor blades are facing the direction with the most amount of wind. Beyond that, there are still more cables that operate outside the actual wind turbines. Fibre optic cables network

the entire wind farm, allowing the operator to keep track of all of the information in real time at all times. Uwe Schenk, Global Segment Manager Wind at HELUKABEL, supports W2E with all of the technical questions that arise. "We've been dealing with wind energy for a very long time, so we have a lot of expertise in the challenges that are involved. It has always been important for me personally to be there for the customer on site," Schenk says. "This is the only way to find out where the real difficulties lie and how we can contribute as a cable manufacturer." ■

The infographic on the next page illustrates the kinds of technical challenges facing cables in wind turbines.



THE BIGGEST CHALLENGES



International guidelines

International standards and guidelines such as UL, IEC or CSA may pose a big challenge for wind turbine developers.

For example, UL 6141 came into effect in May 2016, stipulating that all accessible cables in North America need to be laid in cable trays. If this is impractical or impossible, only tray-rated cables are allowed for exposed run. W2E relies on HELUKABEL to stay on top of such requirements and to comply with the necessary standards. If a product is approved for use in many regions, the developer can carry out international projects easier.



Potential equalisation

Wind turbines are very susceptible to lightning strikes because they contain a large amount of metal, are taller than most structures or objects nearby, and are exposed to the elements.

Lightning most often strikes the rotor blades and needs to be diverted from the hub and tower.

Lightning-attracting receptors discharge the strike's energy at preferred attachment points.

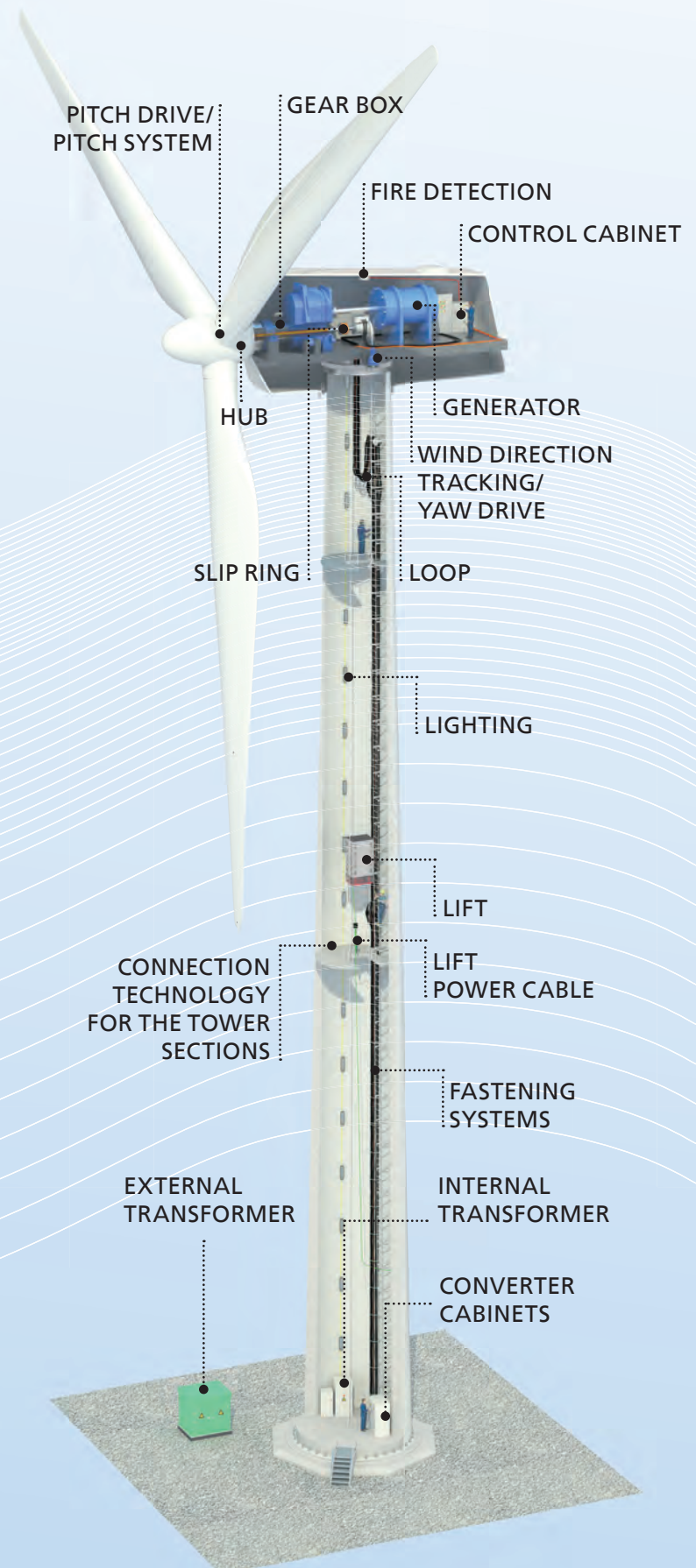
The dispersion process is more challenging for lattice towers, since unscreened cables need to be protected in a Faraday cage.

It is therefore easier to simply use screened cables.



Abrasion

Cables that are laid tightly together in the loop constantly rub against one another due to torsional movement. This abrasion reduces the wall thicknesses, which can damage the wire insulation and copper strands over time. To prevent this damage, HELUKABEL uses polyurethane and comparable thermoplastic elastomers. This finishing provides an additional layer of protection. The outer sheath must have a low-adhesion surface in order to ensure that the cables glide past one another smoothly.



FOR CABLES IN WIND TURBINES



Electromagnetic compatibility (EMC)

A screen prevents electromagnetic interaction between the cables installed in the wind turbine, which could otherwise lead to serious malfunctions in the system. HELUKABEL recommends using a D screen (wrapped screen) in order to guarantee optimal, long-term screening for torsional applications. This is especially true for the cables laid in the loop, which need to meet stringent construction requirements.



Halogen-free

Insurers insist on the use of halogen-free materials in order to prevent costly damages in case of fire. This prevents contamination from toxic gases and corrosive acids that arise when halogenated materials burn in humid conditions.



Temperature

Bitter cold and blazing heat – wind turbines are found in a wide range of locations and are frequently exposed to extreme temperatures and sometimes, large temperature fluctuations. The cables are made of special synthetic materials that are designed to withstand temperature ranges from -55°C to +145°C (-67°F to +293°F). The respective products are designed for use all over the world, eliminating the need for different versions.



Torsion

The cable loop ensures that the nacelle and rotor blades can rotate into the optimal position based on the wind direction. The torsion-resistant cables that are used within the loop need to be able to twist up to three times around their own axis. In order to accomplish this, extremely durable class 5 and class 6 copper conductors with optimised lay lengths are used. Special abrasion-resistant materials serve as insulation for the wires and sheath, allowing the cables to withstand 18,000 torsion cycles.



Oil resistance

In the wind industry, special oils are used that impose a challenge for many materials commonly used to make sheaths. Many of these materials fail the accelerated aging test when exposed to these oils. HELUWIND WK products are therefore tested for their long-term durability, in addition to VDE or UL (Oil Res I, Oil Res II) test procedures.

THAT'S WHAT THE PROS SAY



"The wide range of international guidelines can make developing wind turbines for the whole world a challenging task. In order to minimise our costs as much as possible, we are looking to purchase as small a range of cables as possible, which are certified for use in many different countries."

DR. TORSTEN SCHUETT,
HEAD OF ELECTRICAL
ENGINEERING, W2E



"I have seen many cables in the loop that are not able to handle torsional movements. The consequences were kinks, wire breakages and material abrasion, which in turn led to turbine downtime and expensive maintenance. In order to prevent this outcome, we put our cables through the strictest tests for long-term usability."

UWE SCHENK, GLOBAL SEGMENT
MANAGER WIND, HELUKABEL

JASON WALKS AGAIN

Robotic exoskeletons from American company Ekso Bionics help patients with stroke and spinal cord injuries to stand upright and walk again. These devices are controlled through a user interface connected by a cable from HELUKABEL.

Jason Gieser is taking a walk through a rehabilitation centre in New York City, NY USA. This isn't in and of itself particularly noteworthy. But the black metal exoskeleton around Gieser's legs, and the peculiar backpack he is wearing suggest that something extraordinary is going on. There are batteries along side the backpack powering little motors in the exoskeleton, which in turn are moving Gieser's legs. The situation resembles a scene from a science fiction movie, but this is no far-fetched futuristic dream. The truth is that he can stand upright and walk again. The police officer has been bound to a wheelchair ever since he was diagnosed with a severe spinal cord injury after being involved in a motorcycle accident. "When I took those first couple of steps after two years in a wheelchair, I was overcome with emotions. I was so thrilled. It felt like I was about to fly into space," Gieser recalls.

Helpful walking aid

The Ekso GT from Ekso Bionics, based in Richmond, California, is responsible for these happy moments. The company has been developing and perfecting the computerised robotic exoskeleton since 2005. The device is now helping patients in over 120 rehabilitation centres worldwide. The most important area of application of the versatile high-tech walking aid is in rehabilitating patients with spinal cord injuries or stroke-related impairments. For stroke patients, the exoskeletons move the patients' legs, which in turn allows the brain and muscles to gradually relearn how to move and control the body. For complete spinal cord injury patients the device provides a host of wellness benefits and empowers the wearer. The device single-handedly performs a task that would otherwise require the support of three to four physiotherapists. A specially trained physiotherapist known as a "spotter" provides guidance as the patient attempts to walk.

Rochelle Rea, Director of Hardware/Software Engineering at Ekso Bionics, says, "The newest version of the Ekso GT can vary the amount of assistance it pro-

vides to the patients, performing anywhere from zero to 100 percent of the walking motion. This means the device is constantly adapting to the patient's level of progress." There are several ways to control the device. Patients can either steer it like they would a Segway – by adjusting their centre of gravity – or a physiotherapist can accompany the patient, controlling the steps via a user interface. This allows the device to adapt precisely to the speed, stride length and weight of the patient.

The perfect cable

A screened, polyurethane (PUR) spiral cable from HELUKABEL connects the remote control to the exoskeleton. One of the benefits of the cable in daily use is the fact that it doesn't get tangled up, even when there is a lot of movement or when the patient frequently puts on and takes off the backpack. This enables the user to devote all of his or her attention to the actual task at hand. Describing another benefit of the cable Rea states, "The Ekso GT serves a large market population. We are targeting an estimated 680,000 stroke and SCI patients in the US alone. It was very convenient for us that HELUKABEL has a standard cable in its product range that perfectly meets our requirements. This means we can keep costs low instead of relying on expensive customised products. At the same time, we were won over by the quality of the cable."

This benefit will also come in handy for an important plan Ekso Bionics has for the future. After a complicated process, the company recently received clearance from the American Food and Drug Administration (FDA) to market the Ekso GT to rehabilitation hospitals and clinics. Ekso Bionics would like to use this opportunity nationwide as soon as possible, and low costs will play an important role. The device made the happiest day of Jason Gieser's life even happier. "I was able to stand upright and walk down the aisle with my wife at our wedding thanks to the Ekso GT. It was a truly wonderful feeling."

Thanks to the Ekso GT,
Jason Gieser can walk
upright again - despite
his severe spinal
cord injury.

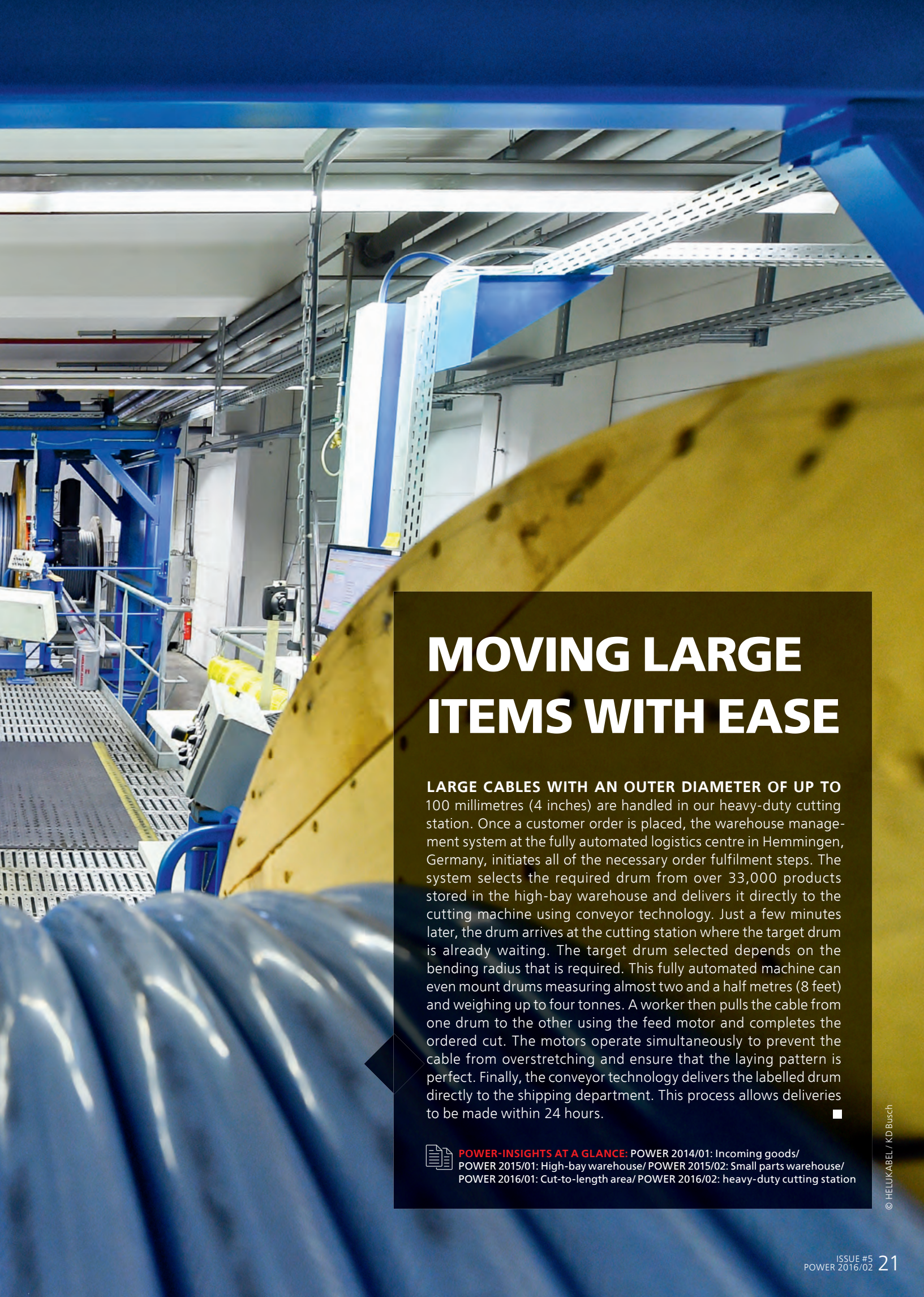
*"When I took those
first couple of steps
after two years in a
wheelchair, I was
overcome with
emotions. I was so
thrilled. It felt like I
was about to fly
into space."*

JASON GIESER



A spiral cable from
HELUKABEL connects the
remote control to the
exoskeleton.





MOVING LARGE ITEMS WITH EASE

LARGE CABLES WITH AN OUTER DIAMETER OF UP TO

100 millimetres (4 inches) are handled in our heavy-duty cutting station. Once a customer order is placed, the warehouse management system at the fully automated logistics centre in Hemmingen, Germany, initiates all of the necessary order fulfilment steps. The system selects the required drum from over 33,000 products stored in the high-bay warehouse and delivers it directly to the cutting machine using conveyor technology. Just a few minutes later, the drum arrives at the cutting station where the target drum is already waiting. The target drum selected depends on the bending radius that is required. This fully automated machine can even mount drums measuring almost two and a half metres (8 feet) and weighing up to four tonnes. A worker then pulls the cable from one drum to the other using the feed motor and completes the ordered cut. The motors operate simultaneously to prevent the cable from overstretching and ensure that the laying pattern is perfect. Finally, the conveyor technology delivers the labelled drum directly to the shipping department. This process allows deliveries to be made within 24 hours. ■



POWER-INSIGHTS AT A GLANCE: POWER 2014/01: Incoming goods/
POWER 2015/01: High-bay warehouse/ POWER 2015/02: Small parts warehouse/
POWER 2016/01: Cut-to-length area/ POWER 2016/02: heavy-duty cutting station

TRADE FAIR DATES



IN BRIEF

Our Twitter account keeps you up to date by giving you the latest news on our products and provides insights into our company.



Follow us on Twitter:

www.twitter.com/helukabelgroup

LEGAL DETAILS

POWER • Publisher: HELUKABEL® GmbH
Dieselstraße 8–12 • 71282 Hemmingen
Tel.: +49 7150 9209-0 • Fax: +49 7150 81786
www.helukabel.com • info@helukabel.de

CEO: Helmut Luksch,
Marc Luksch, Andreas Hoppe

Chief Editors: Maren Karlin, Kevin Siegel,
Dr. Petra Luksch, Reimar Schuster

Redaktion und Gestaltung: pr+co GmbH,
Katharina Dickhoff, Martin Reinhardt,
Anton Tsuji, Deivis Aronaitis

All rights reserved. Publication, reprinting and reproduction, even excerpts, require the permission of HELUKABEL® GmbH



22. – 24. November 2016

SPS IPC Drives 2016

Hall 6, booth 6-160 and 6-260, Nuernberg, Germany

14. – 16. February 2017

Middle East Electricity

Hall 8, booth 8E39, Dubai, UAE

15. – 17. February 2017

elektrotechnik

Dortmund, Germany

29. – 31. March 2017

eltefa

Hall 9, booth 9E12, Stuttgart, Germany

29. – 31. March 2017

Offshore Mediterranean Conference

Booth 3 H8, Ravenna, Italy

3. – 6. April 2017

Automate

Chicago, Illinois, USA

4. – 7. April 2017

prolight + sound

Frankfurt/Main, Germany

24. – 28. April 2017

Hannover Messe

Hannover, Germany

22. – 25. May 2017

AWEA WINDPOWER 2017 Conference & Exhibition

Booth 3266, Anaheim, Kalifornia, USA



FAQ

Some questions are asked again and again. In each issue, one of our experts answers one of these Frequently Asked Questions (or FAQs as they're referred to on the Internet).

WHAT IS AN ENCLOSURE'S DEGREE OF PROTECTION AND HOW DO WE INTERPRET THE IP CODE?

The International Protection Marking (IP-CODE), also known as the Ingress Protection Marking, classifies and rates the degree of protection provided by enclosures against the ingress of objects and water. It is based on the IEC 60529 standard and provides more detailed information to better characterise an enclosure's resilience. The IP Code indicates the protection rating with two digits. The first digit represents protection against hazardous parts and solid foreign objects. It goes up to a maximum value of 6, meaning "dust tight." The second digit represents the protection against water. Starting at a value of 0, which equals "no protection", the scale increases to such values as 8, meaning "protection against continuous immersion in water" and ends at 9K, meaning "protection against high-pressure and high-temperature water jets."

Consequently, an enclosure with a protection rating of IP00 provides no protection against the ingress of solid foreign objects; it does not prevent access to hazardous parts inside the enclosure, and it does not prevent harmful effects due to the ingress of water.

In contrast, an enclosure with a protection rating of IP11 protects against objects with a diameter greater than or equal to 50 mm (2 in) and dripping water. However, the overall level of protection is only as good as the individual components within the entire system. Thereby, high-quality cable glands are an essential element. They seal off the cable sheath and the housing, while providing strain relief. Most cable glands from HELUKABEL feature a protection rating of IP68/IP69K.

Enclosures with a protection rating of IP67 and higher do not necessarily fulfil the requirements that are defined by lower ratings. If these are required, ratings need to be indicated separately, e.g. IP66 / IP67 / IP69K, to ensure the enclosure meets the necessary standards.



ABOUT THE PERSON

Susanne Moeller oversees the Cable Accessories Department at HELUKABEL's headquarters in Hemmingen, Germany. She is your contact for all questions related to IP Codes.

3 FACTS AND FIGURES ABOUT HELUKABEL

HELUKABEL retrieved

58,989
drums

of 15 different sizes from customers across Germany last year.

19,544.3
m³ (690,200 ft³)

of wood had been used to make these drums.

6,224
trees

have been saved by reusing this material.*

* We assumed an average height of 25 metres (82 ft) and diameter of 40 centimetres (16 in) per tree to make this calculation

BETWEEN SIEMENS AND HELUKABEL

*The Siemens manufacturing plant in Chemnitz produces more than 35,000 switch cabinets every year for machine building companies. HELUKABEL provides supply chain management in all aspects of cabling. Logistics employees like **Roberto Vogt** are essential to keep the whole process running smoothly.*

7:05 AM

Before Roberto Vogt has even arrived at work, the first production order from Siemens has arrived via the SAP system. His colleagues, Process Assistant Andrea Schlegel and Team Leader for Cooperation with Siemens, Andreas Traut, process the order so that Vogt can start work straight away.



8:40 AM

Done! Roberto Vogt and his colleagues have collected all the products they need. Now they just need to load the delivery truck and then they'll be off.



7:20 AM

Vogt briefly glances at the order, then removes the required cables from the shelf by using the forklift. HELUKABEL stores around 200 products for Siemens in a separate warehouse, and Vogt knows them all like the back of his hand. He looks for the correct single core hook-up wires for switch cabinets. Siemens requires cross sections of 1 mm² (17 AWG) in dark blue and 1.5 mm² (16 AWG) in black.



9:25 AM

HELUKABEL is located just 10 kilometres (6 miles) from the Siemens production facility. When they arrive on site, they are greeted by a Siemens employee who unloads the products.



10:05 AM

All present and correct! Michael Walko, Shift Manager for the delivery department at Siemens, signs the delivery confirmation. Vogt and Walko usually see each other several times a day, as there is rarely just one order per day.



12:15 PM

Lunch time! Back on home turf, Vogt has earned his break. Eating lunch together allows colleagues to come together and exchange ideas.



1:15 PM

The next order has arrived. Normally, cables are only cut in metre lengths. But in this case, the cables needed have to be exactly 4.35 metres (14 feet) in length. This ensures that the supplied products can be installed directly in the switch cabinets.



10:30 AM

Today's schedule includes a shop floor meeting. This meeting takes place regularly to enable continuous process optimisation. Here, Matthias Dertz, Head of Procurement Logistics (left), and Antje Polster from the Lean Process Team meet with Roberto Vogt and Lothar Pinsler, Key Account Manager at HELUKABEL (right) in the Siemens production facility.



2:45 PM

The afternoon is busy, too. After the cables have been cut and packed, it's time for Vogt to head back to Leipziger Street with the next delivery. This is probably his last trip to Siemens for the day.

Seoul ●

Busan ●

WELCOME TO SOUTH KOREA!

A small, dedicated HELUKABEL team takes care of its customers on-site in South Korea, where technological advances are the norm.



Since 2002, 13 HELUKABEL Korea team members have taken care of the local market.



The headquarters of the Korean subsidiary is located in the port city Busan.

Since 2002, HELUKABEL South Korea has been supplying the cable market in the 11th largest national economy in the world. The South Korean affiliate is headquartered in the port city of Busan, where 11 employees take care of all of their customers' needs. Two additional sales employees work at a second location in the Seoul Capital Area.

New markets

The country's economy has gone through rapid growth in the last few decades. The most important sectors for HELUKABEL South Korea include the IT, semiconductor, automotive, petrochemical, steel and shipbuilding industries. The team recently managed to tap into new opportunities within new industries and has begun to supply companies in the renewable energy sector – a constantly growing market in Asia. The Busan facility is currently planning to move its warehouse to a larger building in order to stock an even greater volume of cables for the South Korean market.

HELUKABEL KOREA Co., Ltd.
521-17, Daejeo 2-Dong, Gangseo-Gu
Busan, South Korea
www.helukabel.co.kr



SPECTACULAR FIREWORKS

Pia Jeong, Branch Manager of HELUKABEL South Korea, recommends visiting the Busan Fireworks Festival, which draws a crowd of over a million people every October. This spectacle showers a colourful array of lights on her favourite place, Busan's Gwangalli Beach. "The view of Gwangang Bridge is especially beautiful at night," says Jeong. "I enjoy being at the festival the most when I'm with my family and friends."



FACTS

South Korea has the fastest internet connection speed in the world, with an average speed of **26.7 Mph.**

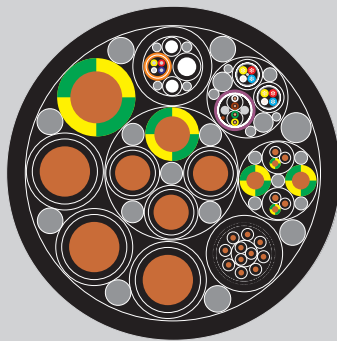
South Korea's population density is the 12th largest in the world, with **490 residents** per square kilometre.

In 2014, South Korea recorded the world's highest expenditure on research and development as a proportion of its GDP for the second year in a row when it invested a total of USD **60.5 billion.**

ABOVE AND BEYOND

WITH THE HELUWIND WK HYBRID CABLE.

THIS HYBRID CABLE WAS DEVELOPED specifically for a customer's needs and is used in wind turbines. It allows the rotor blades to be adjusted, enables the control of sensors and supplies power – just to name a few of its capabilities. The cable stretches across a distance of up to 12 metres (40 feet) through the hollow shaft of the wind turbine, joining approximately 17 different components. The customer previously needed to individually lay several control and data cables, fibre optic and bus cables as well as PA-tubes in narrow spaces. Hence, the new hybrid cable significantly reduces procurement costs, installation time, and saves a great deal of space since its outer diameter is just 70 millimetres (2.75 inches).



HIGH RESISTANCE

to mineral and synthetic oils,
as well as cooling agents

ADDITIONAL PROPERTIES

Halogen-free, flame resistant, abrasion
resistant, UV and ozone resistant



DATA MARCH!

Digitising and networking production processes compatible with Industry 4.0 are a given for a cable manufacturer.

Alexander Volkert is the mastermind behind this development in Windsbach, Germany.

It has long been the norm at the Windsbach manufacturing plant to manage data centrally, have relevant information available in real time, and have fast and continuous digital communication at all times. Alexander Volkert, a systems engineer, is at the heart of the data streams. He is responsible for the production interfaces, among other things, and ensures that information and data flow seamlessly. He is also central to the construction of the new 9,000-square-metre (96,875-square-foot) manufacturing plant expansion, for which he is currently planning and building the physical and virtual IT infrastructure.