

# POWER

EDITION  
2015-02

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**At full throttle  
under the  
desert sun**

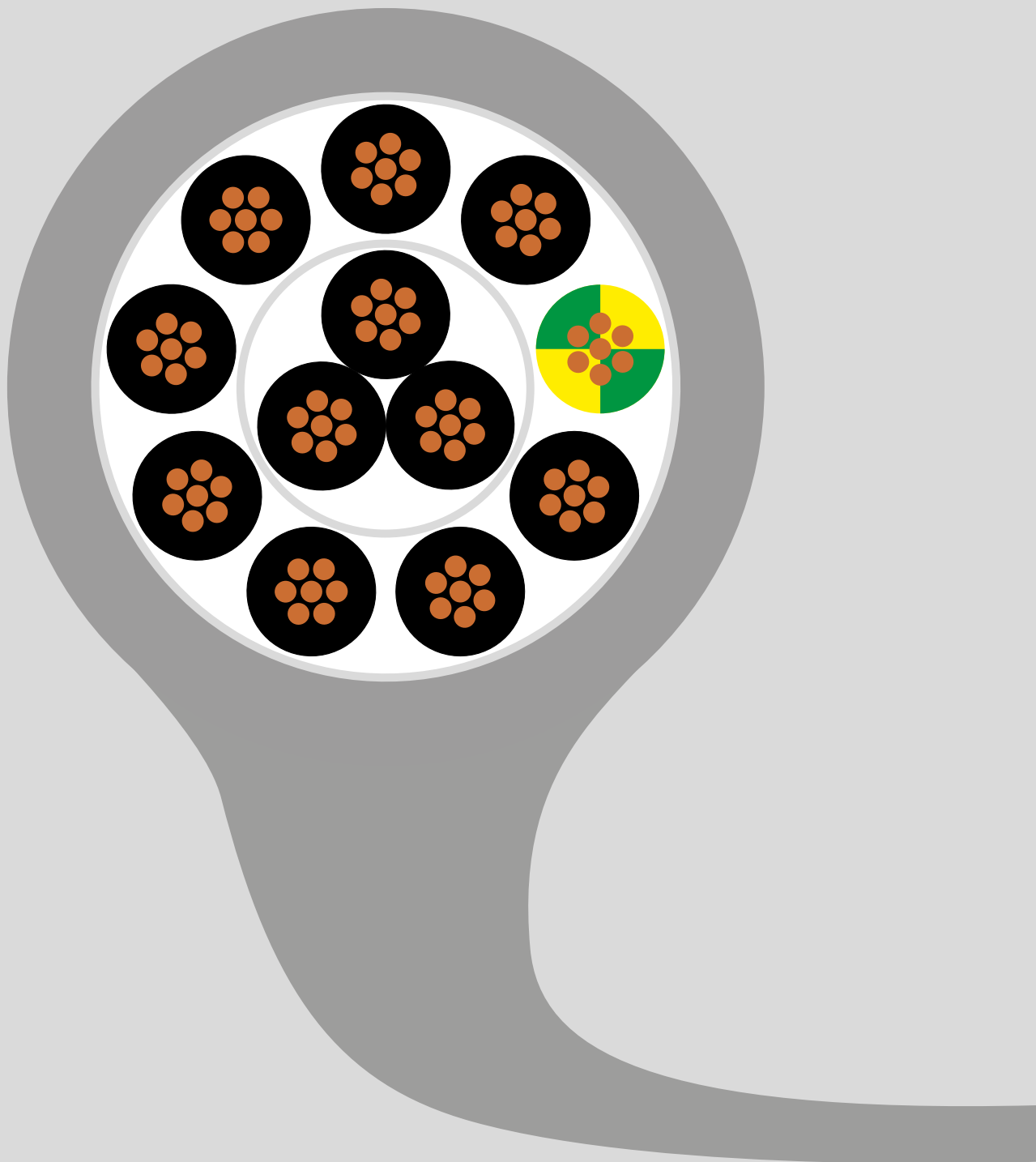
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# WHERE DOES CABLING GO?



# DIVERSITY UNITES

**W**hat does a visit to HELUKABEL have in common with strolling along the boulevard of a major city? In a shopping area, you will encounter an endless variety of restaurants, shops and people from all around the world. Everything at our company may have to do with cables, but you can also get to know people from around the globe here. We have done some counting, and have found that employees representing 29 nations work passionately for you everyday. People whose uniqueness and diversity we cherish. We make space available for them in our POWER magazine, and report on dynamic people, capture succinct pictures, and discuss amazing solutions regarding cables, wires and accessories.

Given the current wave of refugees in Europe, it seems appropriate for me to give a clear message of openness and tolerance. Since we are internationally oriented, we need diversity across national borders and to explore cultural differences, and it's a central point of our magazine to bring this to the forefront. As the reader, you will get to know a wide range of people and projects, be able to benefit from the experiences of others, and learn about clever implementations. Every story tells a variety of technical possibilities and the intense interaction of people looking for the optimal solution. We'll be happy to assist you with achieving your goal! So let's stay connected, no pun intended.



Best wishes,

Helmut Luksch



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### **Cover Story**

# **AN ELECTRICAL GIANT**

Lower noise and exhaust emissions in maritime and inland ports? No problem with the electric excavators from Liebherr.



# LEAVE A LASTING IMPRESSION

**WHETHER USED NEAR RAILWAYS,** in telecommunications, or power supply, cables almost always run underground. When they are dug out years later for service and maintenance work engineers want to easily identify what cable they are handling. In order for the label to be permanently identifiable, the SIGNOMAT from Kabelmat prints on the cables and wires during production while they are still warm. This enables the machine to sinter the label.

**Cables and conductors can be permanently labelled with the SIGNOMAT from Kabelmat.**

This means that the SIGNOMAT applies the finest powder and its grains are fused to the cable sheathing. This process creates a highly durable and slightly raised lettering, which displays the metre markings and cable type. The machine is able to label cables at a speed of up to 100 metres (328 feet) per minute. In the past year, Kabelmat updated the SIGNOMAT with the latest technology. The device, which is unique in Europe, is now optimally equipped to label cables well into the future. ■



## Backpacks for robots

**WHEN YOU WATCH THE PRODUCTION LINES IN CAR MANUFACTURING,** you see countless robots moving their arms according to precise programming. In order for 250 robots in the Volkswagen (VW) manufacturing plant in Chattanooga, TN, USA to carry out their work automatically, HELUKABEL subsidiary Robotec Systems put together 500 cable assemblies. Cables and wires are combined in a dress pack that sits on the back of each robot like a backpack. The dress pack provides the robot's tool arm with electricity, transmits data, or cools down welding applications by supplying water. HELUKABEL USA will be storing spare parts in their Chicago, IL, USA warehouse to support VW in the future to minimize maintenance downtime. Marko Dhan, Branch Manager-North at Robotec Systems, is very pleased to partner with the car manufacturer, "We have already worked together with VW on a number of projects in the last decade, and look forward to working more with them in the future." ■



The cable dress pack from Robotec Systems supplies the tool arm of the robot.



Left to right: Andreas Leniger from Planungsbüro GCA, HELUKABEL Windsbach factory technical manager Thomas Mann, HELUKABEL Founder Helmut Luksch and the mayor of Windsbach, Matthias Seitz, along with District Administrator Jürgen Ludwig.

## Breaking ground in Windsbach

**THE GROUND-BREAKING** ceremony for the construction of a new building complex at the HELUKABEL production facility in Windsbach took place in mid-September. Once completed in the fall of 2016, the new building will offer more than 9,000 square metres (96,875 sq. feet) of additional space for office, laboratory and production facilities. HELUKABEL will combine its global research and development capabilities in Windsbach with its test and inspection facilities, in the new technology centre. The planned investment of around € 20 million (\$22.4 million) is a clear commitment to the Windsbach site. "We have been manufacturing here since 1988," explains Founder Helmut Luksch. "Thanks to the largest ever investment in this facility to date, we are confident that we can meet the future challenges of the market. As a family company, we feel closely tied to the region and our employees, and further underpin our relationship with the decision to expand in Windsbach," continued Luksch. ■

# STRONG, YET FLEXIBLE

**CONTROL MODULE**, through its subsidiary Fleet Management LLC, was approached by several car rental companies to install their state-of-the-art data collection terminals at major airport fuel islands throughout the U.S. They knew there would be challenges because each location presented itself with unique environmental and rough operating conditions. The hardened terminals and receipt printers performed well, but it was the handheld barcode scanners that were the biggest challenge. The scanner reads the barcode label on the window of the vehicle after it is returned. With a high volume of vehicles going through each station, rental car operators began to experience an abundant amount of scanner failures, mainly due to the cables failing. Looking for a solution that would reduce scanner downtime, Control Module approached HELUKABEL USA to design a cable that was both strong – to resist harsh operating conditions – and flexible – so that kinks wouldn't affect inner conductors. HELUKABEL USA advised using a thick outer jacket, which would prevent an extreme bend radius and minimize the risk of kinking, and using a flexible strength member such as polypropylene twine for its speed and cost savings. Additionally, they recommended using the HSK-B Spiral Cable Gland to further reduce cable stress and allow it to be more flexible where it connects to the scanner. With the newly designed and manufactured HELUKABEL cable now in use, scanner failure rate has dropped dramatically. ■



## Reason to celebrate

**AFTER 10 YEARS OF GROWTH**, things were becoming too crowded for the employees and cable reels in the HELUKABEL sales branch in Nonthaburi, a suburb of Bangkok, Thailand. A move, which happened this past year, was the logical choice, and also reason enough to hold a celebration for both the new building and the 10th anniversary of the branch office. HELUKABEL Managing Director Marc Luksch and customer representatives were taken on a tour of the new facility by branch manager Sutisa Boonvilai and her Thai colleagues. They then listened to a band before rounding out the afternoon with some delicious food. Looking back, the branch that began with 13 employees has over the past decade quadrupled its staff, and now employs 52 people. The new building was built only a few hundred metres from the original building. The modern facility has an area of more than 1,500 square metres (16,145 sq. feet), and has enough room for a high-bay warehouse, stacked cable drums and cutting machines. Unlike the previous branch building, the office and warehouse are mounted on stilts, because the previous HELUKABEL building was affected by a flood in 2011. The new location also provides plenty of additional space for continued growth over the next few years. ■

## PRODUCT TICKER

### NEW PRODUCTS

The new "Data, Network and BUS Technology" catalogue is available. Among other items, suspension rods for ADSS fibre-optic cables, various Cat 6, Cat 6A, Cat 7 drag chain, Cat 7 torsion and PROFINET POF cables have been added to the HELUKABEL product range.

### ONE CABLE, TWO FUNCTIONS

HELUKABEL is expanding its cable offerings for the TOPSERV HYBRID PUR family. In addition to hybrid cables for single-cable solutions compatible with SICK HIPERFACE DSL® standard, HELUKABEL is now also offering hybrid cables that meet the HEIDENHAIN HMC 6 standard. Single-cable solutions for servo motors combine the cables that transmit encoder signals with the motor's power cable, thereby taking two cables and turning them into one hybrid cable.



### MOUSTACHES FOR A GOOD CAUSE

Our HELUKABEL colleagues are again growing moustaches for the "Movember" initiative this fall. Together with their female colleagues, they are supporting this global men's health initiative. More information available on: [www.helukabel.de/movember](http://www.helukabel.de/movember)



# SECURE THROUGH THE DESERT

*X-Raid GmbH relies on robust and lock-tight HELUKABEL cable ties.*

The X-Raid team fastens 500 – 600 cable ties per vehicle. Handy tools, like the ERG 50, tighten the ties to a pre-defined tension and then cuts them, are very useful.



Nothing rattles here since nuts, ratchets and keys have fixed locations. Cable ties secure the tools as well as any clamp. If they are needed, a quick cut and a new tie are all that's required.







Tight fitting at one moment, or held loose in another: Cable ties guide all the cable harnesses around the chassis, providing support when things rattle, or as loose-fitting guide in cases where being too tight could lead to damage.

At more than 120 kph (75 mph), the drivers shoot through the desert in their rally speedsters. Rough terrain and sand ridges catapult them up to as high as 20 metres (66 feet). After several seconds in the air, the cars crash back onto the track, pushing the special clearance and suspension forks to their limits. The drivers are pushed into their belts with full force, and the objects inside the vehicle pull at their mountings with a force equal to several times their weight. To make sure that everything stays put, HELUKABEL cable ties secure everything. X-Raid GmbH, from Trebur in Hessen, relies

on these clever ties. With a team of international racing drivers, the company takes part in off-road rallies throughout the world. The custom-designed, off-road vehicles not only race through dusty deserts but loose stones and muddy riverbeds are also conditions in which the off-road professionals feel comfortable. Markus Rexroth, electrician at X-Raid GmbH, explains, "For each vehicle, we tie around 500 to 600 cable ties. With these, we secure the internal cable harnesses to the chassis to ensure that nothing flaps around and to prevent plugs from working loose. Additionally, we secure tools such as screwdrivers

and spanners in the doors, so that minor repairs are possible at all times." The light and extremely tension-resistant cable ties are completely stable and weather resistant, and, if necessary, can also be quickly cut with a knife – optimal for use in the rally vehicles. Thanks to the easy handling of the cable ties, we can replace or add control lines or other connecting cables at any time and without any great effort," adds Rexroth. They achieve winning times with their reliable and optimally secured vehicle, the MINI ALL4 RACING, and have already made it to the winner's podium of the Dakar Rally several times. ■





# "ALUMINIUM? CAPRICIOUS, BUT MANAGEABLE"

*Aluminium instead of copper as a cable material is often a proven alternative in many cases. Thomas Blessing and Thomas Windisch from Carl Elektro-Anlagen (Carl Electromechanical Systems) discuss what to watch out for and what application opportunities there are with HELUKABEL expert Uwe Schenk.*





**Gentlemen, why are we talking about aluminium as a cable material at all?**

**THOMAS BLESSING:** Aluminium cables are often used to reduce cost and weight when compared to copper – including in our core business area, with turbines, transformers and UPS systems, i.e. systems for uninterrupted power supply. Aluminium weighs about half as much as copper, and costs one-third of the price. Additionally, while the price of aluminium remains relatively constant, the cost of copper fluctuates massively, and makes a safe calculation difficult. We therefore continue to make use of aluminium cables in our equipment and power supplies.

**UWE SCHENK:** You're in good company there. Aluminium has been an established material in long-distance transmission lines and infrastructure cabling, is used in wind turbines, and is conquering new fields in the aircraft and automobile sectors in connection with lightweight construction. And you also use aluminium cables in transformer stations and UPS systems.

**THOMAS BLESSING:** Yes, but only a few RFQs in our core business explicitly demand aluminium cables. This is simply due to the fact that hardly anyone is interested in how energy arrives at the main distribution facility. If the customer is under cost pressure, an offer with aluminium cabling is always a variant, however. Some transformer manufacturers have also realized this recently.

**THOMAS WINDISCH:** When it comes to costs, many people only think of the cable price. But that's a shortsighted viewpoint. Take, for example, the power cables installed throughout the ceilings of factories. If these were planned using aluminium cables, it would reduce the load by 40 to 50 percent. The supporting structure could then be designed to be simpler, and therefore cheaper.

***"It's shortsighted to only look at the cable price."***

THOMAS WINDISCH

**THOMAS BLESSING:** Less weight is also an advantage for the installer. One metre (3 feet) of copper cable weighs around three kilograms (7 pounds), so halving the weight would be great. For example, when the installer has to lay cables for us in areas with raised floors.

***But let's look at it away from the sunny side. What disadvantages does aluminium have?***

**THOMAS WINDISCH:** The electrical conductivity of aluminium is 35 percent lower than that of copper by volume. You therefore need larger cross sections for the same power transfer. Another shortcoming is that the surface of aluminium reacts very easily with oxygen, and forms a resistant oxide layer. Although this prevents further corrosion and makes the material extremely durable, it also reduces the conductivity and makes it difficult to make connections.

***"If the customer is under cost pressure, an offer with aluminium cabling is always an option."***

THOMAS BLESSING



**UWE SCHENK:** In addition, the so-called creep behaviour of aluminium must be taken into account. Under pressure, aluminium tends to elongate, which causes even the strongest of connections to lose their strength over time. Previously, aluminium cables were once contacted with simple, inadequate luster terminals. Completely inadequate. This led to an indelible impression of the long-term effects.

**THOMAS WINDISCH:** That's not surprising, because if aluminium cables are connected improperly, things quickly become dicey. Particularly when in contact with nobler metals such as copper or brass.

**UWE SCHENK:** That's absolutely correct. An electrochemical reaction can occur, which can be triggered by condensation, for example. The current that follows causes aluminium to corrode, which can be seen as an expanding oxidation site, and results in high contact resistance. The fatal consequences are massive increases in temperature and sometimes even fire.

**THOMAS BLESSING:** That's right, but that doesn't scare us. The material simply requires extreme care during processing. The installers have to be made aware of this, and be qualified to deal with these properties. In our experience, aluminium is capricious, but quite manageable. I also appreciate the fact that HELUKABEL expends a great deal of effort on certification, although this is not required by law to date.



Copper or aluminium cable – what will end up in this distribution cabinet? Thomas Windisch and Thomas Blessing (from left to right) in the manufacturing department of Carl Elektro-Anlagen.

***"Extensive tests offer  
the customer  
peace of mind."***

UWE SCHENK

**UWE SCHENK:** I think it goes without saying that we like to work on the safe side. After all, as the Carl company aptly states on its website, cables are the lifelines of an electrical supply system. With certification in accordance with IEC 61238-1, and after a series of extensive and expensive tests, we offer the customer peace of mind. The cables and connectors are put through their paces with 1,000 cycles under load. The decisive factor in this test is the short-circuit after 200 cycles – this simulates the ageing process.

***Lower conductivity, oxidation, inclination to elongate and demanding contact requirements – how do you deal with these into practice?***

**THOMAS WINDISCH:** The fact that a conductor made from aluminium requires a cross section around 67 percent bigger than a conductor made from copper can

usually be taken into account in new designs, because the space requirement can be foreseen and planned for. We rely on proven components for the connection technology.

**THOMAS BLESSING:** For example, we use bi-metal, Al/Cu cable lugs from HELUKABEL to make the contact between the aluminium and copper periphery. Because it's fully enclosed, liquids cannot penetrate, and creepage is negligible. I, for one, am convinced by HELUKABEL's solution for connecting aluminium cables.

**UWE SCHENK:** As already said, the oxide layer makes it difficult to make connections. It's thereby necessary to break through it. This takes place initially by brushing the bare conductor ends before making the contact. Then during the crimp process, in conjunction with high compression, embedded corundum particles initiate a sandpaper effect that tears open the oxide layer of

the aluminium. This allows a flawless electrical connection to be made. At the same time, the contact grease that was applied in the factory prevents moisture and oxygen from penetrating, thereby inhibiting any new corrosion.

**THOMAS WINDISCH:** I'm also a fan of compression connections. But the described approach only works on solid conductors. A solution that works for fine-wire conductor structures, such as those found in the POWERLINE ALU series, is needed.

**UWE SCHENK:** In this case, due to the larger oxidised surface of the conductor, we would recommend the certified C8 crimping process. Its contours penetrate very deeply into the bundled strand, evenly tearing the surface of individual strands and thereby enabling optimal contact, even at the center of the bundle. With a filling level of 95 percent, the C8 crimp compensates for the elongation effect.

**THOMAS BLESSING:** Within the procedures of our maintenance contracts, we have also placed the contact points on the check list for all systems. If the connections are OK, aluminium cabling is always a sure thing. ■

The editors in conversation with Thomas Windisch, Thomas Blessing and Uwe Schenk (left to right).



## CARL ELEKTRO-ANLAGEN GMBH

For 40 years, Carl has offered comprehensive services in the field of supplying power. Installations of up to 30 kV, transformers, energy management solutions, cable and distribution systems, UPS systems, around-the-clock, tailor-made spare parts, maintenance and repair are just some of the company's services in Germany. Thirty-eight employees complete around 270 electrical projects a year.



# OFF ON A WILD RIDE!

*In Serfaus-Fiss-Ladis (Austria), the Schneisenfeger toboggan run is really popular with vacationers and locals the whole year round.*

Countless children scurry around the old sawmill in the Austrian resort area of Serfaus-Fiss-Ladis. Along with their parents, they have come to Tyrol to whiz down the mountain on the Schneisenfeger. They climb into the toboggan one after the other, and let themselves be pulled 700 metres (2,300 feet) to the top of the mountain. A 70 kilowatt electric motor drives the traction cable. It obtains its electricity via the TOPFLEX-EMV-UV-2YSL-CYK-J motor cables that HELUKABEL delivers to Austria, which reliably provide power to the drive year-round. Stefan Mangott, CEO of the Seilbahn Komperdell GmbH in the Tyrol region of Serfaus-Fiss-Ladis, knows the requirements, "Here in the mountains, the cables must be extremely durable, UV-resistant and flexible, and must also be

able to withstand strong vibrations and temperature differences from minus 20 to plus 30 degrees without any problems. The same applies to the JZ-600 control cable and NYY power cable from HELUKABEL, which support the toboggan run's operation. It takes four and a half minutes for the toboggans to get to the top. And then they're on their way downhill again. During the 1,500 metre (4,900 feet) run down to the valley, they accelerate up to 42 kph (25 mph). "We have integrated so-called 'jumps' into the run, and you can feel how they push your stomach upwards," says Mangott with a grin. "The run has now been in operation since June, and the opening was a great success. Our guests are really happy, and so are we – that's how it should be."





The yellow giant, which looks like a tracked excavator, is actually a material handling machine with an electrical drive. It was designed by Daniel Bayer (seated). Joachim Koch assisted him with the drive cabling.



# AN ELECTRIC GIANT

*Liebherr has opted for electrical drives for their largest material handling machines. In order for the electricity to flow to the drive systems without any maintenance, the cabling needs to withstand quite a lot.*

**A**t a first glance, the new Liebherr machine looks like a conventional tracked excavator. Just a bit taller, perhaps. This is because the machine was first seen from a distance of almost 100 metres (328 feet), and there is nothing nearby that can serve as a benchmark for the eye. At a second glance, at close range, the differences become more obvious. This machine is so high that the excavator operator could look down into the skylight of a typical terraced house. And he could reach out over the gable with the boom, and dig up half the garden in a single shovel load – without even touching the chimney even once.

This will never happen, however. Strictly speaking, this yellow giant with the designation LH 150 EC High Rise is not an excavator, but is one of the so-called material handling machines – and these are intended for larger tasks. Tobias Riedmiller, who is responsible for the development of the new machines at Liebherr, explains, “With the development of our new large excavators, we are responding to the growing importance of global bulk commodity handling. In maritime and inland ports, or in scrap, timber or steel processing, increasing importance is being placed on low noise and exhaust emissions. In addition, the infrastructure there is already laid out for

Airy machine control room:  
In addition to the electrical drive,  
there is easily room for five people.



Because it shakes and  
vibrates, the cable clamps  
also require special  
attention.

electricity, instead of diesel. We have therefore developed a completely new platform for the electrical drive, based on the previous LH 120 model." According to Tobias Riedmiller, additional advantages of the electrical drive are a significantly lower maintenance requirement and thereby higher productivity.

### Reducing cardiac failure to zero

In order for this giant to apply its 536 horsepower to the boom so that up to 1,000 tons of material per hour can be moved within a turning radius of about 30 metres (100 feet), it is cabled and supplied with 20,000 volts of medium voltage. This has to be transformed into a voltage that can be used by the electric motors, so a powerful transformer and a frequency converter are thereby mounted on board the excavator. The current flows from there directly into the machine room. Daniel Bayer, who was responsible for the development of the electrical drive system, explained that the cable connections of the drive system are the "coronary arteries" of the material handling machine. In order to reduce the risk of heart failure to a minimum, a cable is needed that can withstand the special conditions and meets the high-quality standards.

The conditions for this kind of performance are rough. Very tight bending radii, high UV-resistance, strong vibrations, and exposure to aggressive substances such as hydraulic oils put a great deal of demand on the cable jacket and the connections. "We produce for the global market. Therefore, the excavator must be designed to carry out its work in the Finnish winter at minus 30 degrees, as well as in the scorching heat of Dubai. The cabling must also withstand these extreme temperatures," explains Daniel Bayer.



Developers get together: Daniel Bayer expects the motor cabling to require no maintenance over the life of the handling machine.



## Cables put through their paces

With these requirements in mind, Daniel Bayer called on HELUKABEL in July 2012. "HELUKABEL has established itself as a reliable partner of the Liebherr Group for many years. It was therefore only natural to ask them first," he said, recalling his first telephone conversation with Joachim Koch, who works in the Custom Cables Department. A cable that could meet the technical requirements was quickly identified from the comprehensive product range – HELUWIND, a cable with a diameter of 400 mm (750 kcmil), which was originally developed for use in a wind turbine's cable loop. The mechanical properties that had been integrated by the developers formed the perfect starting point for the tasks of the material handling machine. The cable thereby fulfilled a number of features from the very start such as a vast operating temperature range, UV resistance, and the bending radii required for the design. Unlike its use in wind turbines, the cable in the Liebherr application would not be exposed to torsion, but to strong vibrations. "The question now was whether this cable would also be suitable as a screened, motor connection cable and connect to the frequency converter. "In order to find out, we had to subject the cable to numerous mechanical and electrical tests," said Joachim Koch. Liebherr developer Daniel Bayer added, "The mechanical loads, and above all the resistance to aggressive substances such as oils, greases and coolants were the crucial points. This was crucial because we wanted to ensure the motor

Cables must withstand a lot: tight bending radii, high UV resistance, extreme temperatures, strong vibrations and contact with aggressive hydraulic oils.



cabling required no maintenance over the entire service life of the handling machine.

### Warding off the attack from the aggressive substances

Initial testing with sample oil specimens took place as early as November 2012. "For our tests, Liebherr provided us with both synthetic oils and biological oils produced from renewable raw materials, which are significantly more aggressive on plastics than conventional oils on a mineral basis," recalls Joachim Koch. The tests took place in accordance with VDE. The cables were exposed to the oils at a temperature of 90 degrees Celsius (194



Up to 1,000 tons of material an hour is moved here using 20,000 volts of medium voltage.

***"The cabling must be able to withstand extreme loads."***

DANIEL BAYER, LIEBHERR

Fahrenheit) for seven days. The inspectors then determined the remaining tensile strength and elongation at break. In order for the cables to be able to withstand all the mechanical loads during operation, special attention also has to be paid to the cable clamps. "We have developed our own vibration plate in our test centre, which realistically simulates the loads that arise on large machines," reported Joachim Koch. In extensive tests, the clamps proved their readiness for use.

All the test procedures, including determination of flame resistance, were completed by the end of 2012. Test results concluded that the HELUWIND cable is ideally suited for being both a motor connection cable and connecting to the frequency converter in the Liebherr electrical handling machine, and the order was placed in February 2013. "Through extensive testing during the design phase, we were able to avoid problems in the actual prototype phase. This accelerated the whole process," said Liebherr developer Daniel Bayer with satisfaction. He added: "HELUKABEL has once again excelled as a reliable and responsive development partner."











# SPEAKING OF "SMALL DETAILS"!

**FOR LOGISTICIANS**, there is no difference between a cable lug and a cable drum during product picking. Both have to be fetched, counted and assigned to the proper order. Therefore, the procedures in the small parts warehouse often determine how quickly shipments get onto the road. The small parts warehouse at HELUKABEL's Hemmingen headquarters is fully automated with six rack retrieval machines driving back and forth in six aisles collecting product from 36,800 storage places. They store and retrieve up to 1,000 containers an hour, and deliver accessories and cable coils to the order picking system, which is also automated. Customer orders are also temporarily stored in the distinctive red containers until the order is finally consolidated for shipping. This is another "little detail" that explains how the fully automated, small parts warehouse accelerates order processing. ■



**POWER INSIGHTS AT A GLANCE:** POWER 1-2014: Incoming goods /  
POWER 1-2015: High bay warehouse / POWER 2-2015: Small parts warehouse



# TRADE FAIR DATES



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you an insight into the work we carry  
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## IMPRINT

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**3 – 7 November 2015**

**China International Industry Fair**

Shanghai, China

**17 – 20 November 2015**

**EWEA 2015 Annual Event**

Stand: R07-2, Paris, France

**24 – 26 November 2015**

**SPS IPC Drives**

Stand: 6-160/6-260, Nuremberg, Germany

**9 – 11 February 2016**

**ATX West, Automation Technology**

Stand: 4615, Anaheim/CA, USA

**13 – 17 February 2016**

**Elecrama 2016**

Stand: Hall 2B, No. H2G27, Bengaluru, India

**1 – 3 March 2016**

**Middle East Electricity**

Stand: 6B45, Dubai, UAE

**13 – 18 March 2016**

**Light + Building**

Stand: Hall 8, No. B50, Frankfurt/Main, Germany

**25 – 29 April 2016**

**Hanover Messe (Trade Fair)**

Stand: Hall 13, No. C98, Hanover, Germany

**23 – 26 May 2016**

**AWEA WINDPOWER 2016 Conference & Exhibition**

Stand: 4623, New Orleans/LA, USA





# FAQ

*There are some questions that you hear again and again. In each issue, one of our experts answers one of these frequently asked questions, or FAQs as they are often called on the Web.*

## WHY IS IT SO IMPORTANT THAT CABLES AND WIRES NOT ONLY BE FLAME RETARDANT, BUT ALSO HALOGEN-FREE?

**UNDER NO CIRCUMSTANCES SHOULD CABLE AND WIRE** act as fuses enabling a fire to spread. They must not act as fuel for a fire, and should not release any dangerous substances.

That is exactly what happens with materials whose flame retardation is based on halogens – i.e. fluorine, chlorine, bromine or iodine. Halogens are present in polymers like PVC, FEP, and PTFE. PUR, PP, P and TPE materials are often added as flame retardants. They can escape in case of a fire, and smother the surrounding flames. Later, however, they combine with water vapour to form acids that cause irritation to the eyes, skin and respiratory system, as well as attacking metal and glass.

HELUKABEL safety cables are halogen-free. The flame retardation is based on aluminium hydroxide. In case of fire, it gives off water that crystallises. This cools down the surface and displaces oxygen, thereby inhibiting ignition. No corrosive gases are produced, only light smoke and the danger of toxic

gases is much lower. HELUKABEL offers a wide range of halogen-free cables, such as the MULTIFLEX 512 PUR, JZ 500 HMH, MEGAFLEX 500. These have proven their flammability properties in rigorous testing according to VDE and DIN-EN safety standards.

For special applications, there are cables and wires with the FE 180 / E 30 specification. During a fire, these remain functional for at least 30 minutes, and offer insulation integrity for up to 180 minutes. In this way, they ensure the emergency operation of lifts, doors, etc. as well as safety, fire alarm and emergency systems. ■



### PERSONAL DETAILS

Herbert Barthel is in charge of the cable construction in Windsbach, and is your contact person for custom cables.

**3** FIGURES FOR  
**HELUKABEL**

**4,782**

**Production orders**

are handled every year by the cable factory in Windsbach.

**186  
,878  
,381**

**Metres**

of cores manufactured and processed further – half the distance from the Earth to the Moon.

**2,628**

**Articles**

leave the factory every year, in many different versions and quantities, as well as with different approvals.

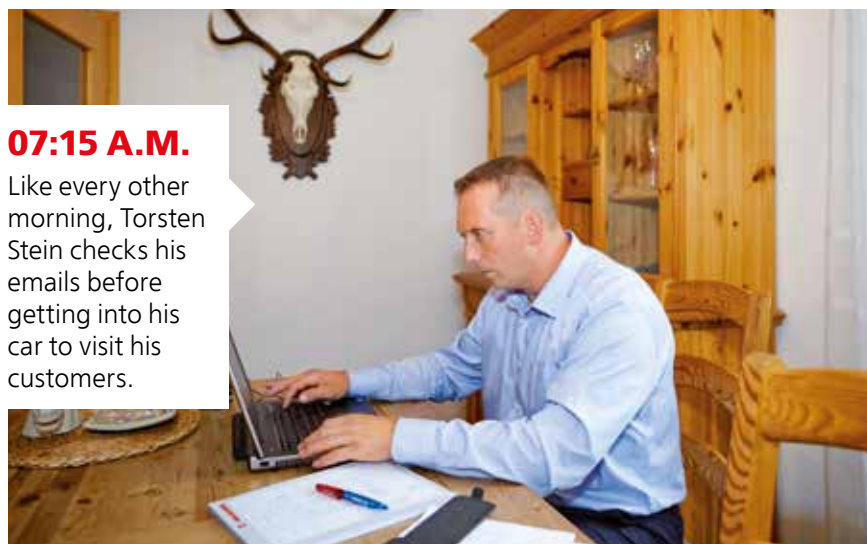
# VISITING CUSTOMERS – WITH TORSTEN STEIN

*Customer service and expert advice are the sales strengths of Area Sales Manager Torsten Stein. He has been working for HELUKABEL for 18 years, and we spent a day looking over his shoulders.*



**09:20 A.M.**

As a field sales representative, Stein spends a great deal of time on the road in his operational territory in North Rhine – Westphalia.



**07:15 A.M.**

Like every other morning, Torsten Stein checks his emails before getting into his car to visit his customers.



**08:15 A.M.**

The first visit is to the electrical workshop of a crane and special equipment manufacturer. A discussion between professionals clarifies whether the employees of this conveyor and drive technology company will install UV-resistant JZ-500 black cables in their machines.





### 10:00 A.M.

Among specialists again, but this time in a conference room with a projector. The engineers of a major customer want to learn more about motor supply cables that can be fitted into a drag chain. Torsten Stein explains the most important details.



### 11:40 A.M.

There's unfortunately not too much time for lunch. Sometimes there's only time for a quick snack while on the road.



### 01:00 P.M.

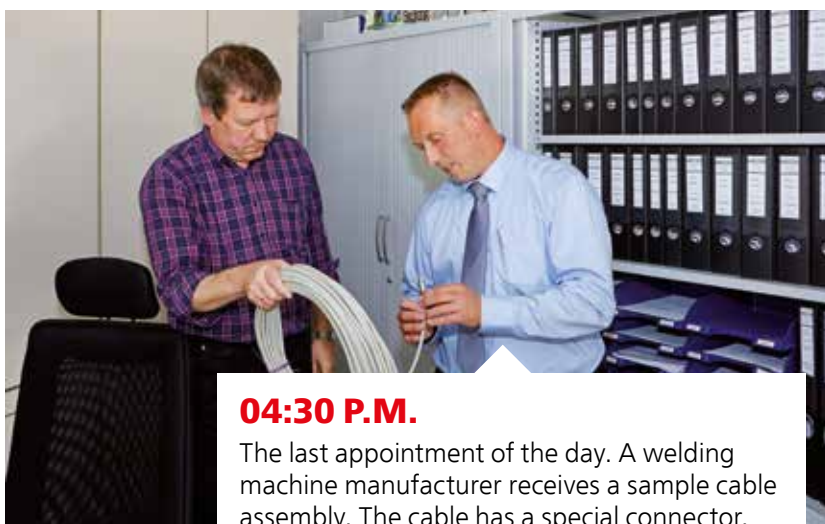
Stein arranges a so-called tandem visit in the warehouse of an electrical wholesaler with whom he works closely with. Together, they will advise an industrial client of the wholesaler.

### 03:00 P.M.

Today's agenda includes a on-site meeting with another electrical wholesaler. Stein regularly pulls out his calculator during the meeting. Up to now, he has always found the right offer for each of his customers.

### 02:15 P.M.

The next customer is already calling, "OK, of course! I'll come right away."



### 04:30 P.M.

The last appointment of the day. A welding machine manufacturer receives a sample cable assembly. The cable has a special connector. The customer tests it immediately, and has the special features explained to him.

### 07:00 P.M.

Fire brigade instead of an evening at home. Torsten Stein is a member of the volunteer fire brigade, and thereby frequently drives a huge fire truck instead of his company car.





Piotr Pedrisz, Production,  
born in Torun, Poland,  
living in Germany since 1989.



Wladislaw Papst, Warehouse Logistics  
Trainee, born in Belowodsk, Kirgisistan,  
living in Germany since 2000.

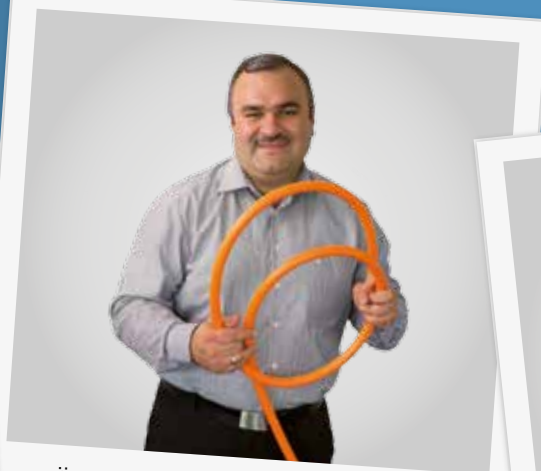


Jialong Deng, Export,  
born in Beijing, China,  
living in Germany since 2000.

# WE UNDERSTAND THE WORLD

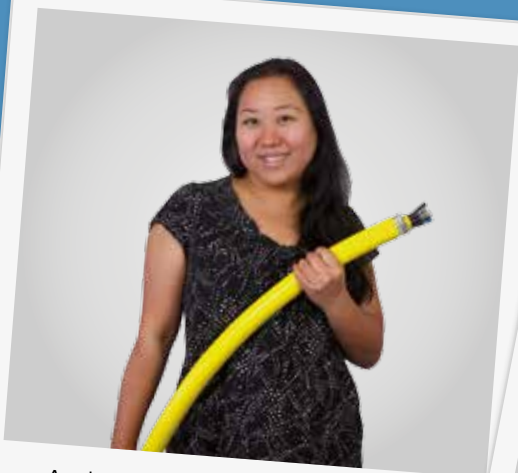


Saraiva Capitão Chakte, Cable  
Cutting, born in Angola, Africa,  
living in Germany since 1988.



Ömer Durak, Cable Construction,  
born in Gaziantep, Turkey,  
living in Germany since 1980.





Audrey Tang, Export,  
born in Singapore, Asia,  
living in Germany since 2011.



Gerardo Montenegro Aznar, Export,  
born in Naucalpan de Juárez, Mexico,  
living in Germany since 2008.



Stuart McEvoy, Export,  
born in Brisbane, Australia,  
living in Germany since 2011.

**ANYONE WHO STROLLS THROUGH THE CORRIDORS OF HELUKABEL IN HEMMINGEN** will meet many different people with very different origins. Twenty-nine nations work as one at the head office. You can't always see this at a first glance, but you can certainly hear it since Italian, Russian, Turkish and many other languages can be heard throughout the offices. This linguistic diversity gives our employees advantages, especially in the Export Department. That can be illustrated by Stuart McEvoy, for example. He was born in Brisbane, Australia and moved to Germany in 2012 to be closer to loved ones. He began working at HELUKABEL in 2013. It goes without saying that, in addition to Australia and New Zealand, he is also responsible for England, Ireland and South Africa. He can communicate very well with his colleagues in German when talking at the office. He first studied German while at school in Australia. At that time he was asking himself when he would ever use it. Now that he has been working at HELUKABEL for the past two years, he is glad he paid attention to his teachers. ■



Anton Packianathan, IT,  
born in Point Pedro, Sri Lanka,  
living in Germany since 1985.



Ankita Patil, Export,  
born in Pune, India,  
living in Germany since 2013.



JeanPaul de Castro Rosales, Cable  
Cutting, born in Pasig, in the Philippines,  
living in Germany since 1990.

Gdynia  
Poznań  
Warszawa /  
Radziejowice  
Wrocław  
Bielsko-Biała

# WELCOME TO POLAND!

*HELUKABEL's Online Pioneers*



The large, modern branch is located in the heart of Poland. With the expansion, the warehouse area has been doubled to more than 5,200 m<sup>2</sup> (56,000 ft.<sup>2</sup>); 1,000 m<sup>2</sup> (10,700 ft.<sup>2</sup>) will be available for office space in the future.



The employees of HELUKABEL Poland focus on quality and good advice.

Since it was founded in 2000, HELUKABEL Poland has developed into one of the largest national companies within the HELUKABEL Group, and currently has more than 60 employees. In addition to the conveniently located company headquarters in the Warsaw suburb of Radziejowice, where the central warehouse is also located, the national company operates four additional distribution branches in Gdynia, Poznań, Wrocław and Bielsko-Biała. In addition to classic sales and distribution, HELUKABEL Poland made use of the Internet from a very early stage, and was the first national company within the HELUKABEL Group to successfully set up an online shop.

In order to keep up with company growth, building work for an extension to the company headquarters will start at the end of the year.

HELUKABEL Poland  
Krże Duże 2,  
96-325 Radziejowice  
[www.helukabel.pl](http://www.helukabel.pl)



## A WORTHWHILE VISIT

The Marienburg in Malbork is well worth a visit, according to Leszek Wojtalik, CEO of HELUKABEL Poland. The castle is the largest brick building in Europe. It was almost completely destroyed during World War II. After being rebuilt by the Polish government, the castle has been almost completely open to the public for some years now.



## FACTS

The first Polish book, which is still in good condition today, is a cook book with the title "Compendium ferculorum" from the year **1682**.

The great coastal city of Świnoujście includes over **44** islands, and is thereby regarded as one of the most beautiful cities on the Polish coast.

Pope Johannes Paul II held office as the pope for **9667** days. He is therefore the second longest-serving pope in the history of the Catholic Church.



# CONTAINER TERMINALS

*ARE PERFECT FOR THE MULTIFLEX 512-PUR UL/CSA.*

**AS A UL/CSA APPROVED DRAG-CHAIN CABLE FOR EXTREME MECHANICAL STRESS,** the MULTIFLEX 512-PUR UL/CSA is ideally suited for the permanently flexing demands found in machine and tool construction, robot technology, and in permanently moving machine parts. This

highly flexible, special control cable is designed according to the latest, state-of-the-art cable processes. A sliding PP core insulation and a cut-resistant, low-adhesion PUR outer sheath guarantees optimum service life and very high efficiency.

## THE TEMPERATURE RANGE

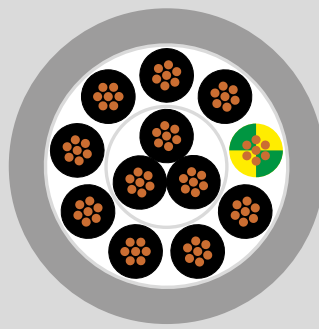
Flexing: -30°C to +80°C,  
Static: -40°C to +80°C

## ABRASION AND WEAR RESISTANT

High tear, abrasion and impact resistance, even at low temperatures

## RESISTANT

To ozone and UV radiation, as well as solvents, acids, alkalis and weathering



# SHE TAKES A VERY DETAILED LOOK

**Gabriele Fußy** is a long-standing employee at the Windsbach factory. Since August 2015, she has been responsible for over-seeing quality assurance at the manufacturing plant. Her name stands for quality!

Before HELUKABEL delivers a cable, it undergoes a thorough inspection, which is organised by Gabriele Fußy. Each product runs through a long series of tests in her laboratory. These range from mechanical tests of the tensile strength and elongation, through electrical tests, and up to flame testing. She pays special attention to initial samples, whether raw materials or finished products. Non-routine tests are carried out by Fußy herself. It is exactly this diversity that makes the job so interesting for her.