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CCG AGAIN SURPASSES INTERNATIONAL INDUSTRY STANDARDS



CCG was recently awarded the contract to supply one of the largest offshore wind farm projects currently under construction. Situated 27 km off the coast of Scotland in the North Sea, the £3 billion Seagreen project, which is a joint venture between SSE and TOTAL Energy, will have 114 wind turbines with a combined rating of 1075 MW and will supply enough renewable energy for the equivalent of a million Scottish homes.

Bidding against strong well-known British manufacturers, CCG was selected for installation on both the offshore and onshore HVAC substations and related infrastructure based on its strong technical design and comprehensive certification of its products.

The project engineering design team placed importance on a range of cable glands that could demonstrate tested proven performance to all the required electrical properties such as equipotential bonding, protective connection to earth, electrical current withstand tests of up to 43 kA and glands that were tested for compatibility with EMC rated cable and equipment. Whilst the majority of these requirements were covered by CCG's existing BS EN 62444 certification, CCG rose to the challenge and through its UK based R&D facility conducted additional electrical current and EMC testing at specialised offshore and high voltage testing centres in the UK and Holland.

In addition, the project specifications called for glands and junction boxes that would perform over the project's lifespan of 30 years. The North Sea is renowned for its adverse weather conditions with strong winds, heavy rains and rough seas. CCG's products could independently demonstrate testing and certification to various offshore industry standards

and specifications such as Shell Oil's DTS-01 – deluge, IEC 60529 – IP68 (to an unmatched depth of 850 m), marine corrosion resistance tests to ASTM B117-11 and BS EN ISO 3231 and marine certification to DNV GL, ABS and NK.

The installation contractor was also impressed with the Captive Component Gland[®] design, which means that installers working in the difficult offshore conditions can install the glands with the confidence that they will not lose cable gland components, giving true Built-In Safety[™].

Being a South African manufacturer, CCG is once again honoured to have been chosen for yet another prestigious international project, thus demonstrating that South African industry can compete in the highly competitive international market.

The demands of these international projects and the ever-changing international developments in technology and standards requires that CCG remains at the forefront of R&D, testing and certification.

This continuous strive for product design, testing and certification has also resulted in CCG recently attaining certification to the United Kingdom's new UKCA standards as well as updated UL and CSA certification for the North American Market.

From the basic industrial BW gland to the award-winning explosion-proof Injection Resin Barrier Gland[®], CCG can confidently claim that the tested proven performance of CCG products surpasses international industry standards and exceeds all others on the South African market.

Enquiries: ccg@icon.co.za

ACDC Dynamics recognises employee excellence



Mario Maia, ACDC Dynamics MD with Adrian Craddock, Tony Zajac and Jacques van Eeden.

ACDC Dynamics best performance awards are one of the most prestigious and highly anticipated announcements at the company, where leaders in their respective fields are honoured.

Congratulations to (in no particular order):

- Adrian Craddock: Sales Player of the year, selected by his colleagues as the one always willing to help and goes out of his way to get the job done.
- Jacques van Eeden: Outstanding performance while completing

his duties. (EXCO Choice).

- Tony Zajac: Commitment to customer service and going the extra mile (NSM Choice).

Established in 1984, ACDC Dynamics is a leading manufacturer, importer and distributor of quality products in the electrical, electronics, pumps and tools industries. Employing over 700 staff, ACDC Dynamics has its head office in Edenvale, Johannesburg with branches in Germiston, Cape Town and Durban.

Enquiries: www.acdc.co.za

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Beware fly-by-night electrical online auctions

COVID-19 lockdown restrictions have led to an unprecedented migration to online auctions as a means of selling anything from properties and cars to office furniture and even household goods.

New companies are emerging using social media to encourage buyers to bid or make offers on goods and buyers in the electrical and electronic industry can be duped into participating in a sale process or so-called auction that is not transparent, legal or safe.

The South African Institute of Auctioneers (SAIA), has noticed an uptick in complaints leveled at fly-by-night auctioneers who do not fulfill their obligations to deliver goods or choose to provide alternative goods

that are not what the customers bid for.

"Unfortunately, it is only when problems arise that the bidder realizes they are dealing with unprofessional sellers purporting to be Bonafide auctioneers and this should send a clear signal to the public to only deal with professional, registered auctioneers who are members of SAIA. Before committing to purchase on a so-called auction site, a simple check on the SAIA webpage will dispel any concerns you may have. Our members have remained resilient in the face of the virus and are among the leaders in online auctioneering," says SAIA chairman, John Cowing.

"Our members are responsible custodians of as-

sets who prescribe to our code of conduct. You are well advised to establish who in fact you are dealing with before parting with money. These auctions are putting a stain on our industry and we hope in time with legislation we will be able to eradicate these illicit traders. While we actively promote the growth of the industry and the uptake of new technologies, we do not support these organised crime syndicates. You can often find bargains at auction but put simply, if it sounds too good to be true, it probably isn't true," concludes Cowing.

Enquiries: +27 (0)21 813 6342

Schneider Electric extends 3-Phase Easy UPS 3L

Schneider Electric, a leader in digital transformation of energy management and automation, has announced that it has extended Easy UPS 3L from 250 kVA to 600 kVA (400 V) with the addition of 250, 300, and 400 kVA 3-phase uninterruptible power supplies (UPSs) for external batteries. The Easy UPS 3L simplifies and streamlines configuration and service, delivering high availability and predictability to medium and large commercial buildings and light industrial UPS applications.

With its compact footprint, highly-available parallel and redundant design, and robust electrical specifications, Easy UPS 3L protects critical equipment in a wide range of environments from damage due to power outages, surges, and spikes. It is up to 96% efficient to bring predictability to utility costs. Easy UPS 3L includes a wide battery-voltage window and accommodates a variety of battery configurations. It comes with a full range of options and accessories, making it easy to integrate into different environments.

"With this extension to Easy UPS 3L, Schneider Electric continues to fill a market need by offering easy, robust, and competitive solutions that prioritise efficiency, flexibility, predictability and reliability for today's connected businesses. It is easy to configure, install, use, and service," said Mustafa Demirkol, Global VP, 3-Phase UPS Offer Management & Marketing at Schneider Electric. "Thanks to an exceptional combination of competitive specifications, robust and fault-tolerant design that enhances resiliency and reliability, and an optimised footprint that saves valuable real estate, the Easy UPS 3L is the ideal choice for easy business continuity and optimised investment, whether it's on your shop floor or in your electrical room."

Customers benefit from Schneider's global service setup with strong local networks of service specialists that provide customers with a complete range of services throughout the entire Easy UPS 3L lifecycle. The start-up service is included to ensure the Easy UPS 3L is properly and safely configured for best performance, reliability, safety and peace of mind.

Simple to configure, use and service, Easy UPS 3L:

- Offers resiliency against harsh environments with conformal coated printed circuit boards, replaceable dust filter, unity power factor and strong overload protection, all of which make Easy UPS 3L a reliable solution for business continuity.
- Provides less system complexity and saves on CapEx investment.
- Features versatile architecture for redundancy or for increased capacity. You can install up to five UPSs in parallel for capacity, or 5 +1 UPSs in parallel for redundancy. If a power block becomes inoperable, the load will continue to be supported by the remaining power blocks, provided that the load is below the capacity of the functional power blocks in the system.
- Enables easy monitoring and management with EcoStruxure IT's cloud-based software suite when you buy the optional network card.

Enquiries: www.schneider-electric.com/ecostruxure-it



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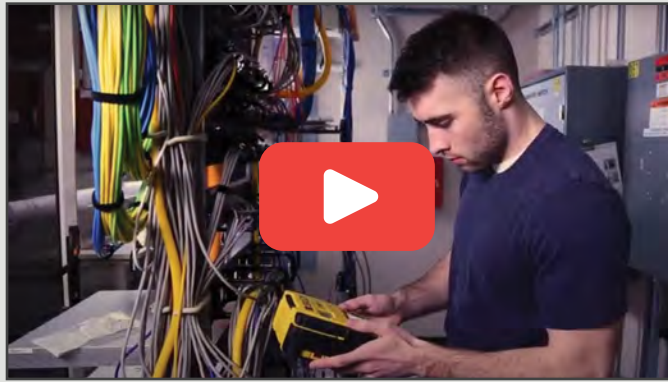
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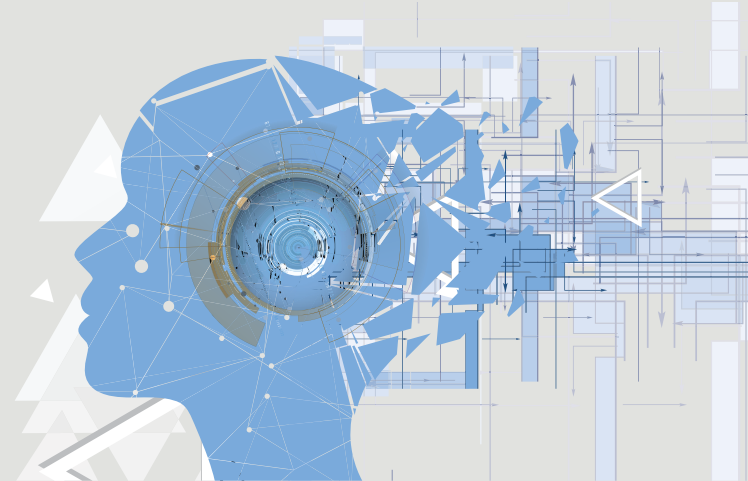
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A jobsite durable printing solution

Brady's BMP41 Label printer is a rugged, portable solution that gives you the versatility to create die-cut or continuous labels up to 25 mm wide, anywhere, anytime. Find out more about the BMP41 in this month's issue of *Sparks Electrical News*; turn to page 5.



Watch the video by scanning the QR code



Discussing watertight electrical appliances

As part of ACDC Dynamic's #dynamicdiscussions, the company travelled (virtually) to Italy to speak to Fabrizio Urciuoli from Palazzoli SPA. Palazzoli specialises in manufacturing electrical appliances with safety features that protect and are watertight, for industrial, marine, civil, agricultural, and OEM applications. ACDC Dynamics is the proud sole distributor of Palazzoli in South Africa.



See the interview by scanning the QR code



What's sparking on our website?

Upskill your workforce with WearCheck training

Condition monitoring technology is advancing so fast that ongoing training for staff working in the machinery maintenance arena is essential in order to stay abreast of current trends.



Local manufacturer pushes boundaries

South African manufacturer Pratley aims to launch at least three unique electrical termination products in 2021 aimed specifically at the offshore, oil and gas, industrial and shipping industries.



NERSA approves flagship energy wheeling project for Amazon

A flagship renewable energy project, commissioned by Amazon, is set to demonstrate the flexibility and convenience of procuring independent power through the electricity grid.



One-component silicone gel for the protection of electrical installations

PressGel, a newly launched product from HellermannTyton, is a transparent easy to use one-component silicone gel to protect electrical insulation.



What does 5G mean for our lives (and electrical contractors)?

For all the benefits that 5G is expected to bring, its impact on smart cities and smart technologies, even just its deployment will offer electrical contractors a lot of job opportunities.



Did you miss our March issue?

HIGHLIGHTS FROM THE ISSUE

Cover story

For all the benefits that 5G is expected to bring, its impact on smart cities, smart technologies, and even just its deployment will offer electrical contractors a lot of job opportunities.

Innovative electrical product saves contractors time and money

Contractors nowadays are using more and more FT&E and this is where a new electrical innovation comes in, the Ripbox.

One-component silicone gel for the protection of electrical installations

PressGel, a newly launched product from HellermannTyton, is a transparent easy to use one-component silicone gel to protect electrical insulation.

Working Knowledge with Terry Mackenzie Hoy

Electric fences are everywhere. They are used for security, for stock control, for game fences... they are very effective. It is possible, however, to make your own electric fence.

Buyers Guide

The March 2021 Buyers' Guide lists manufacturers and distributors of products and services in the Tools and Instruments sector.



Scan the QR code to read the full issue.

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Defining the spirit of success

What defines the spirit of success? Is it perseverance? The ability to overcome a challenging market and keep on delivering exceptional customer service? Is it passion? A love for the work you do and the people you meet? Or is it partnerships? Working with people and organisations to build more, do more and move forward together? For Citiq Prepaid, it is every one of these qualities – perseverance, passion, and partnership – and they are all embodied by the Citiq Installation Club (CIC).

"This year may have started on shaky feet, but there is still so much opportunity and potential," says Jaqueline Basson, CIC Loyalty Manager at Citiq Prepaid. "We need to work together to create success, to find the gaps in the market, and to explore new ways of working that ensure mutual success for all who are committed to growth in this industry."

Citiq Prepaid have long been focused on creating pathways to success, helping electrical contractors to achieve more and do more with their businesses. This is one of the foundations of the CIC, a loyalty programme designed specifically for contractors installing and recommending Citiq Prepaid meters.

"Citiq Prepaid were unbelievably willing to help us," says Tebogo Mabena, co-founder of Go Go Green Electrical. "They helped bring us a lot of customers, and they gave us marketing materials to use in collaboration with them as we work with townships and malls. They provide exceptional support, always call us back, and re-

ally are just easier to work with overall."

This is a view shared by Pride Rugwete, one of the company's top installers. Pride not only installed nearly 1 000 prepaid sub-meters in just five months, but he's been supported by Citiq Prepaid throughout.

"Working with Citiq Prepaid has meant that I don't have to worry about my customers struggling to get support when they first register their devices, and the company has a really solid product that's reliable and trusted," he says.

Both Pride and Tebogo are members of the CIC and have felt the benefits of being part of a programme that has their business and needs at heart. The CIC has core values that determine how it engages with members – values that recognise the importance of people in every transaction, moment and relationship.

"We want to inspire our contractors, encourage them to achieve what they want and help them remain optimistic about the future," says Basson. "We also want to instil a sense of confidence and self-belief by giving them the tools they need to maintain their business and their vision. This is then cemented by an authentic human and warm engagement with our contractors."

The CIC is very easy to join and manage. In under 30 minutes, contractors are registered and ready to go, immediately accessing the benefits of the programme. Contractors receive R500 for every 20 meters installed in the form of a voucher they can redeem at their preferred wholesaler.



"The CIC not only offers tangible, financial rewards for hard work and loyalty, but it comes with extra features that make it worth your while," concludes Basson. "We are well on our way to creating the largest installer database in the country, and we

will continue to refine and shape our services to ensure that every one of our contractors feels that they are part of a family. A trusted family."

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After diversity, maximum demand

One of the great mysteries is how the designers of data centres design what is constructed. I will give you an idea of my confusion by referring to another topic – the design of electrical reticulation for residential townships. Beginning with the house, if medium sized it will have a geyser, stove, lights, television and various appliances. If they are all switched on together, then it is probable that they will draw a total of about 15 amps. To allow for very cold days, we will make that about 25 amps or 5.5 kVA (where amps x volts = kVA). If there are 20 houses in a road, then the peak that could be drawn could be 110 kVA. Following this logic, if there are 300 houses in total, the peak supply would be $300 \times 5.5 \text{ kVA} = 1650 \text{ kVA}$.

However, this is not the case; it is never going to happen that all 300 houses draw the same power of the same magnitude at the same time. In fact, not even the 20 houses in the road will draw the same peak power at the same time. In a worst-case scenario, 50% of the houses in a road will draw the same peak power at the same time. Thus, the peak drawn by 20 houses will be half of 110 kVA, or 55 kVA. The value of half, 0.5, is known as the 'diversity factor'. For a group of 300 houses the diversity

factor is about 0.2 so the 300 houses will draw, most times, a maximum of 330 kVA. The supply transformer can generally take a 10% overload for one hour, so there is some margin.

Returning to the data centre, it seems to me that the calculations go like this: Each module in a rack draws 1 kW, peak demand. Thus, each rack draws 10 kW (ten modules in a rack). Thus 50 racks draw 500 kW. Thus, it seems that no diversity is applied to the power consumed by the data racks. Furthermore, using the assumption that each data rack draws 100% load, all the time, the computer air conditioning units are sized for a 100% heat load and the UPS similarly so. The standby generator is also sized on this basis, only it will normally be rated at 120% of expected load, so for a 500 kW load it will be rated at about 600 kVA.

I am going to stick my neck out and say that this is all incorrect. It is quite easy to determine what load is being drawn by the data centre by checking what load is being supplied by the UPS (normally in line and supplying the data racks). I have never, in 20 years, seen a UPS supplying full individual load to a group of data racks. I can, however, quite easily see

the logic behind oversizing everything (even done unconsciously). Data centres are supposed to be available 24/7, and if they were to fail due to an inadequate supply, the situation would be very dire indeed. Other aspects are also a puzzle. There is, as we all know, a growing movement to cloud computing.

This means that at least some of the load will no longer be consumed on site at a data centre but at a cloud location. This, in turn, may mean that the data centre load decreases or remains the same with a greater data handling capacity. In any event, it will not change.

In general, all data suppliers have a (normally rigid) specification as to what is required by the power supply design. Data suppliers have a very high opinion of their knowledge and do not tolerate it being questioned. The only downside of having a power supply, and thus a generator which is oversized for the load, is that, after a few years, carbon will build up on the pistons and the pistons may eventually burn through. Oddly, if the generator is placed under load relatively frequently, this effect is delayed. Accordingly, we have to thank Eskom for the power interruptions which are inadvertently helping. Yay!

The full cable sourcing solution

Over 54 years ago, the innovation and drive of three young entrepreneurs lead to the birth of a major industry player.

Alvern Cables is a privately owned business that manufactures a variety of low to medium voltage electrical cables for domestic and industrial use. The company was established in 1967 essentially to manufacture and supply cables to its then parent company S.A. Signals. The three individuals mentioned at the outset, A.E. Hendey, V. Higham and P.G. Wiggin were all contracted to the railways as electricians in the signalling division. Difficult supply and poor quality of cables led them to manufacture their own range which grew rapidly until the inevitable happened and the signalling side was taken over by the cable section. Today, Alvern Cables is one of the leading cable manufacturers

in South Africa and the largest privately owned operation in the industry. Today this venture has turned into a factory with over 200 employees.

Alvern Cables has found its niche in the automotive, domestic, flexible, equipment, power, and control sectors of the industry. Even within the limited sectors specified one cannot manufacture the complete range required, however, the company believe its range is comprehensive and tailor made to suit the harsh African environment. Alvern Cables consistently produces high quality and innovative products all subject to stringent tests and specifications. They have a fully equipped SABS accredited laboratory with the latest equipment to ensure all requirements are met and exceeded. Products are tested at each phase of production, recorded and labelled for complete traceability in accord

with ISO 9001 requirements. The Alvern Cables manufacturing plant is situated in Germiston.

The company distribute from Germiston, Durban, Cape Town and Port Elizabeth ensuring that its distribution network covers South Africa extensively as well as Sub-Saharan Africa and East Africa. Alvern Cables have also established a distribution division tasked with outsourcing cables it is unable to manufacture, making the purchasing experience easier and safer for its customers as all products can be made available from one location.

Alvern Cables prides itself in producing a quality product at a competitive price as well as strong customer relationships which has been made evident by its rapid growth and success in the industry.

Enquiries: www.alverncables.co.za

Download your free guide to solar photovoltaic cable testing



Did you know that solar cables should be particularly resistant and durable, as they are constantly exposed to ultraviolet light and outdoor weathering? Assessing how the cable will react in such extreme conditions is a key factor to consider when planning your solar application projects.

Download your free solar cable testing guide, and learn about:

- The role of cables in solar applications.
- International industry standards.
- The factors that can cause faults and endanger the power production of solar applications.
- How third-party testing can help you safeguard the success of your projects.

Download the guide at www.bassec.org.uk

Optimal performance in rugged conditions with a portable label printer



The BMP41 Label printer from Brady is a rugged, portable solution that gives you the versatility to create die-cut or continuous labels up to 25 mm wide, anywhere, anytime. Whether you are faced with your jobs for the day or one-off tasks, the BMP41 printer is the one device for all your labelling jobs – from wire marking and general ID to multi-area labels such as patch panel, terminal block and more.

This printer comes with a free Brady WorkStation Basic Design Software Suite, enabling you to immediately start designing professional labels.

Features and benefits:

- A new industrial look and feel
- Includes a large, clear window to show installed cartridge.
- Features textured rubber overmolding for better grip while handling.
- Enhanced exterior coloring for jobsite

visibility.

- Withstands 1.2 m drops for added durability.

Easy to use

- A reliable solution for detailed work.
- Provides convenient label creation with a variety of label type options.
- Facilitates label creation with QWERTY keypad or Brady Workstation software.
- Quickly completes batch label print jobs with ease.
- Features a long-life NiMH rechargeable battery.
- Allows user upgradeable firmware.
- Accessories for increased ease of use.

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- Use for a variety of applications.
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- Provides labeling at the point of application.
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Cable, components and critical space exploration



As NASA's Mars Perseverance rover began exploring its new planetary home after landing on 18 February 2021, it's operating with the world's most advanced technology while being equipped with Ty-Rap™ cable ties from ABB, the same ties that are widely used on earth.

Found in buildings, subways, the deepest oceans and outer space, ABB's Ty-Rap cable ties are designed to withstand the demands of space flight and resist corrosion and radiation in the most extreme environments. NASA has integrated the same Ty-Rap cable ties, which are used in commercial applications worldwide, to fasten the rover's interior and exterior conduit and components and to secure research and lab equipment.

"Similar to how standard cable ties are a practical solution for use around the home to organise everything from indoor cords to outdoor lights, high-performance Ty-Rap cable ties connect and secure the rover's wires and equipment," said Matthias Heilmann, President of ABB Installation Products. "For nearly 50 years, these Ty-Rap cable ties have performed in the most intense conditions on earth and protected components from high impact elements and radical temperature changes in previous space expeditions."

The business known today as ABB Installation Products has provided products to the space program since 1973, and Ty-Rap cable ties are in continued use on the still active NASA Curiosity rover and were previously used on the twin Spirit and Opportunity rovers. Originally patented in 1958, standard Ty-Rap cable ties became known for their Grip of Steel locking device in business and household use. Since then, nearly 30 billion Ty-Rap cable ties have been produced – laid end-to-end, enough to stretch to the Moon and back more than a dozen times.

The Mars 2020 Perseverance Rover mission is part

of NASA's Mars Exploration Program, a long-term effort of robotic exploration of the Red Planet. The mission addresses high-priority science goals for Mars exploration, including key questions about the potential for life on Mars.

ABB has a long-standing relationship with NASA that began more than 30 years ago with optical sensor contributions to support experiments on the space shuttle. In November 2020, the company announced a contract for NASA's Jet Propulsion Laboratory that will see key technology from ABB and its partner Nüvü Camēras fly onboard the space telescope in 2025, on course to capture the first spaceborne images of planets outside our solar system. ABB is also a key supplier to the JPSS U.S. weather satellite series under NASA procurement. These weather satellites are critical pieces of hardware for operational or flagship U.S. space missions.

Part of its Electrification business area, ABB Installation Products Division, formerly Thomas & Betts, is a global leader in the design, manufacture and marketing of products used to manage the connection, protection and distribution of electrical power in industrial, construction and utility applications. With more than 200 000 products under more than 38 premium brand names, ABB Installation Products solutions can be found wherever electricity is used.

ABB is a technology leader that is driving the digital transformation of industries. With a history of innovation spanning more than 130 years, ABB has four customer-focused, globally leading businesses: Electrification, Industrial Automation, Motion, and Robotics & Discrete Automation, supported by the ABB Ability™ digital platform. ABB operates in more than 100 countries with about 144 000 employees.

Enquiries: www.abb.com

Beware: graphite coated cables



Aberdare Cables warns that 'graphite coated' and 'anti-electrolysis' cables are not simply standard cables with graphite spread onto the outer sheath. 'Graphite coated' cables are required to undergo a sheath integrity test at manufacture and are designed with material radial thicknesses specifically for that purpose. It should be noted that testing the sheath integrity at elevated voltage levels in excess of 5 kV dc on a cable not designed for that purpose will very likely cause serious damage to the cable.

This brief provides some background to the requirements and techniques applicable to this type of cable.

When to use anti-electrolysis graphite coated cables

When electric cables are to be installed in areas where the presence of ground currents is suspected or known to exist, it is important to ensure that these ground currents do not enter the electric cable.

The metallic elements in the cable (i.e., armour or lead sheath) would normally provide a lower impedance path than the ground. As a result, any holes in the outer sheath of the cable may allow these ground currents to flow in the lead or armour of the cable in preference to the ground. Currents flowing from the ground into the cable lead sheath or armour, and then exiting at some point further down the cable, may cause severe corrosion of the lead sheath or armour.

In order to guard against this danger, electric cable may be ordered with what is called an 'anti-electrolysis design'. Such cable is often referred to as a 'graphite coated' cable. (Note: not all graphite coated cables are necessarily of an anti-electrolysis design). Graphite coated Anti-electrolysis cables differ from standard cables in a number of respects:

The bedding and sheath are both designed to withstand voltage across itself, as well as normal mechanical considerations.

The bedding thickness on graphite coated cables is normally specified thicker (2 mm minimum) than the bedding thickness on standard

cables. The reason for the enhanced thickness is to increase the mechanical protection offered.

The sheath thickness on graphite coated cables is normally specified thicker (3 mm minimum) than the sheath thickness on standard cables. The reason for the enhanced thickness is to reduce the chances of the sheath being damaged by stone penetration or other damage likely to occur during installation.

As the name implies, graphite coated cables are coated with graphite.

This graphite coating is applied in order to allow the manufacturer to test the electrical integrity of the sheath while the cable is on the drum. Once the cable is installed underground, there is less need for the graphite,

because an outer electrode is provided by the ground in which the cable is buried.

During factory testing, a voltage of 10 kV dc is connected between the cable armour and the graphite layer. A voltage of 4 kV dc is applied in a separate test across the bedding, between the cable metallic screens and the cable armour.

The graphite ensures that the sheath voltage is applied evenly across the whole cable circumference and length. This voltage is maintained for one minute, and any leakage current is recorded. Leakage current is an indication that the sheath is damaged, and that current is flowing from the armour to the graphite through the damaged portions of the outer sheath or bedding.

Note: Graphite coated cable types of a non-Anti-Electrolysis design have standard bedding radial thicknesses and only undergo a voltage withstand test of the outer sheath in the factory.

Sheath integrity testing

It is important to note that this test cannot be carried out on energised cables. A sheath integrity test is normally carried out after installation, and sometimes at 6-month intervals thereafter. After installation, the cable armour is disconnected from earth at both ends, and a dc voltage of 5 kV is applied between the cable armour and the substation earth or an earth spike. (Depending on cable type, there is some danger of damage to the bedding, and caution should be exercised when carrying out such testing).

In order to prevent overvoltage to the bedding layer, all metallic layers under the bedding should be raised to the same voltage as the armour. Connecting the copper tapes of XLPE cables or the lead sheath on PILC cables to the armour, may achieve this. After applying the dc voltage, the leakage current flowing through the outer sheath is recorded. (Note: The graphite coating must be cleaned off the outer sheath for a distance of +300 mm from both cable ends in order to prevent tracking).


When a sheath integrity test is to be carried out on an already installed cable, the precautions above must be observed, i.e., the cable must be de-energised, and the armour and termination earths must be disconnected. After making the necessary connections as described above, the voltage of 5 kV dc may be applied. The leakage current is again recorded, and the reading can be compared with the original reading taken after installation. Any major current leakage, or an increase in the value recorded, is an indication that the sheath has been punctured. Fault location and repair to the outer sheath must then be carried out as soon as possible to stop damage to the lead sheath or armour layer.

If a 10 kV sheath integrity test is carried out on the outer sheath of a standard cable, irrespective of whether it is coated with graphite or not, it will most likely fail. (i.e., the outer sheath will be punctured). Not only will it fail, but the applied voltage will in all likelihood burn holes through the standard PVC sheath, and portions of cable may even catch fire. Note that these failures may occur, irrespective of whether graphite is coated onto the cable or not.

Clearly this is not an acceptable situation, especially where anti-electrolysis graphite coated cable was specified because of known ground currents.

NB: It is important to completely remove the graphite from cable ends to avoid contamination during jointing and terminating.

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Innovative gel-filled cable joints for reliable cable connections

From HellermannTyton, Relicon gel-filled cable joints for connecting cables above and below ground consist of a robust shell and flexible Relicon gel. The gel-filled cable joints meet the highest electrical engineering standards and offer mechanical protection, insulation and sealing in one easy step.

HellermannTyton offers gel-filled cable joints in a wide range of sizes covering the technical requirements of all common cable cross sections.

The optimal gel technology for your application

Relicon Religel is a flexible two-component silicone gel that can be easily applied in individual quantities. It has superb insulating properties, good chemical resistance and excellent resistance to moisture. Relicon Reliseal gel cable joints are designed for reliability and robustness under the toughest conditions. They are tested according to EN 60529:1991 and achieve protection class IP68 (waterproof to 10 m). Ready-to-use out of the box, installation is quick and easy.

Relicon Relilight gel cable joints, compact dimensions, integrated strain relief and IP68 safety class make it an ideal product for reliably connecting and insulating cables in confined spaces and under wet or dusty conditions. RELICON Relilight is tested to EN 60998-2-1:2004. It is resistant to ageing and weathering and withstands temperatures from -30 to +130 °C.

Relicon Relifix gel cable joints are suitable for cable connections indoors, outdoors and in conduits. They consist of a robust polypropylene sleeve pre-filled with Relicon gel. Relifix products comply with the highest electrical engineering requirements and provide mechanical protection and insulation in a single work step. The products comply with the major European standards EN 50393 (corresponding to DIN VDE 0278).

Typical applications include encapsulating electronic components or electrical connections subject to damp, humid or wet conditions. Mixing the non-toxic transparent resin and green-coloured hardener (A and B components at a ratio of 1:1) is simple and safe. The material's excellent flow properties make it easy to pour. Religel cures fast and effective protection against moisture, dust and mechanical stress is achieved in less than ten minutes potting time.

Silicone-free hydrocarbon resins

For applications where silicone is undesirable, or where saltwater resistance is required, HellermannTyton also offers two-component non-toxic transparent gel products based on hydrocarbon resins:

- Relicon KH 67 (yellow translucent) is especially suitable for use with junction boxes in the low-voltage range, located in a humid area or in the ground. After curing, RELICON is characterised by its excellent resistance to moisture and very good insulating properties as well as a good chemical resistance. It is particularly suitable for filling of junction boxes.
- Relicon KH 100 (orange translucent) is supplied in a 250 ml cartridge. It is suitable for use with junction boxes in the low-voltage range, located in humid areas or in the ground. After curing, Relicon KH 100 is characterised by its excellent resistance to moisture and very good insulating properties as well as good chemical resistance. The supplied nozzle makes it easier to fill junction boxes in tight spaces.

Relicon Reliseal gel-filled cable joints: for the toughest demands

Relicon Reliseal gel cable joints are secure and robust partners for the most extreme conditions. The straight-through joints with a protection class of IP68 consist of a solid polypropylene shell (PP) filled with Relicon gel. These gel-filled cable joints are suitable for jointing on polymeric cables and wires made of PVC, XLPE, PE, EPR, etc. Relicon Reliseal fulfils the highest requirements for electrical installations and offers mechanical protection, insulation and sealing in one work step. Installers save time and require no special installation tools.

Suitable for application in low-voltage electrical networks, underground, submerged, outdoors, indoors and in wiring ducts to repair damaged cable exposed to water or vibration.

Relicon Relilight gel-filled cable joints: the compact protector

Relicon Relilight joint sets are specially designed for lighting installations, with a specific focus on LED lighting. They are tested according to DIN EN 60998-2-1:2004 and achieve the IP68 protection class. The sleeves are flame retardant according to UL94 V0. Depending on the model and connector type, Relilight is suitable for straight-through and branch Connections and for jointing on polymeric cables and wires made of PVC, XLPE, PE, EPR etc. The silicone-based Relicon gel pre-filled in the sleeves provides insulation, sealing and mechanical protection in one step and reduces the total cost of installation. Ideal for application in low-voltage networks, for outdoor lighting installations, connections underground, submerged, outdoors, indoors and in wiring ducts.

Relicon Relifix gel-filled cable joints: the universal sleeve

Relicon Relifix is quick and easy to install. The sleeves are provided with a film hinge and are made from thick-walled and impact resistant polypropylene (PP). The RELICON gel in the shells insulates and seals the connection entirely. Depending on the type of connector, Relifix can be used universally for straight-through and/or branch joints on polymeric cables and wires made of PVC, XLPE, PE, EPR etc.

For application in low-voltage networks underground, submerged (to 1.3 m), outdoors, indoors and in wiring ducts. A separate strain relief accessory is available where required, or alternatively, Reliseal or Relilight can be installed.

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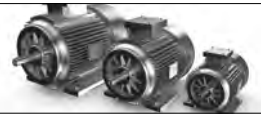
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Magnet Group
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MCE Electric
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CONTROLS FOR MOTOR APPLICATIONS

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ARB Electrical Wholesalers
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Bellco
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DM Agencies
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Edison Lebone
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Electrahertz
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MCE Electric
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Mimic Components
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Phambili
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Schneider Electric South Africa
Full range of cabinets for motor applications

Siemens
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Full range of steel enclosures

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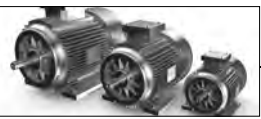


ABB urges greater adoption of high-efficiency motors and drives to combat climate change

In a new white paper, ABB reveals the potential for significant energy-efficiency improvements in industry and infrastructure, enabled by the latest and most high-efficiency motors and variable-speed drives. ABB calls on governments and industry to accelerate adoption of the technology to help combat climate change.

According to the International Energy Agency (IEA), industry accounts for 37 percent of global energy use and some 30 percent of global energy is consumed in buildings.

While mostly hidden from public view, electric motors – and the variable-speed drives which optimise their operation – are embedded in almost every built environment. They power a vast range of applications fundamental to our modern way of life, from industrial pumps, fans and conveyors for manufacturing and propulsion systems for transportation to compressors for electrical appliances and heating, ventilation and air conditioning systems in buildings.

Motor and drive technologies have seen exceptionally rapid advancement in the past decade, with today's innovative designs delivering remarkable energy efficiencies. However, a significant number of industrial electric motor-driven systems in operation today – in the region of 300-million globally – are inefficient or consume much more power than required, resulting in monumental energy wastage.

Independent research estimates that if these systems were replaced with optimised, the gains to be realised could reduce global electricity consumption by up to 10 percent. In turn, this would account for more than 40 percent of the reduction in greenhouse gas emissions needed to meet the 2040 climate goals established by the Paris Agreement.

"Industrial energy efficiency, more than any other challenge, has the single greatest capacity for combatting the climate emergency. It is essentially the world's invisible climate solution," said Morten Wierod, president ABB Motion. "For ABB, sustainability is a key part of our company's purpose and of the value that we create for all of

our stakeholders. By far the biggest impact we can have in reducing greenhouse gas emissions is through our leading technologies, which reduce energy usage in industry, buildings and transport."

Considerable steps have already been taken to support the uptake of electric vehicles and renewable energy sources. ABB believes it is time to do the same for an industrial technology that will deliver even greater benefits for the environment and the global economy.

"The importance of transitioning industries and infrastructure to these highly energy-efficient drives and motors to play their part in a more sustainable society cannot be overstated," continued Wierod. "With 45 percent of the world's electricity used to power electric motors in buildings and industrial applications, investment in upgrading them will yield outsized rewards in terms of efficiency."

ABB frequently assesses the net impact of its own installed high-efficiency motors and drives on global energy efficiency. In 2020, it enabled 198 terawatt-hours of electricity savings – more than half the UK's annual consumption. By 2023, it is estimated that ABB motors and drives will enable customers globally to save an additional 78 terawatt-hours of electricity per year, almost as much as the annual consumption of Belgium, Finland or the Philippines, and more than the total annual consumption of Chile.

Regulatory policies are among the main drivers of industrial investment in energy efficiency around the globe. While the European Union will be implementing its Ecodesign Regulation (EU 2019/1781) this year, which sets out stringent new requirements for an expanding range of energy-efficient motors, many countries have yet to take action.

To take advantage of the tremendous opportunities afforded by energy-efficient drives and motors to reduce greenhouse gas emissions, ABB says all stakeholders have a critical role to play:

Public decision makers and government regulators need to incentivise their rapid adoption.

Businesses, cities and countries need to be aware of both the cost



savings and environmental advantages, and be willing to make the investment.

Investors need to reallocate capital towards companies better prepared to address the climate risk.

"While our role at ABB is to always provide the most efficient technologies, products and services to our customers, and to continue to innovate for ever greater efficiency, that in itself is not enough. All stakeholders need to work together to bring about a holistic transformation in how we use energy. By acting and innovating together, we can keep critical services up and running while saving energy and combatting climate change," concludes Wierod.

ABB's white paper, Achieving the Paris Agreement: The Vital Role of High-Efficiency Motors and Drives in Reducing Energy Consumption, can be downloaded at www.energyefficiencymovement.com/en/whitepaper/

Enquiries: +27 (0)10 202 6001

Selecting the correct MCCB for motor protection

The selection of the moulded case circuit breaker, MCCB, feeder circuit on a motor goes way beyond that of simply selecting a product on current rating.

Smaller motors have been wired for direct on-line starting, DOL, and so the high starting current inrush will trip the MCCB during this time if not correctly chosen. There is also quite a variation on the motor characteristics between the manufacturers. This is especially so in recent times with high efficiency motors becoming highly popular. We need to also note there is a vast army of motors toiling away which come from a time this was not an issue.

Motors which have been refurbished by way of a rewind/repair will also not be as per original made specifications.

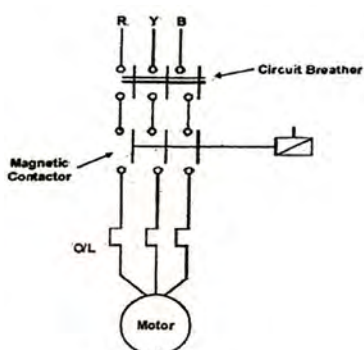
Star-Delta motor starting techniques which have been applied on the larger motors to reduce the inrush currents also do not escape the inrush issue.

Without going into details on the starting method itself where the reduced voltage, star connected, being applied to the motor is at some timed interval changed to full, delta connected, in order to reduce the inrush.

For that ever so brief moment between methods the voltage is removed and reapplied to a rotating motor. The motor is either being pulled into following the applied voltage or slowed to catch the next behind voltage. Being pulled to follow brings with a serious inrush current however brief. Winding rotation has some benefit if they can be changed.

One of the methods that can be used to reduce these types of inrushes is to have closed transition resistors which are suitable resistors which stay connected during the change over time. They are not very heavy duty as the change over is rather brief in any event. However, in the many years in the electrical industry I have yet to ever see these in action.

Motors should only be started according to their specifications, e.g., six starts per hour typically. So, approach your MCCB supplier for guidance on the correct selection. These may not always be 100% effective but at least some of the guesswork has been taken off the contractor if things go awry.



These charts have been built up during many years of both theory and practice by the manufacturers and often contain additional info on say the contactors that can be used. This is also true for when replacing a MCCB with either an alternative model/brand or when the replacement unit is not the same model being replaced.

MCCB's for drives

Electronic starter systems, Drives, have come a long way from the early versions and these days most if not all make use of variable frequencies to control the motor. Generally, some care is still required but having a MCCB at 20-25% rating above the motor full load current, FLC, should be good. However the current draw at the range of frequencies may have an effect on the MCCB by virtue of the technology employed.

Modern drives offer so much more than just starting by way of additional inbuilt protection that the MCCB is really downgraded to an isolation device.

Earth leakage types of MCCB's used for these applications may be more trouble than worth as the drive/frequencies may trigger nuisance tripping. It could be argued the risk of a problem from the MCCB to the drive is low for shorts/EL issues as it is housed within the DB zone under ideal conditions?

Technology: a subject all on its own

In brief, circuit breakers make use of three types of technology which require some thought as to what fits the situation best. Electronic types will require setting up to fully apply protection.

Notes: In summary, approach your MCB/MCCB supplier for their motor recommendations and keep these handy when applying circuit breakers in the field. It will save you time and earn respect from your customers!

By Kevin Flack

Kevin Flack has recently retired from industry and believes he still has valuable in-depth knowledge of the South African electrical landscape due to wide experiences gained in his 45+ years working career. He is keen to explore the training arena so that this can be passed on to the current youth so as to benefit their practical ability in the electrical field. In these trying COVID-19 times Flack can provide on-line training to keep your staff up to date on all aspects of circuit breaker deployment. Email kevin.flack@outlook.com

Thermal cameras get the job done right first time

The Fluke TiS60+, available through Comtest, comes with patented Fluke IR-Fusion technology which allows users to see things that are invisible to the eye and reveal problems that cannot be detected with other tools. The unit establishes a baseline for equipment and is simple enough for the entire team to use in order to detect temperature differences from further away. Fluke TiS60+ further boosts team performance with an impressive image resolution of 320 x 240. The infrared images taken with the TiS60+ capture smaller temperature differences from further away. So, if users are new to thermal imaging, or if the camera is being used by a team with varying levels of thermal imaging experience, the TiS60+ offers easy-to-use fixed focus. Some of the key features of the TiS60+ are:

- 320 x 240 resolution for clarity and image details that are crucial for a good result.
- A 9 cm (3.5 inch) LCD screen allows for easy 'in-field' issue recognition.
- Fixed focus means the Fluke TiS60+ is easy to use: just point and shoot.
- Temperature: up to 400°C can be measured and this covers most application variations.
- One-handed image capture, 'review' and 'save' capabilities.

See the problem and the location in one image with IR-Fusion technology

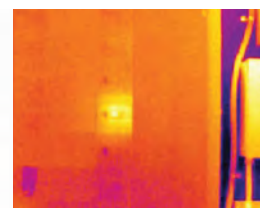
IR-Fusion technology, patented by the Fluke Corporation, automatically captures a digital visible light image at the same time as an infrared image. The camera blends the two images together, pixel for pixel, in a single display. Users can then view the image in full infrared, full visible light or at several degrees of blending in-between. The location of an infrared target can be precisely identified even if the infrared contrast is low and there is very little structure in the infrared image.

Fluke's TiS60+ thermal camera is compatible with Fluke Connect with its modern visual design and intuitive navigation, making it easier to learn and easier to work faster. Simplified work flows and reporting, as well as better report templates, are all part of Fluke Connect's powerful, easy-to-use software.

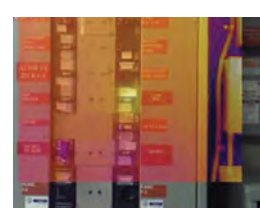
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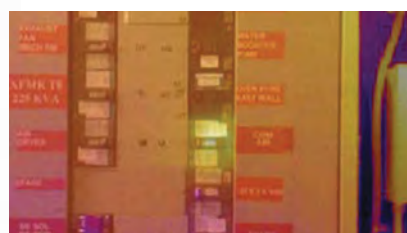
The new Fluke TiS60+ thermal camera.



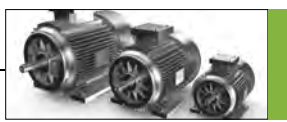
Full infrared image.



50% blending, picture-in-picture mode.



50% blending.



WEG takes soft-starters to next level with SSW900 range

The new WEG SSW900 soft-starters are the ideal choice for complete motor control and protection. These units allow quick and simple access to application information and configuration settings in any installation throughout a wide range of industrial segments where a three-phase induction motor needs to be controlled.

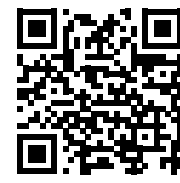
With its well-structured menu interface, the WEG SSW900 line gives users a new level of interactivity, including Bluetooth connectivity. These soft-starters provide event logs with dates and times, as well as a setup and programming assistance. The built-in bypass extends the lifespan of the units, optimising space and reducing heat dissipation inside electric panels. This built-in bypass functionality also extends throughout the WEG soft starter product range, up to 1400 Amps.

By allowing the smooth acceleration and deceleration of motors by controlling the voltage, soft-starters greatly reduce mechanical stresses on couplings and transmission devices during the start-up of a motor. In pumping applications, the smart control prevents water hammer and pressure overshoots in hydraulic piping.

Available from Zest WEG and its network of branches and value-added resellers in current ranges from 10 A to 1400 A – and for supply voltages from 220 V to 575 V AC – the WEG SSW900 soft-starters can operate at ambient temperatures of up to 55°C without current derating. They can substitute direct online starters or star-delta starters, bringing a range of benefits to the user's application. These include savings in electricity, as well as greater protection and increased durability of the electric motor.

Users also have access to diagnosis and fault history, and experience greater flexibility as the WEG SSW900 allows the installation of accessories in the application. Graphic monitoring and customisable main screens provide further convenience. The monitoring functionality is also extended by a USB connector available on all standard products. This provides access free of charge to product software available on www.weg.net.

Enquiries: www.zestweg.com



Watch the video by scanning the QR code



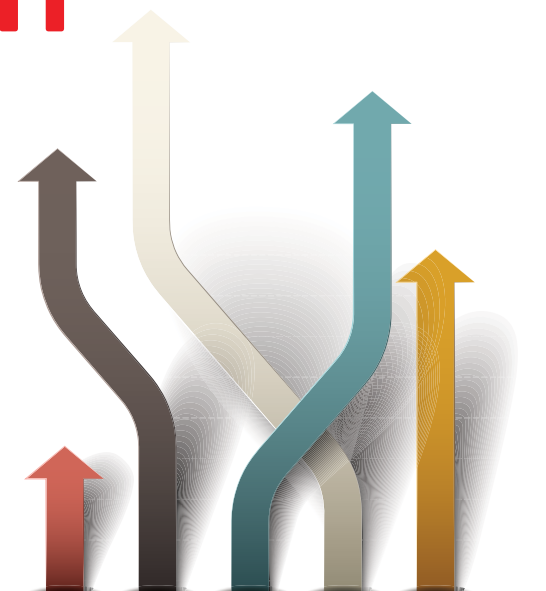
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ELECTRICAL NEWS

New lighting for better orientation and product presentation

LEDVANCE designed the new lighting concept for the Italian ski rental store Noleggio by Maestri at the Tonale Pass in Trentino. The individual combination of general, accent and effect lighting blends perfectly into the store ambience and presents skis, ski boots and ski clothing in the best possible way. Other lighting requirements included low energy consumption and maintenance as well as low operating costs.

The ease of installation and the efficiency offered by the combination of the products made them attractive lighting solution for the shop Noleggio by Maestri. Flexible Tracklight Spot and recessed Downlight Comfort with high energy savings and excellent colour rendering (CRI>90) are used in the showroom, shop windows. Rental space is equipped with 109 Tracklight Spots which could be rotated and swivelled according to the store layout. At the common areas, lockers and dressing rooms 38 Downlight Comfort were installed for general lighting to ensure easy orientation and optimum product presentation in the retail area.

The quality of the products and their brilliant light fulfilled the request of the customer to improve the appearance of the shop and increased the number

of customers and sales.

"The lighting solution provided by Ledvance have a very good impact on our store. It has completely changed the atmosphere and has enhanced the store with great visual effects in all exhibition areas. The sales have increased considerably," says Giordano Callegari, owner of Noleggio by Maestri.

Ledvance fulfilled the customer's demand through professionalism, know-how, excellent product quality and perfect service to his complete satisfaction. Thanks to the great adaptability due to rotatable and swivel mount joints, the interchangeable reflectors (15°, 24° and 38°) and various luminous flux values (1 750 lm to 4 200 lm), the Tracklight Spot is the best solution for lighting up shops and shelves to direct the customer's attention to the merchandise.

The excellent quality of light with CRI>90 and antiglare properties bring out the best in merchandise and colours. The modern durable LED technology provides high energy efficiency, low maintenance and low operating costs.

Enquiries: www.ledvance.com



Revolution of the automotive lamp



OSRAM is the first manufacturer to offer approved LED-based automotive retrofit lamps for the German market. This development is an absolute novelty, as there have been no legal LED replacement lamps for headlight applications until now. With its new product, the number 1 company in automotive lighting is the first supplier to meet the strict approval regulations. "Road approval is an important step that we have been working towards for years. With our LED lamps, drivers can upgrade their halogen lighting to the latest state-of-the-art products legally, easily and cost-effectively," says Hans-Joachim Schwabe, CEO of Osram Automotive. With Osram Night Breaker LEDs, drivers benefit from significantly improved vision and visibility on the roads.

The LED began its triumphal march into full headlights many years ago, but only in new cars, which is often considered standard today. With the new Osram Night Breaker LED, a manufacturer is now offering approved LED replacement lamps for halogen front headlights in used cars for the first time ever.

The Night Breaker LED H7 from Osram is the first LED retrofit lamp to pass the extensive test procedures of TÜV Süd, making it a legal replacement for H7 halogen lamps in tested vehicle models. This is confirmed by the Ger-

man Federal Motor Transport Authority with the granting of the road approval. Currently, the approval covers low-beam light found in many common vehicle models that are registered in Germany. These include popular models such as the BMW 2 Series, Audi A3 and A4 or Ford Mondeo. The number of vehicles is constantly being expanded through ongoing tests and approval procedures.

Brighter, safer, better

The new Night Breaker LED is up to three times brighter than the minimum legal requirements and is comparable in colour to daylight. The lamp creates strong contrasts and a long range. Thanks to LED technology, the lamp shines up to five times longer than a comparable halogen version, requires less frequent replacement and consumes less energy. Lamps can be changed from halogen to Osram LED without any remodeling measures and with a certain amount of expertise. With a recommended retail price of 129,99 euros per set, they are a cost-effective retrofit alternative to LED headlight systems.

Enquiries: www.osram-group.com

IESSA presents online course on exterior lighting

The IESSA Development Committee invites you to attend its online course on Module 3: Exterior Lighting Course on 20th and 21st April 2021 to be held online via Zoom Webinar Platform. The closing date for the submission of registration forms is the 9th April 2021.

The course will be presented by André Blignaut and will cover the following topics:

- Luminaires for exterior lighting.
- Guide on the limitation of the effects of obtrusive light from outdoor lighting installations.
- Artificial lighting of exterior areas for work and safety.
- The lighting of public thoroughfares/The lighting of certain specific areas of streets and highways.
- Exterior security lighting.
- Exterior Lighting Standards SANS 10389-1, 2 & 3, SANS 10098-1 & 2.
- Sport lighting.

Online webinar registration starts at 8am and the course will start promptly at 9am and end at 5pm on both days. The examination is set for the last course day, from 2-5pm. Failure to write and submit the examination shall result in the delegate not receiving a certificate of competence.

The lighting industry of South Africa is represented by the Illumination Engineering Society of South Africa (IESSA). IESSA represents South African internationally and thereby acts as the National Committee of the CIE (Commission International De L'Eclairage). South African Experts on various topics in the lighting technology field serve on the CIE international committees responsible for the development of standards for the different aspects of illumination.

Enquiries: info@iessa.org.za

The legal requirements of emergency exit signs



Over the last few years, Spazio Lighting have become aware that there is some confusion in the South African market on the legal requirements of LED emergency exit signs to be used in the built environment. This confusion is often generated and caused by the discrepancy between what is required by the fire building inspector in order to deem a building safe, and the South African law on emergency exit signs for buildings.

- Emergency exit signs can be considered as:
- Luminaires.
- Exit signs.

Due to these two differentiating factors or characteristics, all emer-

gency exit signs must:

Have an LOA (Letter of Authority) based on IEC 60598. IEC is the standards set out by the International Electrotechnical Commission. In the case of an IEC 60598 it measures the classification, marking, mechanical construction, electrical construction and photobiological safety of a luminaire.

A positive test report based on the building standards called SANS 1464-22 which specifies the safety requirements of emergency light luminaires.

It has to be noted that the testing that needs to be done in order to issue an LOA based on the IEC 60598 cannot be produced in South Africa, seeing as the SABS does not currently have the facility to test for blue ray radiation of the LED chips built into the emergency exit signs.

In spite of this, some manufacturers affix the SABS mark of approval to their emergency exit signs, but in effect, this mark is completely irrelevant seeing as it does not indicate that the product has been tested according to IEC 60598 and SANS 1464-22. In other words, the SABS mark of approval on any LED light fitting sold in South Africa is irrelevant seeing as no blue ray radiation testing could have been done.

Only a valid LOA based on the IEC 60598, accompanied by a SANS 1464-22 test report, in the case of emergency exit signs, can legally validate the compliance of the product according to the South African legal requirements.

When purchasing an emergency exit sign, be sure to request the IEC 60598 and SANS 1464-22 test report from the supplier in order to ensure that the emergency LED fitting you are purchasing meets all the legal requirements.

All Spazio Lighting's emergency lighting and exit signs have the necessary LOAs and test reports in place and are fully compliant in terms of the South African law for emergency LED lighting.

Enquiries: www.spaziolighting.com

LED Retrofit for Hout Bay Harbour

BEKA Schröder recently supplied the LED lighting solution for Hout Bay Harbour. Hout Bay is situated in the Western Cape province of South Africa, in a valley on the Atlantic seaboard of the Cape Peninsula, twenty kilometres south of Cape Town. The previous HID installation was replaced with an LED lighting solution and installed on glass fibre reinforced polyester (GRP) poles.

The LEDLUME XP 1 high-performance LED luminaire was chosen for its marine grade, high-pressure die-cast aluminium luminaire housing, and the 100 000 hours lifetime of the LEDs (L95B10). This criteria was especially important due to the high-corrosive environment in which the luminaires are installed.

BEKA Schröder's GRP pole, the BEKAPOLE, is non-corrosive, maintenance-free, light weight, vandal-resistant and sustainable. Over time, it will outlast wood, concrete, steel and aluminium under similar climatic conditions. BEKA Schröder's GRP poles have been installed in Hout Bay Harbour for

over ten years and did not need to be replaced as they are still in perfect working order.

The South African designed and manufactured LEDLUME XP range, comprising of four sizes, offers optimised photometrical performance with a minimum total cost of ownership. It assists to generate energy savings, improve lighting levels and reduce maintenance costs. The great variety of high-performance optics optimises the photometric distribution for each specific application to achieve minimum energy consumption.

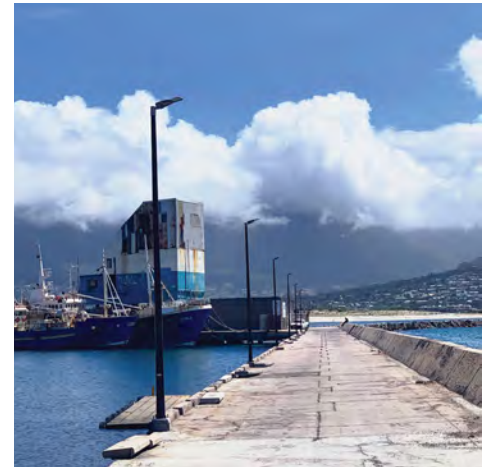
The LEDLUME XP range takes advantage of the latest photometric innovations. It uses the new LensoFlex®4 photometric engine, which has

been developed around the ideas of performance, compactness, versatility and standardisation.

The LEDLUME XP offers flexible combinations of LED modules, a choice of currents and dimming options to further maximise energy savings and provide the most cost-effective solution.

BEKA Schröder locally develops and manufactures energy-efficient LED lighting products, designed and suitable for local conditions. The company are proud to be associated with CSM Engineering in providing a successful streetlighting solution for this project.

Enquiries: www.beka-schreder.co.za



5 reasons to invest in quality outdoor lighting

Appearance

Outdoor lighting makes a home and garden look better. A strategically lit exterior and garden enhances a home's appearance at night, with decorative fixtures such as outdoor lamps and pendants adding stylish flair. Well-thought-out landscape lighting can be used to highlight a home's architectural features, showcase beautiful flower gardens, or light up trees and fountains.

Functionality

Gardens and outdoor entertainment area should not just be used during the day. We live in a country with a generally mild year-round climate, making outdoor living possible both during the day and at night. When a garden and entertainment or patio area is well-lit you can use it long after the sun goes down. Floodlights offer a substantial amount of general illumination and can be used to brighten up portions of the garden such as the pool or braai area.

Security

Outdoor lighting plays an important role in protecting a home from unwanted intruders. A home immediately becomes less of a target when it is sufficiently illuminated at night because there are no dark spots for criminals to hide in. When installing lighting for security, do not forget about the sides of the house too. You should ideally walk the perimeter of a property and make a note of any dark corners where intruders might go unnoticed. Floodlights that are motion-activated or set on timers make for ideal security lighting, especially at the entrance of a home as this will deter would-be intruders as they approach your property.

Physical safety

Navigating the exterior of a home in the dark is dangerous and can lead serious injury. Sharp edges, stairs, drop-offs, and tripping hazards are all difficult to avoid when you cannot see them clearly. By illuminating exterior areas such as pathways, staircases, and pool areas you make them visible to those using them and therefore prevent possible injury. It's especially important to illuminate the entrance to a home so that guests can identify a house number, park their car, and walk up to the front door with ease.

Increase property value

Outdoor lighting increases property value and will get an immediate return on investment. In fact, it has been listed by a large percentage of potential home buyers as an essential quality for their ideal home. Investing in quality outdoor lighting showcases the best features of a home and increases its curb appeal, making it an attractive option when it goes on the market.

Enquiries: radiant.co.za





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The importance of planning

I must confess that it has taken quite some time to get used to the roller-coaster ride that the COVID-19 situation has brought with it. From lockdown level 1 to lockdown level 3 to adjusted lockdown level 3 then back to level 1, and it will probably be back to lockdown level 3 again before the Easter long weekend and school holidays (of course, that is if they have them!). And then there is the logical threat of a third wave, according to the experts.

Business has not escaped the effect either, particularly if we cast our minds back to how it was before the pandemic.

A significant effect has been the need to adopt software and technologies to carry out business communication with branches, staff working remotely and, of course, with customers and suppliers. Zoom, Microsoft Teams, ClickMeeting and other similar platforms are now in daily use.

However, they have brought with them the regular frustration of not being able to contact people, sometimes for days, because of the annoying message sometimes received on one's smartphone: "Can't talk now, in a meeting".

Another negative effect of this new communication phenomenon is that, when

you try to make contact by email, it ends up in an overloaded inbox which frequently means that emails are not seen or answered for days, sometimes never.

At BHA, we have used online e-learning and communication technology since 2013. We also use our software for project meetings, especially when the client and project managers are far beyond the borders of South Africa. Before arranging the online meeting, we always determine what needs discussion, then we list the discussion points, compile an agenda, and determine the time needed and finally,

SHEDDING LIGHT WITH PHILIP HAMMOND

when done, we arrange the online meeting. All participants in the meeting are then able to plan around the scheduled meeting for other meetings or activities both before and after the meeting. We always ensure that we only request time with a small buffer that is needed and never arrange open-ended meetings.

We have all heard the expression, "time is money". It was included in a Benjamin Franklin publication which was based on an essay that appeared in a book by George Fisher, published in July 1748, titled *The Instructor: Young Man's Best Companion*, which was a popular manual of English grammar at that time, and in other useful content for young men who were entering business. Benjamin Franklin adopted some of the content to suit Americans at that time, and titled it *The American Instructor*, in which he wrote, "Remember that time is money, one must act and therefore use one's time, which is not finite". This led to the expression "there is no time to lose".

If we remember that expression, "time is money", we will manage our time better, particularly for any non-income/turnover generating meetings.

At BHA, we realised many years ago that we must be easily accessible for our students, at all reasonable times. When a student needs to ask a question or needs help with content, keeping them waiting could impact on their progress and ability to keep to their own personal study plan.

I remind students who start to fall behind their own study plans about that Benjamin Franklin's expression. The practise of time management goes together with another of Benjamin Franklin's expressions: "If you fail to plan, you are planning to fail".

I was long convinced by both expressions and consider these continuously when planning, including when planning meetings.

An excellent technique that I have found to be indispensable, is the use of mind-mapping. When planning any activity, whether it is budgeting, business planning, project planning, content for manuals for courses or webinar content, I always make use of a mind-map. Once I have the skeleton of the mind-map, it is easy to flesh out the additional points. It makes preparation flow with ease and speeds that process.

In my opinion, we have become obsessed with the need to use technology but have forgotten the art of good planning and time management.

I hope that this article proves to be useful or, at the very least, that it reminds readers that we should not forget the importance of good planning.

Enquiries: www.bhaschooloflighting.co.za



ABOUT PHILIP HAMMOND

Philip Hammond is the Director and Principal of BHA School of Lighting which offers a variety of courses from entry level Foundation Lighting right through to Advanced Diploma and Master Diploma in Illumination Engineering Courses. Other courses include Photometry, Lighting Economics, Relux Lighting Design Software courses, and more. Visit www.bhaschooloflighting.co.za



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800-950W ABS Hand dryer
250mm(w) x 480mm(h)



RHD8 06HD143SSTM

500W Stainless steel hand dryer
153mm(w) x 273mm(h)

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‘Countryside’ lighting for village-style retail centre

The Neighbourhood Square is a retail centre designed to become an energised hub of The Neighbourhood, a residential lifestyle estate located on a portion of the old Huddle Park Golf Course in Linksfield, Johannesburg.

Many large existing trees, which lined the greens on the old golf course, were positioned on the new site for the Neighbourhood Square. Respecting and accommodating these trees as a response to the natural heritage of the site-become a key design driver.

Early on the design team identified suitable trees to preserve, and the design was manipulated to create a shopping centre that felt like you were ‘meandering through the trees’. The simple linear architecture of the building was intended to allow the building to become the backdrop for the landscape. Seamless transition from the densely forested landscape to shopfront was emphasised by a column-free canopy to allow maximum exposure for the tenants’ shopfronts and to create a more engaging shopping environment.

The restaurant square and piazza form the community heart of not only the shopping centre but of the greater Neighbourhood precinct. The use of textures and planting emulate a traditional village square, creating a vibrant and interactive social space. Principles that are central in local retail design such as convenience, natural light and fresh air, access to outdoor seating in coffee shops and restaurants, have become increasingly important post-COVID-19. The distinct shopping environment of the Neighbourhood Square provides ample opportunity for outdoor social engagement and easy access to essential retail outlets e.g., Checkers, DisChem. The intention is to create a community orientated centre that reflects the vibrancy of the neighbourhood that it serves.

The lighting design at The Square creates a visually comfortable environment with an outdoor night-time feel reminiscent of the countryside. Light fittings were positioned and chosen to highlight the architectural and landscaping features, with glare, colour temperature and intensity influencing the decision-making.

The arched columns that line the walkway utilised Radiant Lighting Solution’s Shuttle double wall mounted light to create rhythmic pools of light along the walkway as well as soft indirect light from

the ceiling. This single element unifies the scheme at night and makes the centre visible from the road. Tree uplights (Shuttle trunion and Kevo) were used extensively throughout to light the existing Jacaranda trees that surround the site.

Malta bollards were used in the planters along the walkway edge to highlight the low-level indigenous planting as well as indicating ramps and stairs.

RLS supplied: Starr 2 recessed downlight with LED Lamp 5 W warm white 2700 K; Shuttle plinth mount 18 W 300 OK LED charcoal grey; Sputnik trunion mounted charcoal grey 32 W Wide Beam 2700 K with cowl with anti-glare baffle; Malta bollard plinth

mounted 16 W LED 3000 K Charcoal grey; Shuttle double wall mounted 36° Black c/w 2x18 W LED 3000 K and 500 mA Controller; Shuttle Trunion Mounted 36° Black; Kevo GU10 Spike mounted black; Argo indirect P/T clear acrylic diffuser mounted on modern stepped pole 4 m charcoal grey and Custom up and down post 2620 mm under canopy Shuttle frosted lens 2x24 W LED 3000 K.

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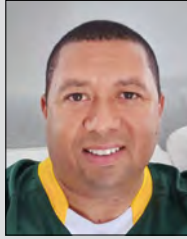
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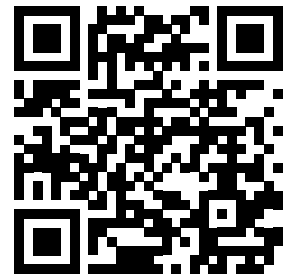
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MARCH SOLUTION

The poison from the punch came from the ice cubes. When the man drank the punch, the ice was fully frozen. Gradually, as the ice cubes melted, the poison was released into the punch.

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