

CED CONTINUES TO SHOW GROWTH



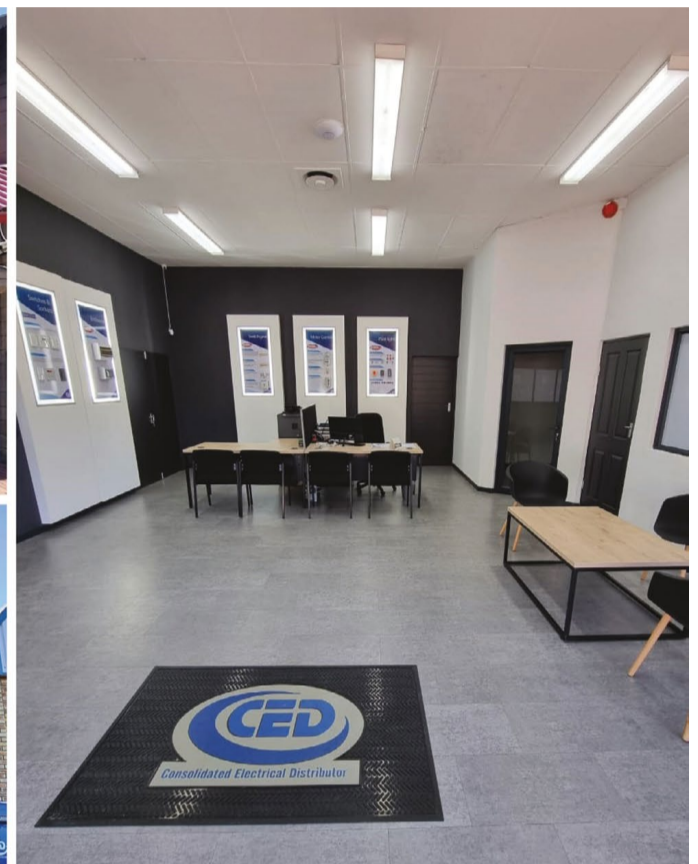
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Consolidated Electrical Distributor



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Due to increased demand in the major hubs of Cape Town and Durban and their respective outlying areas, Consolidated Electrical Distributor (CED) decided in 2022 that it was time to open standalone branches in those regions to ensure that sufficient stock holdings are always readily available.

CED serves South Africa's low voltage electrical industry, with a vision to become the benchmark of quality products and customer service. Expanding from humble beginnings in 2012, its portfolio now includes over 6000 fully compliant local and international products that are used across the domestic, commercial, and industrial sectors.

The Durban branch, which opened in November 2022, is located on North Coast Road just off the main highway, and the Cape Town branch, which went live this past January, can be found in Montague Gardens. Both branches feature a warehouse and office component as well as a physical showroom. "The branches have sufficient staffing in terms of warehouse, internal sales and external sales," explains Richard Egenrieder, CED general manager. "We focused on hiring the right staff who have experience in the low voltage sector, and both branch managers are well known in the regions and respected by the clients."

With products exceeding their expected growth, especially the Tosun Lux brand, Egenrieder sees it as testament to the company's decision to import economically viable brands at a quality which the market is looking for. "I grew up with the 'South African way' of service and support which seems to have been lost with a lot of suppliers, and I'm adamant to offer the kind of service which South Africans were once known for, ensuring that customers are kept up-to-date and not misled in terms of lead times. It takes a lot more work in the background, but I think that it is testament as to why we are growing as quickly as we are," he says. Yet this could be just the start as Egenrieder notes that future growth is "imminent".

New catalogue and new brands on the horizon

Along with the new branches, CED is also currently working on a new, comprehensive catalogue which will be available this coming July. "We have had a number of requests from our customers for an updated catalogue, and due to the fact that we are distributing multiple brands, it can sometimes be quite confusing with five or six different catalogues," he says. "So, what we're putting together is a compact, easy-to-use catalogue which will list the majority of the brands that we distribute and make it really simple for the likes of panel builders, OEMs and wholesalers to quickly identify a product and place an order with us." The catalogue will be available in both print and electronic versions, and the company's goal is to make its customer's buying practices a lot simpler.

Egenrieder has also been hard at work in terms of finding new brands that do not have a presence in South Africa, and the catalogue will be the perfect opportunity to announce these new partnerships.

Furthermore, CED has recently entered the renewable energy sector and offers a full complement of switchgear, including isolators, surge protection, indicator lights, fuses, fuse holders, battery fuse disconnectors, MC4 connectors and the like. "We are basically offering all the components excluding the panels," says Egenrieder. "More importantly it is a one brand solution, which is very rare in the renewable market at this current point in time."

In a very short period, CED has established itself as a strong player in the industry, and the current growth the company is experiencing is showing no signs of abating. With new branches, new brands and a new catalogue on the way, the company is living up to its vision of becoming the benchmark of quality products and customer service.

Enquiries: www.cedsa.co.za

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Voltex relaunches in Ballito

Voltex, South Africa's largest wholesaler and distributor of electrical and lighting related products, has embarked on a drive to update and, where necessary, relocate branches with the aim of improving existing customer relationships and drawing in new customers with a fresh and innovative shopping experience.

The launch of its latest revamped store took place at Voltex Ballito where various suppliers showcased their products and spread awareness of their exciting new offerings. The event was a successful one as customers were pleasantly surprised at the new look and feel of the store. Customers were exposed to a hands-on experience of state-of-the-art products assisted by trained and qualified sales staff. The product range has been carefully selected, particularly in the energy efficiency and lighting markets.

Voltex offers a wide variety of electrical products, switches and sockets, lighting to suit every taste, circuit breakers and smart products that can be connected to Wi-Fi and accessed remotely to make homes more energy efficient; all this was promoted at the store opening. Voltex Ballito showcased an extensive range of solar and backup solutions such as inverters, batteries and solar panels to reduce the impact of load shedding and to save on costs and electricity usage.



The company looks forward to welcoming customers into one of its Voltex branches soon.

Enquiries: www.voltex.co.za

Early detection of overheating cables solution now available

Schneider Electric has unveiled PowerLogic HeatTag, an innovative smart sensor for early detection of overheating of wire connections or cables that analyses switchboard gas and particles and provides alerts before smoke or insulator browning can occur.

PowerLogic HeatTag forms part of Schneider Electric's Continuous Thermal Monitoring solutions which reduce risk of electrical fires and unplanned electrical downtime by measuring temperature at critical connection points in MV (medium voltage) and LV (low voltage) electrical equipment and off gassing of electrical wiring.

Often, cable connections start to deteriorate due to improper tightening torque or constant vibrations over time. Deterioration can also occur because of damaged surfaces, due to corrosion, excessive pressure or friction.

These conditions can be exaggerated by frequent temperature cycling. Fluctuations between cold nights and hot days, or low and high current, cause increased and decreased connection tightness. This, in turn, contributes to loosening.

In any of the conditions noted above, a critical sequence of events can begin which see increasing electrical contact resistance inducing a rise in temperature that accelerates the damage. The result is a thermal runaway that leads to overheating wire connections and/or overheating cables.

Above 200°C, the insulation material begins to change colour. At approximately 300°C this transforms into cable smoke, melted insulation material or even fire. These conditions can be detected with a fire or smoke detector; however, at that point, the damage has already occurred in the electrical switchboard.

Enquiries: www.se.com



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AI expert claims plumbers and electricians will be last to get replaced by robots

With the growing reality of AI and bots entering the workforce, many are beginning to make predictions about when and how the dramatic changes will occur. The debate about robots replacing human labour has been raging for years, and it's no surprise that electricians are among those who are concerned about their job security.

The period of research and development efforts (R&D) for robots and artificial intelligence (AI) has been in full swing for the past decade. With the number of forecasts from industry leaders predicting a dramatic shift in the labour market in the next two decades which they believe will be brought on by AI and robots, there is a list of jobs which the experts are saying would remain relatively unaffected—at least for the time being.

The assembly and manufacturing sectors have seen the biggest impact so far, as mechanised labour is being employed more and more as a time-saving and cost-efficient option. Martin Ford, the author of the influential book *Rise of the Robots: Technology and the Threat of a Jobless Future*, recently delivered his strongest statement about the future of work:

“One area that is safe for people is the kind of job that requires lots of dexterity, hand-eye coordination and flexibility. Think about skilled trade jobs like a plumber or electrician.” He went on to add that nursing – due to the high amounts of human caring and empathy involved – in addition to some unspecified creative jobs (no doubt jobs in the visual arts which require a unique aesthetic approach) would also be safe.

Amidst these growing concerns, it has been the job of politicians to quiet the public's fears about an AI take-over and encourage the public at large, instead, to take a realistic, fair, and balanced approach to these changes, staying informed about the latest developments in the area. Tom Watson, co-chair of the Future of Work Commission – an organisation involved in answering questions related to “how the UK deals with the new technological revolution” – and Deputy of Britain's Labour Party, gave a reassuring statement on the subject: “Much has been written about the impact of technological change and the dystopian future we could all face as a result of the rise of the robots. It can sometimes feel like we are preparing for a world in which artificial intelligence, algorithms and automation, rather than human endeavour and hard work, will shape every aspect of our society and our economy. That sounds like a frightening prospect. But it needn't be.”

Robots in construction

Professor Lonny Simonian of the California Polytechnic State University spoke to NECA Live attendees about the

increasing use of robotics in construction. His 40-minute-long virtual session, titled, “Robots in Construction: Current Use and Outlook for the Future,” presented key research and findings from an ELECTRI International research project on the same topic. More specifically, Simonian discussed the short- and long-term impact that robots could have on the electrical industry.

“The focus of the research is to inform electrical contractors about the developments in robots in construction and to prepare you for their potential future deployment,” said Simonian. “They are in use currently, but reports show they are going to grow by a significant amount.”

Before diving into facts and figures, Simonian first clarified the term ‘robot,’ to the audience, based on IEEE's description. “As defined by the IEEE, a robot is an autonomous machine capable of sensing its environment, carrying out computations to make decisions, and performing actions in the real world,” he explained.

Next, he detailed the different robot market segments, including:

- Public (defense, security/surveillance, emergency response, public safety, resource management).
- Research and Education (k-12 education, colleges/universities, vocational training, research, exploration)
- Industrial (manufacturing, construction, oil and gas, mining and quarrying, agriculture)
- Commercial (health care and quality of life, utilities, transportation, warehouse distribution, wholesale and retail)

- Consumer (toy and hobby, home health care and/quality of life, social/entertainment, personal transport).

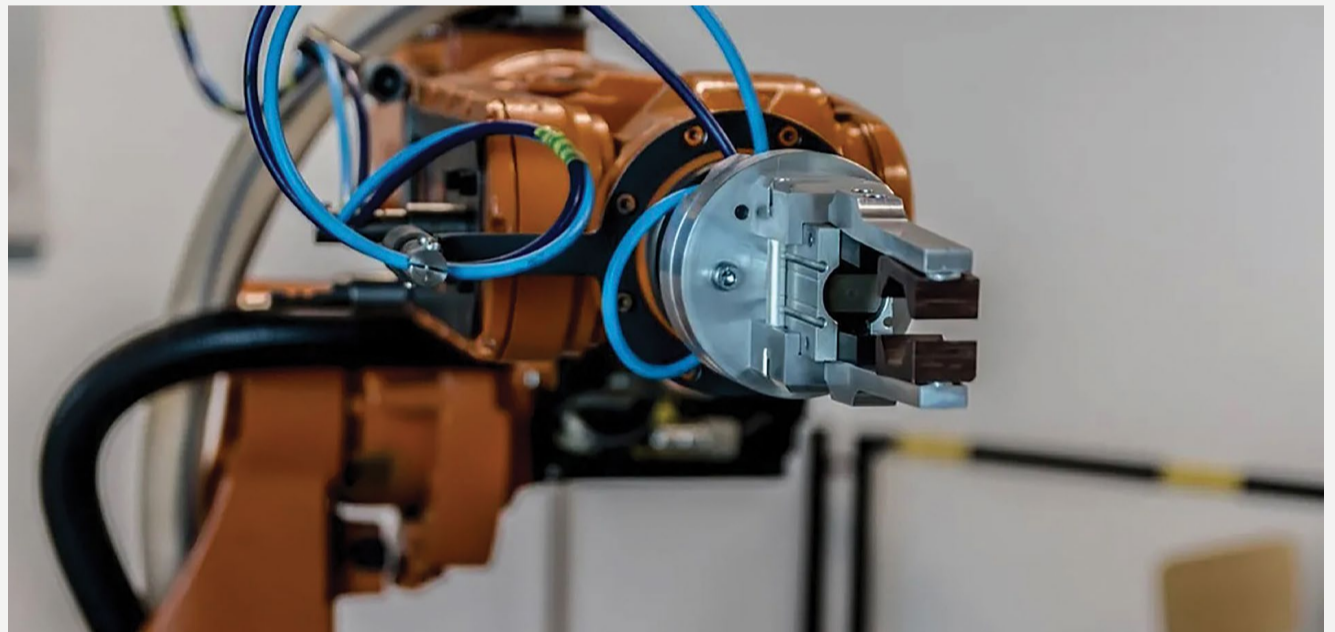
Taking a dive into findings from the ELECTRI International research project, Simonian listed 20 types of robots appropriate to use in construction, including robotic arm, 3D printing, layout, upper-body exoskeleton, snake, materials lift, vehicle, mobile platform, and more.

Simonian then went on to discuss growth projections for robots, citing that one study predicts the construction robotics market will grow from \$22.7 million in 2018 to \$226.0 million annually worldwide with more than 7 000 robots performing construction work by 2025. According to another study, the global market for construction-related robotics is predicted to reach \$470.61 million by the end of 2026 – a compound annual growth rate of 10.4%.

What exactly do these numbers mean for construction industry workers? Citing a third study, Simonian said that “as many as 2.7 million construction positions could be replaced by machines by 2057.” When it comes to the electrical industry in particular, the numbers sound pretty dismal. Specifically, there is automation potential in the workforce of about 42% for electricians. Carpenters and plumbers fare worse at 50%, and operating engineers could see a staggering 88% of their jobs replaced by robots.

“Keep in mind that 2057 is a long way off,” Simonian concluded. “In the immediate future, jobs will not be replaced by automation but rather supplemented by it. Drones capturing BIM information and data are a good example of this, as are autonomous robots performing laser scanning.”

Source: www.ecmweb.com



Are phones dangerous on a construction job site?

The short answer is yes. They definitely can be! While there are so many ways a phone can help craftsmen on site, phones can cause a lot of problems on the job.

There is no formal regulation from OSHA that prevents cell phone use on a construction jobsite, but organisations have publicly encouraged members to create policy and train their employees on the appropriate use of this technology in and around the jobsite. If your company doesn't have a policy around this matter, you may need some guidance on how it's best used. Here are a few ways that the phone is being used on a construction site:

Listening device

Not a good idea. Especially if you're listening while working. When someone's focused on their music or a podcast, they probably can't hear a colleague or manager that's asking them for help. And to be clear, OSHA has even gone so far to say that personal headphones and earbuds do not count as protective ear devices.

Apps

For the most part, we think apps on a jobsite can be really useful. There are so many apps meant specifically for the construction industry that can help with time-tracking, creating reports, punch-lists, measuring, and more. Many of them allow you to share documents and project updates

with others on the team – all in one place and accessible online.

Social media

It's just not safe to be walking around a jobsite and checking your Twitter or Facebook feed. Almost any reason for using social media can wait until you're off the job. And if you have a concern about safety or other sticky situations on the job, we recommend you tell your supervisor – don't share it publicly on social first! You could make a bad situation worse by not following your company protocol when it comes to safety.

Camera

The camera can be very helpful on a jobsite, as long as you use it responsibly. Many of the previously mentioned construction apps can be used to take photos, videos, or sketches, which can be shared directly through the platform. Use good judgement here, however. There was a reported instance where a picture of an injured craftsman was shared online and then it got back to the family before they were officially informed.

Conversation

Using the phone for its main purpose – talking to friends and family not physically present – is generally not recom-

mended on the job site. It's just another distraction that can keep you from noticing a real safety hazard happening around you. If you're waiting for an important call from your child's caregiver or sick relative, then schedule a call when you can go off site on a break. Or make arrangements with your manager to check your phone at a certain time, for example.

A construction jobsite generally requires you to be paying attention so that you can be safe and do your job.

Enquiries: www.mici.com





Portable just got more powerful

Brady Corporation's new M610, M611 and M710 portable label printers offer the speed, versatility and durability to get any labelling job done right, at any time, anywhere.

To maximally support users, the new portable printers from Brady offer countless options to design any label – via the onboard keypad, via PC, and via smartphone. These designs can be printed on the widest range of label materials, sizes and colours, fit for any identification job. All three printers also immediately recognise every loaded material, they auto-calibrate and warn whenever a label design would need a different label size.

Work the way your work demands

With Brady's new high-end portable printing range, users decide how labels are created. Printers have label design wizards installed that can be operated with the on-board keypad, available in all key layouts. Alternatively, labels can be designed with Brady Workstation on PC, stored on the printer, or sent to the printer when needed via Wi-Fi.

The new printers' top feature perhaps is they can all be operated with the user's smartphone, provided Brady's free Express Labels Mobile app is installed. The app makes label design extremely easy, practical and fast for almost any label with any recent smartphone model.



Depending on the needs of the job, users can load printer consumables with precision pre-cut labels or rolls with continuous label material that can be auto-cut after printing. For large print jobs, Brady also offers compatible bulk rolls that maximise the portables' fast print speeds of up to 76 mm per second.

Create premium labels from anywhere

Brady offers thousands of printer label options, including general identification materials and highly specialised solutions designed for maximum reliability in specific contexts. With the widest choice in label materials, sizes and colours, users will enjoy the freedom to clearly and reliably identify just about anything with a single label printer.

The M610, M611 and M710 are all



M610 Label Printer



M611 Label Printer



M710 Label Printer

designed for use on the road and in busy workplaces. They are tough and rugged and can resist more than the occasional bump. All models offer a 1.8 m drop resistance and military grade shock resistance, and they include a rechargeable li-ION battery that keeps users printing all day long, up to around 4500 labels per charge.

An elevated labelling experience

Any of the new portable label printers from Brady unlock a seamless identification ecosystem that offers a premium labelling experience. Thousands of authentic Brady label materials are automatically recognised by the printer, by Brady Workstation on a user's PC, and by the Express Labels Mobile app on a smartphone. The printer will auto-adapt its settings, and the Brady Workstation

software and Express Labels Mobile app for label design will immediately take into account the specific loaded material, so users can push identification to the limit without a single worry.

Effortless communication between label material, label printer and label design software results in first time right labels, all but no label loss, and fast identification in the office, and in the field. It also enables error-free printing of custom, fully personalised label rolls that can be pre-printed in advance with a logo or any other information.

Available via Brady's worldwide network of experienced distributors, the M610, M611 and M710 are ready to change the labelling experience of businesses in many industries, anywhere in the world.

Enquiries: www.brady.eu

WearCheck saves customers time and money

Ensuring industrial machinery operates at peak performance with reduced maintenance costs – this is the expertise of condition monitoring specialist company, WearCheck.

Operating an extensive network of 16 world-class laboratories in nine countries across Africa, Dubai and India, WearCheck is recognised

as a leader in the preventive maintenance field, servicing a wide range of industries with an array of different monitoring techniques. The company has clients in industrial sectors ranging from power generation and renewable energy to mining, fleet management, aviation, maritime and more.

WearCheck's core business is the

scientific analysis of used oil, fuel and other fluids, whereby samples are analysed in the laboratory for trace particles which indicate which component is suffering unusual wear patterns. This information is assessed by a team of specialised diagnosticians, who make recommendations on the required remedial action for the component

in question.

Additional predictive maintenance techniques offered by WearCheck – which are employed depending on the type of machinery being monitored – include asset reliability care (ARC) services, water analysis, transformer chemistry services and advanced field services (AFS) such as non-destructive testing, technical compliance and rope condition assessment. The company also offers lubrication enabled reliability (LER), providing clients with bespoke solutions to ensure that their lubrication systems are well managed, efficient and cost effective.

WearCheck MD, Neil Robinson, outlines the concept of proactive maintenance, "By monitoring a component's condition regularly over time, our scientific techniques provide reliable data which enables our diagnosticians to accurately predict whether and when that component will potentially fail. We identify a potential failure before it occurs and recommend a remedy. This way, catastrophic failure is avoided, thereby enhancing machine availability and performance."

Unplanned component failure can be extremely costly and preferably avoided. With forewarning about potential component failure, WearCheck customers dodge unnecessary maintenance costs and maintain efficiency by upholding optimum production levels.

Enquiries: www.wearcheck.co.za



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Here, laboratory assistant Shireen Brijlal loads a used oil sample into a Houillon Viscometer to measure the viscosity of the oil, in WearCheck's Durban laboratory.

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Lightning series part 1: Risk management

Richard Evert, National Director of the Earthing and Lightning Protection Association (ELPA) has provided Sparks Electrical News with a comprehensive series on lightning issue. The series will cover Risk Management; Lightning Protection Design; Lightning Protection System (LPS) Installations; Surge Protection Measures; Earthing and Resistance; and more. Be sure to catch all the articles over the next six months.

As an organisation, ELPA strives for industry transparency and vested property stakeholder risk awareness to the extent that every property in South Africa will be supported by a risk assessment alongside the risk assurance electrical COC. The risk assessment will ensure that only vested property stakeholders of properties that require lightning protection solutions will require additional guidance on the risk strategies they need to adopt. This will only be possible with sustained industry support and an adopted skills development plan approved by SAQA and the QCTO in accordance with the request as tabled by the Department of Employment and Labour.

Lightning protection is an exercise in risk management. Risk management as a principle, weighs up the potential for loss or damage, the cost to avoid that loss or damage and the amount of loss or damage that can be tolerated. If the assessed loss or damage can be tolerated without any actions taken to avoid the loss or damage, then the purposes for taking the prescribed actions is deemed not critical or urgent.

Further to this consideration, the assessment may also determine that the actions to avoid loss or damage may cost more than the loss or damage itself and it would be irrational to undertake the prescribed actions.

Proactive and Reactive Risk Management and Lightning

Understanding the risk allows the risk manager to adopt either a reactive or a proactive risk management strategy or some combination of these.

- Reliable historical lightning data is required in a proactive lightning risk management strategy.
- Reliable real-time lightning data and thunderstorm reporting is required for both proactive and reactive lightning risk management strategies.

Governance, Legislation and Regulations

The information being shared here has been carefully worded such that there is neither ambiguity nor opportunity to exploit the explanations.

In the context of the explanation given above, governance cannot unilaterally enforce lightning protection on the citizens of our country in any shape or form either through legislation or regulations.

Any exploitive statements by individuals about existing law and planned changes in legislation and regulations to market their products and services are irrational and a violation of at minimum, the Consumer Protection Act.

On the other end of the spectrum, any attempts at holding our government liable for irresponsible asset management on the part of vested property stakeholders is equally irrational.

Every South African citizen, business and organisation in our country, is entitled to all the support you can get to manage the risks you face. To that end, lightning risk falls into a category where:

- Standards have been developed to offer guidance.
- Governance support exists in the context of liabilities and safety.
- The insurance industry try to factor it in to their support to property owners.
- Academia and lightning scientists study the phenomena to find more effective ways to manage this risk.

ELPA was established specifically to bring certainty to the uncertainty that has been reigning in the lightning protection industry for many years. That so much needs to be unpacked regarding legislation is indicative that exploitation and uncertainty have inflicted considerable collateral damage to our industry and associated industries.

This article and others like it shed light on the matter, offering secure alternative understanding based on concrete rational reasoning. More information will be forthcoming on subjects such as "Authority Having Jurisdiction", the liabilities of service providers towards the client and the client opportunities to adopt long term responsible risk management plans.

Lightning – the culprit

There is no question that lightning is a life-threatening risk and causes tremendous losses when it terminates on assets of any value.

- Lightning poses a threat even when it does not strike a person or a building directly.
- Indirect lightning is lightning occurring in the vicinity of a structure and not on it.
- Indirect lightning can cause significant damage to electrical and electronic equipment in that structure and inflict fatalities and permanent injuries.

Understanding the culprit and managing the risk

To make an intelligent assessment of the risk posed at any location and to any person, the source of the threat must be understood.

- Knowledge about the lightning that occurs on a location, is central to determining whether lightning protection is required.
- The exercise to examine lightning information to confirm whether lightning caused damage to a property is a reactionary exercise.
- Reactionary strategies do not reduce lightning related losses and are adopted when the anticipated losses are deemed to be tolerable.

Lightning empirical data – The real threat

To afford us the opportunity to make our own informed choices between proactive and reactive strategies, we must have some idea of the actual lightning activity that can be anticipated at the location.

- Historical records provide evidence of what has taken place in the past.
- Supplementary evidence will confirm to what extent the past lightning behaviour will continue to exist in the future.
- If there is no supplementary evidence showing that the lightning behaviour will change, then losses can be determined on the basis that the future lightning behaviour is mirrored by the historical evidence.

As with any risk, we answer some questions about its existence based on evidence we have at our disposal: When, How, Why and Where – the order of these has purposely been placed out of sequence.

No lightning

Firstly, does lightning exist at the location?

When there is no lightning, the following answers are given to the questions:

- When? Never.
- Why? The circumstances required to produce lightning do not exist.
- Where? In each specific instance, this was answered as part of the scope of work.
- How? This question is no longer relevant with regard to lightning. It may be useful to answer this question with regard to how the conditions can occur where lightning will not exist.

In conclusion:

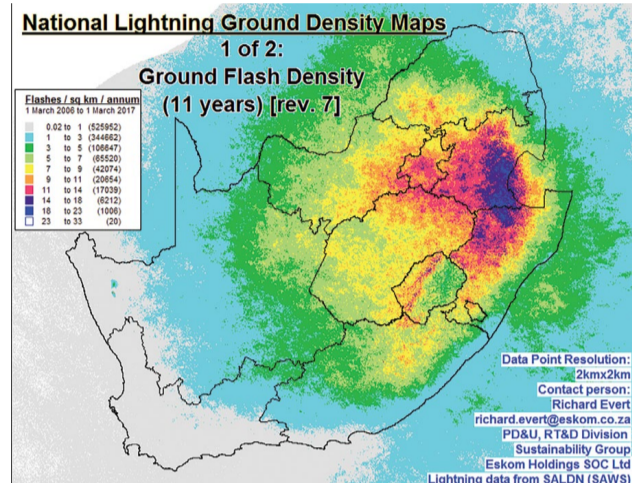
- If there has been no lightning recorded in any shape or form, and
- If there is no evidence to suggest that there will be lightning in the future, then
- There is no lightning threat.
- End of assessment.

For all other instances, the assessment requires sound scientific, engineering and business rationale to conclude with an effective lightning risk management strategy, irrespective of the size of the location, the property use or the commercial value.

When?

When does this lightning occur? The answers provide input to consider a variety of different risk management phases:

- If it occurs when nobody is present, there is no threat to humans.
- If it occurs in significant volumes with a particular start date and a particular end date, a strategy can include preparation phases, reactionary phases and a phase of consolidation.
- If the losses can be quantified as a progressive phenomenon in a repetitive manner annually, the effectiveness of the risk management strategy can be tracked in each year as the storm season progresses, allowing for an intervention phase for years when the thunderstorm activity exceeds expectations or failures exceed the expected levels for that portion of the year.



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Earth ground testing ... the basics

Poor grounding not only increases the risk of equipment failure; it is dangerous.

Facilities need to have adequately grounded electrical systems so that in the event of a lightning strike, or utility overvoltage, current will find a safe path to earth.

Simple grounding systems consist of a single ground electrode driven into the ground. The use of a single ground electrode is the most common form of grounding and can be found outside homes or places of business.

Complex grounding systems consist of multiple ground rods; connected mesh or grid networks; ground plates; and ground loops. These systems are typically installed at power-generating substations, central offices, and cell tower sites.

Locations of resistances:

- The ground electrode and its connection.
- The resistance of the ground electrode and its connection is generally very low. Ground rods are generally made of highly conductive/low-resistance material such as steel or copper.
- The contact resistance of the surrounding earth to the electrode.
- The National Institute of Standards (a governmental agency within the US Dept. of Commerce) has shown this resistance to be almost negligible provided that the ground electrode is free of paint, grease, etc. and that the ground electrode is in firm contact with the earth.
- The resistance of the surrounding body of earth.
- The ground electrode is surrounded by earth which conceptually is made up of concentric shells all having the same thickness. Those shells closest to the ground electrode have the smallest amount of area resulting in the greatest degree

of resistance. Each subsequent shell incorporates a greater area resulting in lower resistance.

This finally reaches a point where the additional shells offer little resistance to the ground surrounding the ground electrode.

So based on this information, we should focus on ways to reduce the ground resistance when installing grounding systems.

What affects the grounding resistance?

First, the NEC code (1987, 250-83-3) requires a minimum ground electrode length of 2.5 metres (8.0 feet) to be in contact with soil. But, the four variables that affect the resistance of a ground system:

1. Length/depth of the ground electrode
2. Diameter of the ground electrode
3. Number of ground electrodes
4. Ground system design

Length/depth of the ground electrode

One very effective way of lowering ground resistance is to drive ground electrodes deeper. Soil is not consistent in its resistivity and can be highly unpredictable. It is critical when installing the ground electrode, that it is below the frost line. This is done so that the resistance to the ground will not be greatly influenced by the freezing of the surrounding soil.

Generally, by doubling the length of the ground electrode you can reduce the resistance level by an additional 40%. There are occasions where it is physically impossible to drive ground rods deeper – areas that are composed of rock, granite, etc. In these instances, alternative methods including grounding cement are viable.

Diameter of the ground electrode

Increasing the diameter of the ground

electrode has very little effect in lowering the resistance. For example, you could double the diameter of a ground electrode and your resistance would only decrease by 10%.

Number of ground electrodes

Another way to lower ground resistance is to use multiple ground electrodes. In this design, more than one electrode is driven into the ground and connected in parallel to lower the resistance. For additional electrodes to be effective, the spacing of additional rods needs to be at least equal to the depth of the driven rod. Without proper spacing of the ground electrodes, their spheres of influence will intersect and the resistance will not be lowered.

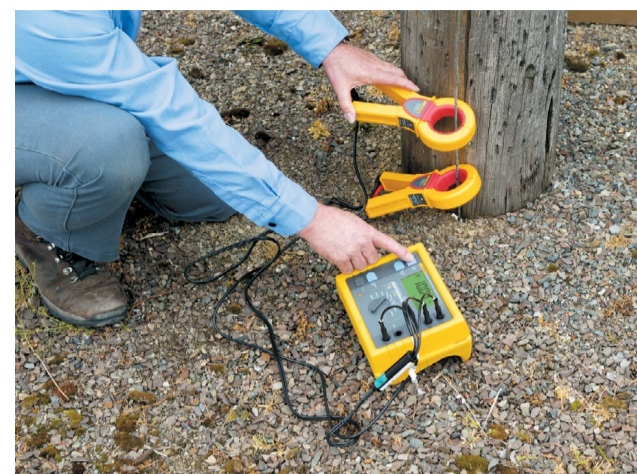
To assist you in installing a ground rod that will meet your specific resistance requirements, you can use the table of ground resistances, below. Remember, this is to only be used as a rule of thumb because the soil is in layers and is rarely homogenous. The resistance values will vary greatly.

Ground system design

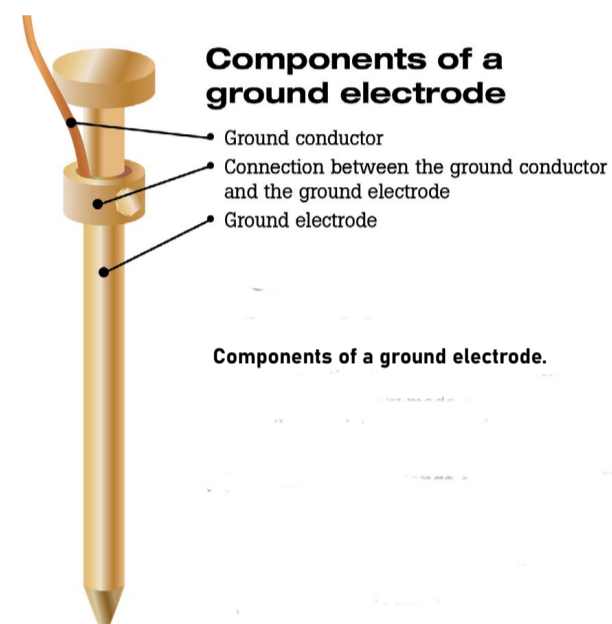
Simple grounding systems consist of a single ground electrode driven into the ground. The use of a single ground electrode is the most common form of grounding and can be found outside your home or place of business. Complex grounding systems consist of multiple ground rods, connected, mesh or grid networks, ground plates, and ground loops. These systems are typically installed at power-generating substations, central offices, and cell tower sites.

Complex networks dramatically increase the amount of contact with the surrounding earth and lower ground resistances.

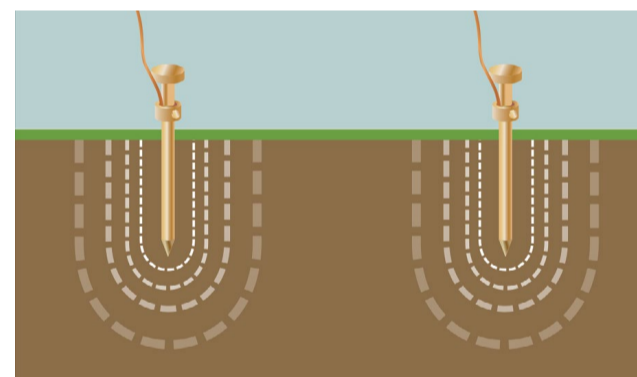
Enquiries: www.comtest.co.za. To learn more about the product, visit <https://bit.ly/3QCSt9s>



Fluke Earth Ground Testing meters are indispensable troubleshooting tools for problems related to poor grounding or poor power quality.



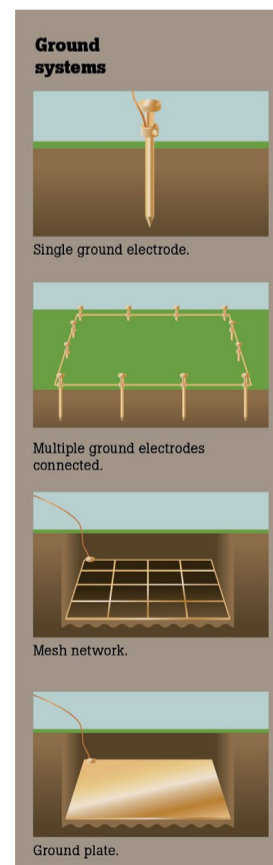
Components of a ground electrode.



Number of ground electrodes. Each ground electrode has its own 'sphere of influence'.

Type of soil	Soil resistivity R_E	Earthing resistance					
		Ground electrode depth (meters)			Earthing strip (meters)		
	ΩM	3	6	10	5	10	20
Very moist soil, swamplike	30	10	5	3	12	6	3
Farming soil loamy and clay soils	100	33	17	10	40	20	10
Sandy clay soil	150	50	25	15	60	30	15
Moist sandy soil	300	66	33	20	80	40	20
Concrete 1:5	400	-	-	-	160	80	40
Moist gravel	500	160	80	48	200	100	50
Dry sandy soil	1000	330	165	100	400	200	100
Dry gravel	1000	330	165	100	400	200	100
Stoney soil	30,000	1000	500	300	1200	600	300
Rock	10^7	-	-	-	-	-	-

Ground Resistances Table.



Ground systems:
A single ground electrode; Multiple ground electrodes connected; Mesh network, and Ground plate.



Ethernet/PoE protector in a waterproof aluminium enclosure

DEHNpatch outdoor, the new complete unit comprising surge protection and an outdoor enclosure protects your surveillance cameras, PoE++/4PPoE and other GBit Ethernet applications with a lightning current discharge capacity of in total 4 kA (10/350 μ s).

Optimum protection for use in outdoor or industrial applications

No more messing about at the top of a mast! DEHNpatch comes pre-installed in the IP66 enclosure, and mounting it is extremely simple; bend the seal open, neatly insert the cable – finished. You use pre-wired cables – the screws are captivated in the lid so they can't fall out ... and installation is as quick as a flash.

In a nutshell: Your advantages with DEHNpatch:

- No EB conductor needed: Equipotential bonding via the enclosure. If fastened to an earthed metal pole, no additional EB conductor is needed.

- Screws fixed in place: The enclosure screws are secured against falling out – especially advantageous when mounting.
- Protection against moisture: The integrated pressure equalising membrane prevents condensation in the enclosure.
- High degree of protection: The sealing prevents moisture from penetrating the enclosure (IP66).
- Cover secured: The two halves of the enclosure are securely linked by the EB conductor – this makes mounting easier because there are no loose parts to fall down.
- Strain relief: The pre-assembled cable is precisely sheathed. The plug stays securely in the socket even if there is strain on the cable.
- Universal mounting bracket: Can be mounted on a pole or a wall (horizontally or vertically).
- Only one screwdriver needed: Very practical: all screws can be tightened



with a PH1 screwdriver. This saves mounting time.

Fields of application for DEHNpatch outdoor:

- IP / PTZ camera systems.
- Wireless Access Points (WAP) / Point to Point (PTP/PTMP) communications systems.

- Remote Computer Terminals (RCT).
- Door access/locking systems, intercoms, emergency phone/call boxes.
- Digital LCD signage displays.
- Industrial networking and other automation systems.

Enquiries: www.dehn-africa.com

Insurers: Power surge protection or no claims

Last year, South African short-term insurers reported a 60% increase in claims for destruction to people's property due to power surges as a consequence of load shedding. Now, some of these companies are demanding that homeowners have a surge protection device (SPD) installed or they won't be able to claim for damage caused by a power surge.

Dr Andrew Dickson, Engineering Executive at CBI-electric: low voltage, cautions consumers to check the fine print on their policies to see whether this applies to them. "If they don't, they could be in for a nasty – and costly – shock should their home be hit by a power surge."

He explains that, with load shedding, when the electricity is turned back on at a substation, it can send through a voltage pulse of several thousand Volts into the network. "The problem is that the average home runs on 230 V, so when the lights come on again, all electrical items, including your lights and appliances, may receive an unexpected voltage spike, followed by a power surge of the returning main supply. This only lasts for a microsecond, but it is enough to result in a point of failure within equipment which may cause significant damage."

"While they may be a grudge purchase, SPDs can limit

the high peak voltages, diverting that extra electricity away from your distribution board. Plus, they cost a lot less than having to buy a new TV, or worse, your fridge or gate motor," points out Dr Dickson.

Describing how SPDs work, he says, "In the event of a voltage surge, where voltage is greater than what a home's appliances can generally handle, these devices clamp the voltage, providing a path to ground where the excess energy is dumped, limiting the excess voltage spreading into the home, and thereby keeping the voltage at an acceptable level. Different SPDs can absorb different amounts of energy. If these levels are exceeded, it could affect the device which is why all SPDs have an indicator to show the user that it is either operational or at the end of its life."

"Your insurance company will likely prescribe the kind of SPD you should use," shares Dr Dickson. "Typically, this is a Class 2 SPD which is installed within the distribution board by a licensed electrician. This will then prevent the spread of over-voltages within the electrical system and protects whatever is connected to it. For sensitive electronic devices like TVs, routers and home entertainment systems, you might want to supplement this with Class 3 devices at the

point of consumption which is typically a plug-in adaptor."

To ensure that homeowners are able to claim should a power surge still cause damage, he advises that they follow the SPD installation requirements contained within their policies. "They should also check the devices after load shedding or a storm to see if the indicator still shows that they are in good working order. While SPDs are risk mitigation measures, they will eventually fail so need to be checked on a regular basis, especially with Eskom announcing that 'protracted load shedding' will continue for the foreseeable future."

"With this year's rise in inflationary pressure forcing South African consumers to cut back on discretionary spending, can they afford not to have SPDs in place? Not only could this prevent them from having to repair or replace expensive appliances, but also potentially thwart them from becoming victims of crime through power surges knocking out alarm systems and electric fencing. Just like having an insurance policy, people often underestimate the benefit of these devices until after an event has occurred," Dr Dickson concludes.

Enquiries: www.cbi-lowvoltage.co.za



Reliably protect dc applications against surge voltages

The goal of the All Electric Society is a world in which sufficient energy is available from renewable resources. Electrification is the first step towards achieving this. The new VAL-MB-T2-750DC and VAL-MB-T2-1000DC type 2 surge protective devices from Phoenix Contact provide support here.

As the number of dc applications continues to increase, more and more system operators are also using direct current with 650 to 750 V dc in industrial applications. In addition to electromobility, direct current is also used for battery storage systems. These systems lose valuable energy if they first have to convert the energy fed in from wind turbine generators or photovoltaic systems.

Applications with direct current also require reliable protection against surge voltages caused by lightning currents or even switching operations. The surge protective devices specifically developed for these applications provide reliable protection at high voltages. Depending on the system voltage, a suitable solution is available for various applications in the form of these two versions: VAL-MB-T2-750DC and VAL-MB-T2-1000DC. They can be used at altitudes up to 6 000 m above mean sea level.

A mechanical/visual status indicator provides information about the status of the protective device. The integrated remote signalling also enables integration into the control room. The compact space-saving design is thus suitable for installation in confined spaces.

Enquiries: www.phoenixcontact.com



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Crabtree: Local manufacturing quality that meets international design standards

Company profile

Crabtree South Africa is a local manufacturing company with an array of stylish, sophisticated, freshly urban electrical accessories such as switches and sockets (domestic/commercial and industrial), trunking and a fit-for-purpose range of domestic leads and adaptors which conform to the most stringent SANS standards.

Crabtree's history

Crabtree South Africa first opened its doors in 1947, as a subsidiary of a UK parent company. From those early days, the Crabtree ethos is to be a company that meets the high demands of its customers through the provision of technically superior products, unrivalled service and superior support and back-up infrastructure.

In 2018 Crabtree was purchased by Siemens South Africa a subsidiary of the Siemens AG business based in Germany. The Crabtree business, Crabtree South Africa (Pty) Ltd became part of the Siemens Low Voltage division, managed by Electrium Sales LTD in the UK also a leading supplier of Electrical Accessories and Circuit Protection Equipment.

The company's world-class technical abilities are well recognised. Crabtree has won several technological awards for its ever-expanding branded range of products that continue to add value and quality to South African homes and businesses.

Crabtree has also created a solid national distribution network, becoming a significant local exporter by supplying electrical accessories to SADC countries. Crabtree is proud of the quality, safety and reliability of its products which conform to the most stringent regulations and is also a member of the South African Safehouse Association.

Selected products

Crabtree Classic Range: BUILT FOR LIFE. Crabtree's Classic Range is expansive and used in domestic, commercial and industrial applications, Classic is locally manufactured, SABS approved and, as a steel range, highly durable and reliable.

Crabtree Diamond Range: STYLISH DURABILITY. The Diamond Range crosses the divide between upmarket styling and classic durability with an extensive range of modules, also locally manufactured and SABS approved.

Crabtree Topaz Range: FRESHLY URBAN. The Topaz Range is affordable yet stylish and offers a simple, modern look that adds a touch of class to any home.

Crabtree Topaz Grid Range: MODULAR & ADAPTABLE. The Topaz Grid Range enables you to create your own combination with our interchangeable modules.

Crabtree CMS Range: QUICK & EASY TO INSTALL. Crabtree's cable management system range will not rust or corrode and is impervious to most mineral acids and alkalis. Products range from trunking, PVC fittings, couplers, glands and wall boxes.

Crabtree Domestic Products: Crabtree has a wide range of adaptors and multi-plugs allowing you to safely use multiple appliances or devices in various socket outlets e.g. 164-1, 164-2. Additionally, the company manufactures an extensive range of quality solid pin plug tops.

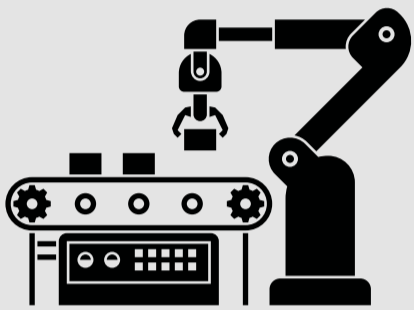
Safety

Crabtree is an ISO9001:2015 compliant company and all products sold carry the SABS mark. In addition, Crabtree offers a dedicated range of sockets and switches for the highly demanding hospital and medical industry. A well-equipped test laboratory allows Crabtree to provide design verification of new products as well as follow up testing and analysis for customers.

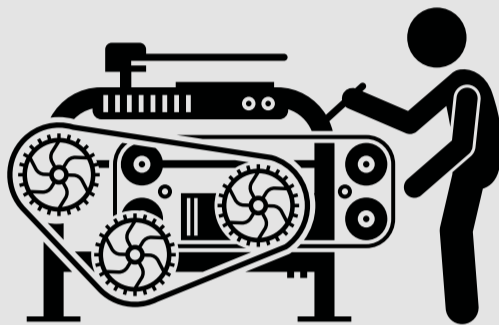


SUPPORT LOCAL. BUILT FOR LIFE.

Products: 2000 plus



Factory staff: 322



Admin staff: 87



Social media:



SELECTED PRODUCTS



6532/101P + 6962/001P



7396



11815/001



11908/001



11971/001



1071P



6970/001



10602/601



15233/601

Deploying Smart Power in a range of industries

With Smart Power, ABB is a technology leader with solutions that make power supplies smart, connected and protected. With data-driven insights, the energy efficiency, reliability and management of electrical assets can be optimised. In this way, ABB is helping to power our lives more sustainably.

Data centre solutions

In the dynamic, fast-paced data centre industry, a passion for change is essential. Having been at the forefront of industrial power and automation for over a century, it's in its DNA. By partnering with ABB, you can be confident that whatever demands the future brings – from scale to speed to sustainability – ABB work with you to find the best data centre solutions.

Its class-leading data centre power solutions keep your operations running 24/7. They are space-saving, time-, energy- and cost-saving and infinitely scalable. Most importantly, each is perfectly suited to your business.

Oil and gas

ABB is making a world of difference by enabling safe, smart and sustainable opera-

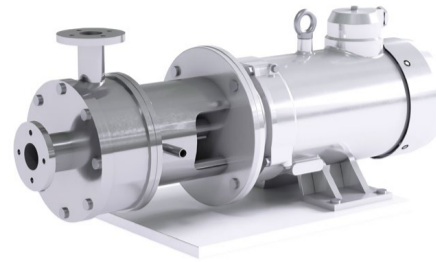
tions with integrated solutions that digitalise, automate and electrify the oil and gas industry. The company is focused on helping energy companies operate more efficiently to reduce their environmental impact, while enabling new, clean energy value chains to fuel our future.

Food and beverage

The food and beverage industry is under constant pressure to adapt and evolve to meet consumer demand. This means increased production, lower prices and improved quality and variety, all while maintaining a commitment to sustainability.

Optimising production in this context is about more than simply finding a supplier. It's about finding a partner. A partner who understands these big picture challenges. A partner who's willing to listen. A partner who understands your business – and your goals – from power to palletising.

ABB Ability™ solutions deliver a safer, smarter, more sustainable electrical infrastructure by providing data-driven insights that enable you to reduce costs, increase comfort and drive efficiency. With its solutions, you can unlock the full



potential of your equipment by quickly and easily adding innovative new features and functionality.

As the world's demand for electricity grows, ABB are electrifying the world in a safe, smart and sustainable way as a global technology leader in electrical distribution and management. ABB collaborate with customers and partners to enable energy efficiency and power a sustainable future for society with its products, solutions and digital technologies.

Enquiries: new.abb.com/about/our-businesses/electrification/smart-power

Improving energy efficiency

Monitoring and control equipment supplier, Euca Technologies, is playing a vital role in promoting energy monitoring for businesses in South Africa.

The country has been facing energy consumption issues, such as load shedding and power outages, which have affected the smooth operation of business buildings. The use of data loggers can help in identifying opportunities for energy saving, especially for those who are using solar or generated electricity.

Peter van Zyl, the sales director of Euca Technologies, emphasises the importance of monitoring businesses' energy consumption. By doing so, businesses can evaluate their performance and implement new measures to improve energy efficiency. Euca Technologies offers the Onset UX120-00M, a four-channel analogue data logger that is saving time and frustration for many buyers in South Africa.

This device can monitor measurements such as temperature, ac current and voltage, dc current and voltage, gauge and differential pressure, kilowatts, compressed air flow, and much more. It is highly user-friendly and has an LCD display for building performance monitoring applications. With flexible support for up to four external sensors, this device has high accuracy and can be used for numerous measurements.

Energy consumption data loggers can help businesses verify and improve energy efficiency by testing, measuring, and analysing data in particular areas where power consumption is a struggle. They can also validate overall building systems performance and ensure that heating, air conditioning, or building control systems are working correctly.

This product has sensors and accessories that are sold separately, allowing users to build onto the high-performance device for endless energy efficiency possibilities. The device requires HOBOWare, a software that is used to read and record monitored data.

By promoting energy monitoring for businesses, Euca Technologies is contributing to energy efficiency and sustainability in South Africa. The hope is that the country can eventually live happy lives with well-monitored electricity usage once again. With the use of devices such as the UX120-00M, South Africa can dive deeper into energy efficiency and sustainability.

Enquiries: www.euca.co.za



The critical role of recyclers in the EPR ecosystem

Now that Extended Producer Responsibility (EPR) legal criteria are fully in place in South Africa, local producers are responsible for the entire life cycle of the products they market and sell.

However, as Patricia Schröder, spokesperson for the producer responsibility organisation (PRO) Circular Energy emphasises, producers are not the only ones who bear duty. "Recyclers and service providers have a significant role to play in the EPR system. They ought to become involved, take advantage of chances to broaden their services, and help producers comply," she says.

A recycler's role in EPR Implementation

"Among all the different stakeholders involved in EPR, recyclers are one of the final role players in the system," Schröder notes. "They have a lot of duties that are of great importance, as they are the end point where packaging and e-waste recycling and processing take place."

She says a first step would be for recycling organisations to approach producers and PROs with an efficient plan for recovering or recycling packaging and e-waste. "In this plan, they should indicate and prove that their facility and recycling procedures follow established criteria or recommendations. This of course would include that no environmental harm is done when packaging waste and e-waste is stored, transported and treated. Furthermore, they should ensure that the recycling processes don't harm the environment or human health."

If done correctly, she says that service providers and recyclers have the power to make waste management initiatives so much more efficient. "They should, for instance, work with and uplift participating marginalised communities, like waste-pickers, in the waste management process."

In terms of paperwork, Schröder notes

that all records should be made available to the relevant governing bodies by recyclers. "E-waste collection, disassembly, recycling, and delivery to authorised recyclers should all be documented."

Why and how recyclers should assist in producer compliance

Schröder says it is important that recycling professionals be wary of harmful producer industry tactics like greenwashing.

She cites the environmental charity ClientEarth when defining greenwashing as "the process of making a corporation appear more climate friendly and environmentally sustainable than it actually is."

She says that service providers and recyclers – being experts in their respective fields – would be able to recognise when the producers they work with are taking part in greenwashing practices, whether it is deliberate or mere ignorance.

"Then, they ought to inform the producers of the issue and warn them that making false environmental claims has serious repercussions, such as impeding the growth of the green economy. It could also cause massive damage to their reputation."

Schröder reminds recyclers that they work within an ecosystem. "All the role players can and should assist each other to be more compliant, leading to greater success for all businesses involved."

How companies mislead consumers with false environmental claims

Companies and producers have in recent years come under increased pressure to run their operations in an environmentally responsible way – this is both from a legal and ethical standpoint.

"Whilst this is undoubtedly something to be lauded, it has sadly also given rise to a practice known as greenwashing," warns Schröder.

"Although greenwashing is deceptive, it is not necessarily prohibited because of legal loopholes," Schröder elaborates. "The fact that it persists despite being denounced by NGOs, the media, and increasingly, regulators is remarkable."

Applying energy efficiency concepts to electrical installations

The International Electrotechnical Commission (IEC) defines energy efficiency as the ratio between output performance compared with the input of energy. It consists of the following: using less energy for the same performance, using the same energy for better performance, or improving the conversion of energy into electricity.

Many energy efficient technologies and solutions are readily available. Investments and a commitment towards energy efficiency abound, yet a number of barriers inhibits the deployment of energy efficiency solutions. Lack of awareness of saving potential, a focus on devices rather than systems which leads to a lower return on investment and a preference for lower cost rather than life-cycle gains are some of the barriers that impede harvesting the full potential of energy efficiency.

Standardisation can offer solutions to help overcome these barriers by, for example, providing definitions and measurements of performance, disseminating and promoting energy efficiency technologies

and establishing minimum energy performance requirements.

The IEC has set up the Advisory Committee on Energy Efficiency (ACEE) to help the adoption of energy efficient solutions in their standardisation activity and support energy efficient technologies through their standards. According to ACEE Chair Philippe Vollet, "Our first mission is to coordinate activities related to energy efficiency and provide guidance to technical committees".

As part of this mission, IEC ACEE has developed two guides, Guide 118 and Guide 119, which can be used by IEC technical committees to harmonise energy efficiency standardisation and adopt a systems approach. It has also developed a case-study on how international standards can be used to support the energy efficiency market and national energy efficiency policies for low-voltage electrical installations.

Low-voltage electrical installations case study

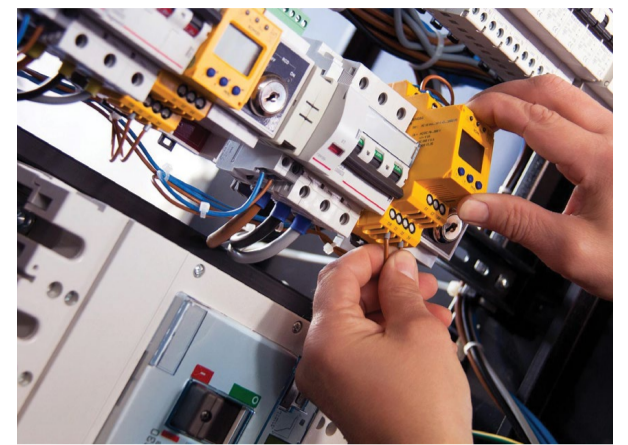
The case study on low-voltage electrical installations is based on IEC

60364-8-1 which gives guidance on the design and assessment of low-voltage electrical installations based on the concepts found in IEC Guide 118.

According to Jacques Peronnet, member of IEC ACEE and Chair of IEC TC 64, "IEC 60364-8-1 provides a method to assess the energy efficiency of an electrical installation based on parameters that influence efficiency. It is relevant for both new and existing buildings and can be used for industrial, commercial and residential premises."

Boundaries need to be defined in order to understand what will be addressed in the optimisation of energy usage. Circuits that are designed for energy optimisation are known as meshes and generally refer to a zone in the building such as the floor or a room and a type of usage such as lighting or HVAC. Meshes are optimised to ensure the lowest energy consumption and cost in comparison with another solution.

Design aspects such as the availability of local energy generation and storage as well as the arrangement of circuits need to be considered. The external



driving parameters include factors that have an impact on energy usage such as building occupancy, the seasons of year – such as winter or summer when electricity demands are higher – and the cost of the electricity.

Measurements are needed to assess the efficiency of a building and provide awareness about consumption. Examples of measurement tools include billing and energy usage analysis such as power meters.

As noted by Peronnet, "Buildings represent 40% of global energy demands of which a significant part is supplied by electricity. Finding ways to make energy usage more efficient can contribute greatly to a huge energy saving."

Enquiries: www.iec.ch

She points out that greenwashing is not necessarily a deliberate rogue tactic, as it could even take place as a result of mere corporate ignorance.

"Customers are increasingly drawn to producers with outstanding sustainability credentials, and this is a fantastic incentive to meet green targets. But too frequently the correct processes are then not followed," Schröder says.

Different types of greenwashing

"One of the biggest concerns regarding greenwashing, is how intricate the deceptive tactics have become," Schröder warns. She refers to a report by the non-profit financial think tank Planet Tracker, titled "The Greenwashing Hydra", that explains the sophisticated schemes some producers and organisations resort to.

"One of the tactics the authors of the report has observed is called Greencrowding," Schröder says. "It relies on safety in numbers and is based on the idea that you could hide in a crowd to avoid detection. However, a closer look reveals that none of these organisations' progress reports offer open, quantifiable, and audited data."

Another tactic used is Greenlighting. This occurs when company communications stress a particularly green characteristic of its operations or products, however tiny, in order to shift attention away from ecologically damaging actions being performed elsewhere.

Greenlabelling is also a deceptive method. "This is when the term

"green" or "sustainable" is used by marketers, but a deeper look reveals that their claims are false. It is challenging for a layperson to understand the numerous environmental labels. Terms like 'bio', 'from nature', 'natural', 'green' and 'eco-friendly' are commonly used, but poorly defined and therefore abused."

Consequences could be dire

Schröder emphasises that it is crucial to remember that making false environmental claims has huge consequences – like hindering the development of the green economy. "Greenwashing hampers sustainability. It makes it easy for customers, governments, and even businesses to believe the environment is benefitting from certain practices, when in effect, nothing is happening."

Producers also stand to lose big, though. "A backlash will most probably occur if a firm is exposed as exaggerating its environmental promises. They are then likely to suffer the resulting consumer backlash. When customers go so far as to boycott producers they deem as dishonest, it further result in a decline in sales.

Nowadays, investors, customers, and employees want producers and companies to act in a sustainable manner. If it becomes apparent that you were part of a greenwashing scheme – whether intentional or not – the reputational damage can be huge," she concludes.

Enquiries: www.circular-energy.org

Plentify and Cellucity partner to help the fight against loadshedding

Plentify and Cellucity

have announced a partnership to bring Plentify's energy-saving HotBot product to Cellucity stores nationwide, in addition to being available on Cellucity's online ecommerce website.

Plentify is a climate tech company that builds smart energy products for residential homes. Prior winners of the African Entrepreneurship Awards and SA Startup of the Year, their flagship product, HotBot, is a smart energy device that uses machine learning and internet-of-things technology to control electric geysers.

HotBot intelligently turns the geyser on and off, reducing energy use by 30% while still providing hot water when needed. HotBots also couple with home solar systems to boost the energy demanded by geysers during the day, enabling higher utilisation of the solar system. The real magic is that HotBots talk to each other to eliminate load shedding by shifting demand away from congested times. HotBots in just 10% of homes would prevent two hours of blackouts per day in South Africa.

Cellucity is the largest independent dealer for Vodacom in South Africa, with over 30 stores within the group nationwide. Established in 1994, Cellucity is known for bringing innovative technologies to their customers, and exceptional customer service, helping them gain local acclaim, a loyal customer base and stay ahead of the curve in a highly competitive industry. Cellucity is actively involved in corporate social responsibility initiatives, supporting a range of causes and organisations that are making a



difference in South Africa.

"We are thrilled to have partnered with a company like Cellucity that shares our passion for bringing innovative technology that solves a real need," said Kailas Nair, co-founder and Chief Growth Officer of Plentify. "This is a significant milestone for us as we bring HotBots to brick-and-mortar retail, and furthers our goal to become a household brand in South Africa. We look forward to expanding our partnership with them in the future."

Gavin Geldenhuys, Cellucity's Head of Marketing, added, "At Cellucity, we are always looking to bring our customers the latest and most innovative technology. We are proud retailers of the HotBot product and believe it will not only help our customers save on their electricity bills but also help the fight against loadshedding." HotBot will be available at select Cellucity stores nationwide.

Enquiries: www.plentify.io





Philips Lighting rolls out 'EyeComfort' trademark in Sub Sahara Africa

A leader in lighting, Signify invests 4.8% of sales in research and development and the new "EyeComfort" parameters represent a milestone in its development of LED (light emitting diodes) lighting. It also supports the Company's vision and commitment to delivering high quality and comfortable LED lamps and luminaires. Signify introduced the "EyeComfort" Standard in its portfolio of consumer LED lamps and luminaires as there is currently no global standard that defines EyeComfort. This is the first standard of its kind within the lighting industry.

The study of over 8 000 adults across eleven countries – China, Czech Republic, France, Germany, Indonesia, Poland, Spain, Sweden, Thailand, Turkey, and USA (United States of America) (United States of America) – was commissioned to explore how quality LED lighting is related to eye comfort. The research revealed that while the average person spends more than six hours a day looking at a screen, 42% are currently using lighting that is softer on the eyes. And only a third (32%) of people globally would consider how comfortable a light was in their eyes, when making their purchasing decision.

The study also found that when it comes to personal well-being, eye comfort does not rate highly as a well-being priority. Currently over two thirds of people globally

(68%) use weight and fitness (57%) as indicators of overall health and well-being, yet only a third (34%) see eyesight as a sign of overall wellness. Half of those surveyed cited caring for their eyes as one of their top three personal well-being priorities and just 43% visit an eye doctor on a regular basis.

The importance of light

When it comes to lighting and eye comfort, people are not acting on their convictions. While 74% of those surveyed agree that quality lighting impacts on eye comfort, only 28% would choose a light bulb which is more comfortable for their eyes. Additionally, only 42% actively choose lighting that is softer on the eyes.

"Quality lighting is not only related to longevity but is also incredibly important when it comes to ensuring our eyes feel comfortable," explains Rowena Lee, Leader for LED Business Group, Signify. "Crucially people should choose high quality LEDs (light emitting diodes) that have no visible flicker*. This is fundamental to what our team of scientists do, innovating to develop quality and industry-leading LEDs that consumers love, which are easier on the eyes. LED lamps also save up to 60% of energy compared with a compact fluorescent lamp. This paves the way for a more sustainable future."

The Philips EyeComfort Standard

Signify scientists have developed an industry-first Philips EyeComfort Standard, committing to delivering EyeComfort LEDs with no visible flicker. Besides flicker, the standard measures against key comfort criteria such as glare, stroboscopic effect, photobiological safety, dimming effects, tuning and color rendering – factors that can impact eye comfort. Philips EyeComfort LEDs are checked to ensure they pass their prescribed standards while providing energy efficiency and an average lifespan of over a decade. All Philips EyeComfort LED lamps and luminaires will be marked with the EyeComfort trademark.

Philips EyeComfort LED lamps range include:

- Philips LED A60 bulbs – the most popular bulb in the range.
- Philips LED decorative filament lamps – visible filaments are designed to be seen and look good, off and on.
- Philips LED Candles & Lustres – ideal for installation in various kinds of fixtures where people can easily enjoy the art of light.
- Philips LED Sticks – Perfect replacement for (CFL, compact fluorescent) Genie lamps.
- Philips LEDtubes (EcoFit) – help customers to achieve over 55% energy saving and significant maintenance cost

reduction compared to conventional fluorescent tubes.

"We are immensely proud to embark on a social media campaign to communicate the benefits of EyeComfort concept. The campaign is scheduled to go live the week commencing the 1st of May 2023. Our LED consumer products are available both online and in-store. Our company works with a range of large and well-known retailers/distributors who distribute our products. To make it easier, we have compiled a list of retailers/distributors details across the Sub-Saharan Africa region. These can be found on the 'where to buy' page on our local website, www.lighting.philips.co.za/consumer/led-lights/eyecomfort/where-to-buy," explains Mohammed Sali-Ameen, Country Leader for Sub-Saharan Africa.

For further information about Philips LED lamps and luminaires with the "EyeComfort" trademark, visit www.lighting.philips.co.za/consumer/led-lights/eyecomfort



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*Remote Control sold separately. It can be configured on site in case customized dimming is required.

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New floodlights for Hartleyvale Stadium

BEKA Schröder has supplied the LED floodlighting solution for the Hartleyvale Stadium in Cape Town, Western Cape. This stadium is the home of Hockey in the Western Cape and is where all international Hockey games are played in the province.

Hartleyvale Stadium is a field hockey stadium run by the City of Cape Town and has two astroturf sports fields and seating for 1 700 spectators in the hockey section. A new LED floodlighting solution was required to replace the old HID floodlight installation. BEKA Schröder's OMNIBLAST-2-E MAXI was chosen for its local content and because it achieved the required light levels and provides a very high uniformity.

The South-African designed and manufactured OMNIBLAST-E is available in a MIDI and MAXI variant. This LED solution offers an alternative with proven benefits for traditional fixtures fitted with 250 W to 2000 W HID lamps. The OMNIBLAST-E meets various lighting applications, ranging from general area lighting to recreational sports lighting up to professional broadcasting requirements, matching the horizontal and vertical lighting levels respectively. A modular concept of optical units means that 1, 2 or 3 modules can be mounted on a similar bracket arrangement to offer the utmost versatility, providing light distributions and lumen packages perfectly adapted to the specifications of the area to be lit.



Further advantages of the OMNIBLAST-E include:

- Cost-effective and efficient solution to maximise energy and maintenance savings.
- Housing is manufactured from Marine grade, high-pressure die-cast aluminium.
- Designed for easy technology upgrade.
- Meets international sport federation lighting regulations.
- Inclination angle adjustable on-site.
- Surge protection 10 kV/10 kA.

BEKA Schröder develops and manufactures energy-efficient LED lighting products in South Africa, designed and suitable for local conditions. The company is proud to be associated with Hartleyvale Stadium, the City of Cape Town and CDE Electrical in providing a successful LED floodlighting solution for this project.

Enquiries: +27 (0)21 510 8900



Why humans need light

There's more to light than first meets the eye. Although easy to take for granted, it is in fact the essence of our ecosystem. But it doesn't end there. Did you know light can also boost fertility and ease pain?

Don't shun the sun

Beware of too much sun, we're told each summer. While the dangers of skin cancer from unprotected sun exposure are well known, a moderate amount of exposure is good for you. Significantly, sunlight boosts levels of vitamin D, which can prevent or slow down the growth of tumours and even boost survival rates for cancer patients. In fact, up to 90% of vitamin D comes from exposure to sun – diet alone isn't a good enough source.

A lack of vitamin D is linked to osteoporosis and low levels of bone health and growth, even causing rickets in children, namely soft weak bones, which can become bowed or curved. So, grab your sunglasses, soak up some rays and strengthen those bones.

Taking the pain away

A healthy dose of sunshine can help with pain control. Research shows that patients whose beds are on a sunny side of a hospital experience less pain than those whose rooms are in the shade. As well as reduced pain, patients in sunny rooms tend to recover sooner, use fewer painkillers and feel less stressed. One theory is that exposure to sunlight releases serotonin: a feel-good chemical in the brain.

Light boxes

Whether sick or healthy, light definitely affects your mood. According to research, one in four people in Alaska suffers from depression – and it is mainly caused by a lack of sunlight.

Seasonal affective disorder, or SAD, increases in higher latitudes where the winter days are short. Light therapy, where you sit close to a device called a light therapy box, can be used to treat SAD. Light therapy can also help treat those who have depression all year round, improving their overall well-being.

Scientists have also discovered that light therapy can lower night-time agitation in Alzheimer's patients and reduce symptoms in Parkinson's patients, including sleeping problems and tremors.

Keeping us fertile

And finally, sunlight can even improve fertility. High solar activity has been found to increase fertility rates. Furthermore, light can also give men a boost in the bedroom. Research has shown that higher testosterone is boosted by vitamin D. The biggest source? The sun. A light box would have the same affect, but is possibly less romantic.

Enquiries: www.ledvance.com

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LEDVANCE is licensee of product trademark OSRAM for lamps products in general lighting.





Blu2Light a highlight of Secunda Shopping Mall



Secunda Mall offers a world-class shopping, leisure and dining experience for the whole family. With over 90 shops, six cinemas and numerous restaurants, Secunda Mall is more than just a shopping centre for the Mpumalanga region – it is a place to meet and enjoy time with family and friends.

New highlight in the mall

Now, the mall has a new highlight. Via Bluetooth control, the colour scheme is adjusted to the occasion. For Valentine's Day, for example, the mall shines in the colours of lovers (pink-red-violet), and in the pre-Christmas season, visitors get in the mood for the upcoming Christmas with an elegant red-green. An infinite number of such colour concepts can be implemented with very simple settings via app – thanks to the outstanding Blu2Light lighting management system from Vossloh-Schwabe.

Implementation of the project

First of all, the large ceiling cut-outs in the mall's main corridors were fitted with indirect RGBW lighting from luminaire manufacturer Lightnet (Pty) Ltd. Linear VS converters EasyLine 24 V C-L 120 W as well as the 4-channel constant voltage dimmer Blu2Light DigiLED 4-CH were used. As the elements to be illuminated are up to 50 m apart, but were all to be controlled simultaneously and no additional communication lines were to be laid, the Blu2Light Connect ME and a 45 mA power supply for the DALI bus were installed centrally between the lighting elements.



This created a mesh network in which each Blu2Light element serves as a node. This leads to more security against failures, as the information seeks another path if one of the Bluetooth elements should ever fail. Another advantage of the B2L system is the possibility to choose one B2L device as master and simply copy the control commands to the other B2L devices. This leads to uniform colour synchronisation and, at the request of the mall operator, the floors were set to different colours in this project. Of course, a uniform colour for all floors is also possible.

RDL Consulting took over both the technical installation support and the commissioning of the system on site and is more than enthusiastic about the intuitive control. It is very easy to address the DALI participants on site with the iPad and the LiNA Connect app and to set the colour sequences. Even easier is the operation via the LiNA Touch app from a smartphone or tablet (iOS and Android). Here, the preset sequences are selected at the "touch of a button" and off you go.

VS products used:

- Constant voltage dimmer Blu2Light DigiLED 4-CH (Ref.-No.: 186839).
- Blu2light Connect ME (Ref.-No.: 186768).
- DALI Power Supply (Ref.-No.: 186693).
- LED driver EasyLine 24 V C-L 120 W (Ref.-No.: 186627).

Enquiries: www.vossloh-schwabe.com

Common light bulbs and LED upgrades for warehouses

Warehouse employees perform an array of duties that can range from pulling materials and packing boxes to loading trucks or shipments and coordinating transportation arrangements. Without adequate lighting, these day-to-day tasks have the potential to be dangerous.

There are several areas throughout a warehouse that require optimal lighting – the loading dock, shipping and receiving areas, and open storage areas, to name a few.

Common warehouse fluorescent light bulbs

For the high traffic and open storage areas, most warehouse lighting consists of high bay fluorescent fixtures that use regular or high-output T5 or T8 bulbs.

If you're considering an LED upgrade for your fixtures, there are two optimal solutions. First, you could keep the existing high bay fixtures and replace the fluorescent tubes with TLEDs. Alternately, if you'd like to replace the entire fixture, you can upgrade to an LED fixture.

Selecting the right LED fixture can be an overwhelming process, though, once you start factoring in the optics of the light, light output, warranty, and more.

HID light bulbs in warehouses

In some cases, warehouses also use HID light bulbs in high bay fixtures – these bulbs can range anywhere from 100 to 400 W. Again, retrofitting is always an option – the HID bulbs can be replaced with an LED equivalent for optimal energy efficiency.

As before, you can also replace the old HID fixture using a new LED fixture. This is a common choice if you have damaged fixtures or you are needing to replace more than just a bulb.

Another factor in upgrading warehouse lighting is the reduced cost and headache of having to get up into the high ceilings to perform maintenance. If you have a number of bulbs to replace anyways, you might consider getting a quote for an LED fixture upgrade.

www.insights.regencylighting.com



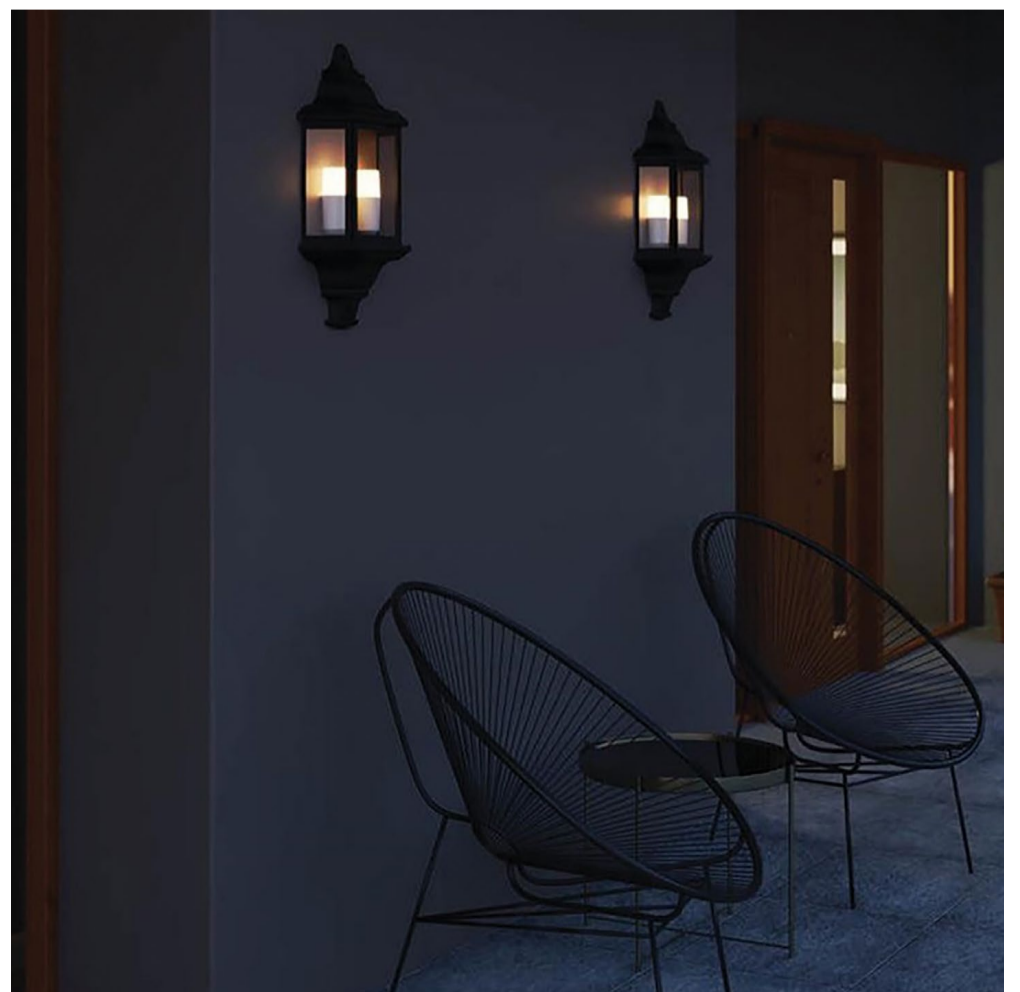
Introducing the Radiant range of day/night stick bulbs

When planning the lighting setup in the home, it's easy to overlook the importance of the bulb itself. However, your choice of light bulb plays a significant role in how a room looks and feels, so selecting the perfect one for any space is crucial. These days, bulbs come in a variety of sizes and shapes to suit various applications. While you may be familiar with shapes like the globe, candle and spiral, the stick bulb, or tube bulb as it is sometimes referred to, is growing in popularity too. Named for its tubular shape, this style of bulb has a sleek design and modern aesthetic that will give your home a more contemporary feel.

LED stick light bulbs are long and cylindrical in shape with a diameter ranging from 1.30 cm to 5 cm. They come in a variety of lengths too and can be used in a range of lighting fixtures, from bathroom vanity lights to overhead mirror lighting where a longer bulb can provide a more even distribution of light. One of the main benefits of LED stick bulbs is their energy efficiency. Known for their low energy consumption and long lifespan, this eco-friendly bulb option emits less heat than traditional incandescent bulbs – an important feature for closed spaces where heat can build up and become a safety hazard.

The Radiant range of LED stick bulbs is also available in a day/night sensor version. This means that they register the difference between day and night when the level of light drops, prompting them to turn on at dusk and off again at dawn. Bulbs with day/night sensor capabilities are great as part of a safety and security lighting setup because they don't rely on you being home to turn them on and off again. They're also a good solution for reducing your electricity bill because you'll never forget to turn them off when you leave home. In addition, our range of day/night stick bulbs are comparatively smaller to other similar bulbs on the market, making them ideal for use in smaller fixtures.

Enquiries: www.radiant.co.za





SHEDDING LIGHT WITH PHILIP HAMMOND

Has light quality really improved over the years?

I am sure every reader has at some time during their life been in a dull, under-illuminated space or conversely in an over-illuminated space.

I remember my primary school days well during the 1950s. Every classroom had six pendant fittings with large translucent glass shades containing 250 W incandescent lamps in each. The light in our classrooms was excellent on sunny days without the lights, but dull and dismal on overcast rainy days. Of course, that was many years ago.

Moving on to the 1970s, offices were filled with artificial light in the form of fluorescent lighting, come sun or rain. There were frequent complaints from occupants of headaches, tired eyes. There were even cases of epileptic seizures caused by the flicker or waterfall effect of the fluorescent tubes.

I can recall being asked by the Department of Labour, offices, factories, machinery health and safety inspectors, to visit businesses whose lighting had failed when the inspectors did light measurement. At that time, 750 lx was required on a desk. It is no wonder that occupants complained of eye problems and headaches!

I recall my first experience of LED lighting when I visited a company in a Cape Town industrial area. I was welcomed by the MD of the company who proudly took me to their showroom which was lit by LED downlights, the type that was horribly blue and that hardly emitted any usable light. I was handed a catalogue which I could not read. I was told to wait and give my eyes a chance to adjust to the lights. Of course, my eyes could not adjust to that terrible lack of light. It was after that visit that I decided to make it my business to research all that I could possibly find to learn more about LED. I figured that it was simply not reasonable to think that anyone would invent or produce something that did not really work.

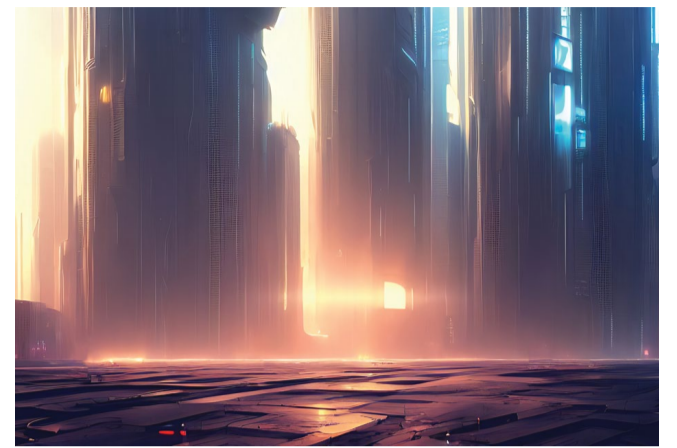
The situation generally has not improved since the arrival of LED lighting or since the widespread use of LED lighting. Those responsible for lighting design for workplaces, continued to over-illuminate workplace areas.

The reason for this is simple, SANS 10114-1: 2020 – Lighting for Interiors which is based on EN 12464-1: 2021 the European Union standard, the local standard does not explain that the task area in the majority of cases is no more than 0.5 m² to 1 m², and that the adjoining area and the general space are illuminated to lower levels. The levels stated in the standards are only applicable to the primary task area and not the other areas. The European Standards provide a detailed explanation of how each area should be lit.

I have belonged to a business club for over 12 years. We meet at a four-star hotel every Friday for breakfast and to listen to a guest speaker. When the hotel was built some years ago, the lighting was designed by an electrical consulting practice. The conference room ceilings are littered with PL lamp downlights and LED downlights around the edges – simply everywhere. The lighting is excessive. We often turn banks of lights off, in many cases because some of the LEDs are flickering. I have investigated the flickering LEDs and found that they were the cheapest available at any hardware or electrical wholesale outlet. We all know that procuring LED product on the basis of lowest price, is not the way to do it.

It continues to amaze me that after nearly two decades of LED use, clients, and professionals still need to be educated how to recognise quality LED products.

The problems are not limited to the indoor space. Street lighting is also a problem where excessive power is used and where retrofitting is the order of the day because the suppliers of LED streetlighting are forced



to use the existing infrastructure and assets rather than redesign for optimum energy efficiency. The use of white LED, around 4000 K, is not in line with many First World countries where they are moving to around 3000 K. The warmer light is more friendly towards fauna, flora and to humans. It produces less glare and is easier on the human eye. That is a subject for another edition.

I appeal to readers to be observant and take note of over-illumination in indoor spaces and light pollution in outdoor spaces. Make a note of those instances that you find and let's work towards improved lighting in every application.

The role of the professional qualified lighting designer and illumination engineer is needed for every new project. That together with continued lighting education, is our only hope of improving the standard of lighting in South Africa.

I am always available to answer any questions that you, the readers, may have.

Enquiries: phil@bhalighting.co.za



Lifetime Lighting is back

Lifetime Lighting is a beautiful range of classic and modern lighting that truly stands the test of time.

After being around for over 35 years, COVID sadly closed the company's doors in 2020, which left a massive void in the supply of quality outdoor lighting in South Africa.

Matelec, a well-known, well-established low voltage electrical goods and lighting manufacturer and distributor in Pietermaritzburg, KZN (since 1974), was thrilled to be able to re-launch Lifetime Lighting in 2022, with a slow and unadvertised approach until the company were sure that manufacturing could handle the orders.

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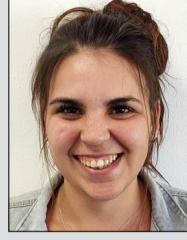


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BRIGHT SPARK

THE ARM IN THE PARCEL

One day a man received a parcel in the mail. He found a carefully packed human arm inside. He examined it, repacked it, and sent it on to another man. The second man also carefully examined the arm and then took it to the woods and buried it. Why did they both do these things?

APRIL SOLUTION

The items were used by children to build a snowman that has now melted.

JUNE 2023 FEATURES

- Tools of the trade
- Energy measurement and supply
- Lighting

JULY 2023 FEATURES

- Cables and cable accessories
- Standby and emergency power
- Lighting

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