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Fake products widespread in southern Africa

THE smuggling of counterfeit electrical products into southern Africa has intensified and, based on the results of the first ever survey to assess the situation in Africa, it was found that "counterfeiting of most common electrical products is widely spread in all African countries, representing 40% to 80% of their markets". The resultant negative economic effects impact on these countries as well as on the manufacturers of genuine electrical products. The survey, conducted by the African Press Organisation (APO) on behalf of Schneider Electric, covered 11 English- and French-speaking African countries – Cameroon, Republic of the Congo, Democratic Republic of the Congo (DRC), Ghana, Guinea, Ivory Coast, Kenya, Nigeria, Tanzania, Senegal and Uganda – from December 2013 to March 2014 – and it set out to identify the most counterfeited electrical products and brands in Africa as well as the main roads of entry and distribution. The results of the survey were released in April.

The impact that large scale smuggling has on people's health and safety, and the effect on African economies was examined along with how legislation on counterfeiting is being implemented to combat this global crime.

China

Not surprisingly, data revealed that the most counterfeited products were cables, breakers, sockets, switches, extension cords, lamps, electrical wire, fuses and contactors.

Some well-known brands were identified as being the most commonly counterfeited brands in southern Africa, among the 17 widely known brands listed in the survey.

China is cited as the main source of electrical counterfeit goods entering Africa (75% of the answers) followed by the rest of the Asian countries, although English-speaking countries and French-speaking countries differed in opinion. Interestingly, it was found that Nigeria is estimated to re-export half of its domestically produced counterfeit electrical products to other African countries.

Poor performance

According to the survey, respondents recognised counterfeit products mainly by poor performance, shape, price (counterfeits are usually much cheaper) and packaging (or absence of packaging). All the categories of respondents asked for training so that they could identify counterfeit products at "first sight".

Lethal consequences

The main consequence of using counterfeit electrical goods was listed as "loss of properties" (63%), which remarkably ranked above "death" (35%); "electrocutions" (49%); and "accidents" (51%). However, the survey noted: "While being aware of their eventual lethal consequences, respondents to the survey emphasised the private and public losses for the African countries of such an illicit trade and the widespread presence of fake products in all sectors of the economy."

The main distributors of counterfeit products were listed as street vendors, retailers, individuals, electricians and installers.

Retailers and electricians

Even though African electricians and retailers indicated they could recognise simple counterfeit electrical products, they asked manufacturers of "big brands who produce more complicated electrical products", to teach them how to distinguish "fake from genuine".

Conclusion

The survey concluded that "stakeholders understand the situation" since the struggle against counterfeiting has been going on for a long time, even though "the networks are known".

Two major shifts are being called for: the reinforcement of legal protections and actions against counterfeiters; stiffer border controls (especially against the countries that were identified as supplying more than 60% of counterfeits); increased seizures, destruction of counterfeits and convictions; and that new laws to combat counterfeiting to be promulgated to reinforce the legal basis of such actions.

The second shift is expected from manufacturers and brands: targeted campaigns to raise awareness among three priority "audiences": electricians, contractors and vocational centres; main end-users (companies and administrations) that are the primary victims; and the media as the main disseminators of information to the "greater number".

An unnamed "honourable minister of trade and industry in Tanzania" who agreed to be interviewed for the survey, declared: "Only an allegiance between manufacturers, authorities and consumers can help curb electrical counterfeiting".

Download a copy of the survey: <http://www.apo-mail.org/150322.pdf>

Type test certification for switchgear company



Johan Basson (MD, JB Switchgear Solutions) and John Balsdon (technical director, JB Switchgear Solutions) are proud of the fact that JB Switchgear Solutions recently completed a switchgear assembly type test programme at SABS-NETFA for compliance with IEC 61439, IEC 61641 and SANS 1973 standards. Basson says that these tests were done "to confirm JB Switchgear's ongoing commitment to product development and compliance with relevant standards". Says Basson: "In this instance, the company's Eagle Series switchgear assembly was tested to the latest standards. The design is well-proven, robust and user-friendly with around 30 000 tiers installed globally."

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Dimakatso Matshoga.

DIMAKATSO Matshoga, founder and managing member at Atafa Enterprises (t/a Atafala Consulting) epitomises the expression 'dynamite and diamonds come in small packages'. Small in stature, big in spirit, Dimakatso is a professional engineer registered with the Engineering Council of South Africa. Passionate about engineering and about sharing knowledge, she is involved in various initiatives for young people that promote self-mastery, leadership and technical skills.

Dimakatso has judged the Installation of the Year award at the ECA(SA)'s Presidential Awards for the past three years.

Sparks: Where were you educated?

DM: After I matriculated from Ed-U College in Qwaqwa, Free State, I went to Natal University (now the University of KwaZulu-Natal) where I obtained a BSc (Electronic Engineering). Later I obtained a post graduate Project Management diploma and an MBA.

Sparks: How long have you been involved in the electrical industry?

DM: I have been in the electrical industry since the late 1990s when I was a vacation work trainee at an Eskom power station. I have worked full-time in the electrical industry specifically for eight years.

Sparks: When and where did you start your career?

DM: My career was pretty much paved during the days of being an Eskom bursar when I would work for three months of each year at a power station, which I did for a few years. I then 'moved up' to being a junior engineer to a Pr Eng (Electrical) and then a programme manager, finally to directing

all electrical operations from a consulting and contracting platform. I have a keen interest in energy management and I now participate in various executive committees that speak to the industry.

Sparks: What are the greatest changes you have seen over the years?

DM: Automation has been the area of most change (thanks to more accessible broadband) and there has been a huge evolution in energy management along with renewable energy considerations as the world gradually migrates to green technologies and a green economy.

Sparks: What major projects have you worked on and what is your greatest accomplishment?

DM: My employment background has been divided equally between the telecommunications and the electrical industries, and I have been privileged to have worked on some exciting projects. Firstly, the Gautrain project, where I was responsible for systems interfaces with the prime focus on requirements and interface management up to the operations and maintenance phase of the project.

As programme manager, I also led a key communications management project that was the first of its kind in the country. I have managed both electrical design and construction projects and, through my research in Eskom, I contributed towards the review of the National Energy Regulator (NER) codes in 2003 and the compiling of training manuals for engineers-in-training.

I trained Eskom staff on power line carriers and fibre optics; conducted tele-protection signal design and fault investigation on various transmission links, including Apollo-Cahora-bassa; and participated in engineering energy audits.

Sparks: Have you won any awards?

DM: Yes, I have been blessed to have won an 'Excellence and Dedication' award in Eskom Transmission Technology; as well as a similar award nomination by Bombardier Transport on the Gautrain Project.

Sparks: Who has been your inspiration or have you had a mentor who has influenced your career?

DM: I have had quite a few mentors who have guided me academically and technically and who have taught me about leadership and strategies – and my faith has guided me when my mentors were out of reach.

Sparks: What, to your mind, is one of the biggest challenges facing the industry at this time?

DM: Transformation is still a mammoth challenge; and changing mind-sets to seek to leverage each

other's skills, abilities and capabilities so that we all work towards nourishing a broader pool of all the industry's players.

Sparks: What do you enjoy most about your job?

DM: I really enjoy formulating strategic and technical engineering management (technical specifications, policies, and procedures) because I thrive on strategic and sustainable problem solving.

Mentoring others' studies and work experiences as they work towards professional registration is a keen interest of mine. And it has been a great honour to judge entries for the ECA presidential excellence awards.

Sparks: How do you motivate your staff?

DM: I believe in rewarding and celebrating successes and building on individual challenges through serving people's basic social needs before addressing their work – because people want to know they are noticed – from labourers to executives.

Sparks: If you could 'do it all again', would you change anything? If so, what would that be?

DM: It's been a too serious journey for me so I'd probably 'operate from wisdom', relax and laugh more.

Sparks: Would you advise a person leaving school to enter the electrical industry? And why?

DM: Absolutely! With the scarcity of qualified electricians, the growing infrastructure development and the emphasis on technical compliance, the industry is here to stay and as it evolves it will offer major growth opportunities for individuals and for companies.

Sparks: What is your advice to electrical contractors and/or electrical engineers?

DM: I advise people to purposefully set out to comprehend the fundamentals of the electrical profession and to collaboratively appreciate each other's roles as

designers and implementers along the electrical value chain.

Sparks: What is your favourite quote?

DM: "Wisdom is the principal thing; therefore get wisdom." This is a quote from a treasured personal advisor.

Sparks: Name three things on your 'bucket list'?

DM: To fully live out my life's purpose; to dance more; and travel the world.

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Cable company acquires Level 2 B-BBEE status



Celebrating Alvern Cables' recently acquired Level 2 B-BBEE status, are: Willem Smit (financial director); Laurence Hendy (managing director); Dorothy Botsi-Thulare (executive director); Jaycen Padiachy (works director); and Stephen Liasides (commercial director).

ALVERN Cables – a privately owned business, which started manufacturing low voltage electrical cables for domestic and industrial use nearly 50 years go – has announced that Dorothy Botsi-Thulare and Jaycen Padiachy have joined the board as shareholders.

Padiachy has been appointed as works director and Botsi-Thulare as executive director, joining Laurence Hendy (managing director), Willem Smit (financial director) and Stephen Liasides (commercial director).

Padiachy has been a member of the Alvern

team for the last 20 years – and Hendy says his "hard work, loyalty and devotion to the company along with his dynamic abilities have earned him this well-deserved appointment".

Botsi-Thulare, an attorney and partner with Sim and Botsi Attorneys Inc and also CEO of the Botho Ubuntu Group, won the 'Technology for Women in Business' award in 2013 and recently received the 'Enterprising Women Award 2015' in the USA. She says, "It is a privilege to be part of this technical business. It's an opportunity for me to bring innovation into the company, develop people skills, ensure that environmental concerns are being addressed and identify leaders and future industrialists from disadvantaged backgrounds."

Commercial director, Stephen Liasides, says, "We are happy with the new influences on the board and in the company and are excited about acquiring Level 2 B-BBEE status and implementing plans for the company's future growth."

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Working knowledge by Terry McKenzie-Hoy

The problems and pitfalls of hotel rooms

ELECTRICALLY speaking, hotel bedrooms are deceptive, difficult places to design. "What?" (you ask) "How hard could it be?" Well, it's not as easy as you may think.

Very often, the walls of the bedrooms are coincident with the support columns of the structure – perhaps not every room, but at least every second room. Considering the power supply to the room, the incoming supply will generally be in the form of a power circuit and a lighting circuit, which enter via a conduit in the ceiling

void above the door leading into the room.

Conduits must take the two circuits into the room but, if the structural column is in the way, you can't chase into it, so the conduits have to either follow the wall that doesn't have the column or (better) should drop to conduits in the floor screed. The problem with the latter is that people will stand on your conduit when laying the screed. The problem with the former is you have to chase a long way to get to the bed-head and also pick up the power points at the desk or vanity

slab. Naturally, when you tender on the project, the exact location of bed and vanity may not be known but, trust me, these will change each time the interior designers meet for a cup of coffee.

There are some things you can depend on: there will be no ceiling in 90% of hotel room constructions and you will not be able to run conduit from one side of the room to the ceiling on the other side. You should feed each and every room from three 20 A circuit breakers: one supply for lights, one for plugs and one for the

air conditioner. I suggest you use 4 mm² wire and supply all the circuit breakers from a 20 mA earth leakage. You may think this is over the top but, trust me, you would not want a situation where you have to cut power to circuits in a number of rooms just to work on one circuit. And, yes, 4 mm² wire is hefty but there may be guests who could start a fire while arc welding in the room and they will blame the wiring!

For guests who connect heavy equipment to the power circuits in the room, all you want is a simple trip on overload (and to sleep peacefully even if you stayed up to watch 'The Towering Inferno' on television). Oh, yes ... above the corridor ceilings do not use PVC trunking to carry the electrical circuits. It's too easy for the wire to be stolen. Do use an insulated wire for earths – it's harder to recognise than bare copper and is thus not often stolen.

Back to the room: Ideally the bedside lights are supplied by one plug, which has a socket directly behind the bed – which makes it difficult to steal. At the vanity, do not think that a German socket outlet and one from the USA are the same – they may both have two pins but they are different.

Don't forget the supply for the toilet extractor fan. Then you should also have a socket outlet for the housekeeper's vacuum cleaner – not in the room but rather outside in the corridor. The cleaner has to run a power cord from the corridor into the room. This ensures the door stays open and the cleaner can't duck into the room and close the door – which means that guests can't easily blame the cleaners for stealing stuff.

More generally, my advice is to 'claim your space'. If you are asked how much space you need for rising ducts, sub-distribution boards and switch rooms, always exaggerate the dimensions by 20%. Thus, if you need a switch room that is 3 m x 4 m x 2.5 m you should ask for 3.5 m x 5 m x 3 m. At some stage the architect will make whatever you asked for smaller – so be prepared.

Finally, remember the 'hotel factor' – if you make a mistake in a room that costs R2 000 to fix and the same error is repeated in 200 rooms ... well, you will have a 200 x R2 000 problem, which equals a lot of money.

Be very, very careful not to make mistakes – so check and then double check.

Four short courses at Midrand Expo

FOR the first time, four Ashrae short courses will be presented at this year's Frigair Expo 2015, taking place from 3 to 5 June at Gallagher Convention Centre in Midrand. The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (Ashrae) training courses are internationally recognised.

The four courses are:

- Designing high-performance healthcare HVAC systems (Mike Meteyer): This course introduces experienced mechanical engineers to the unique requirements of healthcare HVAC design.
- IAQ best practice for design, construction, and commissioning (Hoy Bohanon): In addition to identifying key issues, this course will point out what parts of the project process are especially vulnerable to risk.
- Energy management: best practices (Richard Pearson): This course weaves together energy management principles and practical experience of successful energy managers.
- Design of commercial ground source heat pumps (Dr Gary E Phetteplace): The course examines the economic analysis of ground source vs more traditional systems and what is necessary to design an effective and efficient ground source system.

The cost of the courses (per course) is R2 280 (including VAT) for SAIRAC and Ashrae members; and R3 306 (plus VAT) for non-members.

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OL06A

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OL06B

Room occupancy sensor - Rated Load: 1200W (incandescent) 300W (CFL) Rated Voltage 230VAC, Detection area 360°, Installation Height: 2.2 - 4m, detection area Adj: 3 - 12m, 3 Sensors.



OL41

Room occupancy sensor - Rated Load: 1200W (incandescent) 300W (CFL) Rated Voltage 230VAC, Detection area 360°, Installation Height: 2.2 - 4m, detection area Adj: Max 6m, 1 Sensor.



OL357

Room occupancy Micro sensitive sensor - Rated Load: 1200W (incandescent) 300W (CFL) Rated Voltage 110-130VAC 220-240VAC, Detection area 360°, Installation Height: 1.5 - 3.5m, Time delay: 10s ± 3s to 12min ± 1 min, Detection area Adj: 1 - 8m, 1 Sensor.

MICRO SENSITIVE SENSOR UNIT AND MICRO SENSITIVE LIGHT (CFL+LED) - IP44



OL701MS

Micro sensitive Sensor unit only - Rated load 1200W (incandescent) 300W (CFL), Rated current: 230VAC, Detection area 360° Detection area Adj: 2 - 16m, Sensor: x 1, Installation height: 1.8-4m. HF system: 5.8GHz CW radar ISM Band; Transmission Power: < 10mW. Can be retro fitted with existing fittings.



OL407ML

Micro sensitive Sensor Light - Rated load: 10W(160PCS) LED, Rated Voltage 110-240VAC, Detection area 360° Detection area Adj: 1 - 8m, Sensor: x1, Installation height: 2 - 4m. HF system: 5.8GHz CW radar ISM Band



OL702ML

Micro sensitive Sensor Light - Rated load: 60W/E27 (globe not included), Rated Voltage 230VAC, Detection area 360° Detection area Adj: 2 - 16m, Sensor: x 1, Installation height: 1.8-4m. HF system: 5.8GHz CW radar ISM Band; Transmission Power: < 10mW

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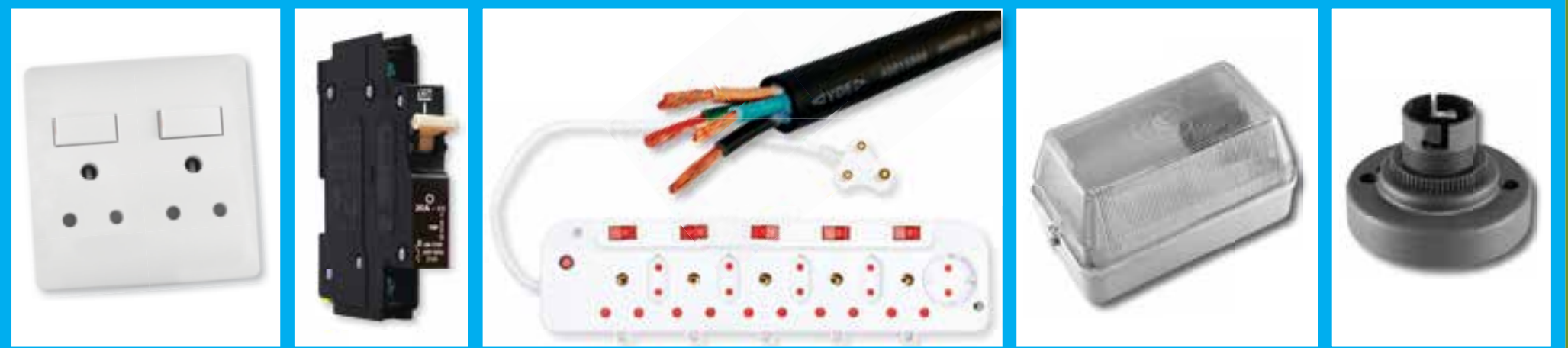
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For an updated list of all SAFEhouse members, please go to:
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Mark Palmer, Gauteng Electrical Inspection Authority

Inspection Reports and Test Reports – a contradiction or are they just similar?

OVER the years, I have expressed my views and, in return, have received my fair share of scorn and derision from electrical contractors and especially Registered Persons. From time to time, I have expressed my thoughts on testing and inspection and I thought I should raise some challenging issues again.

Whilst at all times reference must be made to SANS 10142-1 and the inspection and testing requirements encompassed therein, it is becoming increasingly apparent that many Registered Persons perceive these requirements as the 'be all and end all' of the subject. Even though the ultimate 'product' here is the issuing of a *valid* Certificate of Compliance, how we get there is still an incongruity.

In dealing with this important aspect, the one element that is seldom discussed is an 'Inspection Report'. Here I refrain from using the term 'Test Report' as this report is more specifically referenced in both SANS 10142-1 and the Electrical Installation Regulations as being part of the documentation required in order for a Certificate of Compliance to be deemed *valid*.

What I am more specifically referring to here is a report comprising of both visual aspects of an electrical installation as well as instrumentation tests. This report should be compiled by every Registered Person prior to the issuing of prescribed documentation. In essence, this is the 'record' of the electrical installation at the time it is inspected and tested and it details all parts and components of the electrical installation as defined.

This 'Inspection Report', by its very nature, is the property of the Registered Person and provides all required information in order for the 'Test Report' to be completed. In referring to the 'Test Report', it is clearly evident that it constitutes a 'summary' of the technical merits of the electrical installation being certified. All detailed aspects would still be recorded on the Inspection Report.

In my view, unless due diligence is given to this Inspection Report, a Registered Person opens themselves up to potential legal liability should something go wrong. Understanding that the issued Certificate of Compliance is a 'living' document and, in essence, will exist for as long as the electrical installation does, it is critical for the Registered Person to have evidence of what was inspected at the relevant point in time.

When dealing with legal matters, I am often confronted with statements that claim "a Certificate of Compliance is only valid for the day on which it was issued"; or "a Certificate of Compliance is only valid for three months" (or "six months" or "two years"). This is an aberration of prescribed legislation that must be fully understood. The legal issues applicable here are clear in that:

- 1 The Registered Person is responsible to ensure that a valid Certificate of Compliance is issued for electrical installation work.
- 2 The user is responsible to ensure that all modifications, alterations and additions are accompanied by additional Certificates of Compliance.

- 3 The user is responsible for the maintenance of an electrical installation.
- 4 The only reference to a time frame in the Regulations is applicable to electrical installations that are sold and here a prohibition is placed on the user that no change of ownership is allowed if a Certificate of Compliance is older than two years.

Herein lie my concerns: Registered Persons are deemed to be negligent when they are not in possession of a detailed inspection reports, after the fact. When additions, modifications and

alterations have been carried out at an electrical installation, the burden of proof rests with the Registered Person to substantiate that those additions, alterations and modifications did *not* exist at the time that he or she signed the Certificate of Compliance. In the absence of such proof, the Registered Person may very well be held accountable for electrical installation work that was, in fact, not done by him or her.

This legal position should be untenable, but it would be enforced on the "balance of probabilities". As I have discussed in many previous

columns, where such inspection and test reports are inadequate, any fault or defect found in other parts of the electrical installation not affected by alleged alterations, additions or modifications, the scale would certainly tip against the Registered Person. Registered Persons can easily protect themselves from being found legally liable for other persons' responsibilities if they keep proper records.

And, in this context, adequate record keeping is achieved by being in possession of *detailed* Inspection Reports.

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MAKE A SPECTACLE

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Sparkling project in Cullinan for local panelbuilder

A LEADING panelbuilder, JB Switchgear Solutions, was recently awarded two multimillion-Rand contracts by Petra Diamonds for the design, manufacture and supply of motor control centres (MCCs) for its Cullinan and Finsch Mines.

JB Switchgear's Johan Basson says the primary purpose of the C-Cut Phase 1 project is to extend the life of mines and to ramp up the rate of mining. He explains: "The scope entails two areas: firstly, the development of infrastructure to mine the new C-Cut Phase 1 block, which consists of 11-million cubic metres of ore; and secondly, the deepening of the two existing shafts. "The rock shaft will be deepened by 354 m, and the men/material shaft will be deepened by 80 m," he says, adding that the

winders and headgear will be upgraded to handle the increase in tonnage. "The JB Switchgear scope includes 10 Eagle Series motor control centres that contain over 200 DOL starters ranging from 10 kW to 200 kW. In addition, a number of variable speed drives (VSDs) between 18.5 kW and 160 kW were installed, as well as soft starters ranging from 160 kW and 200 kW," continues Basson. "Incomers up to 2 500 A were also supplied. The communication protocol used is Profinet."

Basson says that, at Finsch mine, the run-of-mine (ROM) production will be increased from about 2.9 Mt/a at present to 3.5 Mt/a and that carat production will move up from 1.88-million carats to around 2-million carats.

"JB Switchgear's scope in this instance includes five Eagle Series motor control centres, which include over 70 DOL starters between 0.37 kW and 200 kW, as well as a variety of VSDs and soft starters ranging from 30 kW to 220 kW; the incomers are rated at 1 600 A. Here also, the client chose Profinet as the communication protocol."

JB Switchgear's Eagle Series of assemblies carry type test certification for compliance with IEC 61439/SANS 1973-1 and IEC 61641 standards.

"The design is well-proven, robust and user-friendly, with more than 30 000 tiers installed globally," he says, "and JB Switchgear is ISO 9001 certified for its quality management system."

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Association grows in leaps and bounds

PIERRE Nothard, the chairman of the SAFEHouse Association, has announced that eight more companies have, this year, joined the Association, which is dedicated to fighting the scourge of sub-standard and unsafe electrical products in the South African market. This brings the number of members to 32 – up by 15 since January 2014.

The new members are:

- Matelec, a Pietermaritzburg-based manufacturer, importer, exporter and countrywide distributor of electrical products.
- Electrical Warehouse, an independent wholesaler of electrical products, located in Steeldale, South of Johannesburg.
- WACO, an importer and countrywide distributor of electrical and lighting products. WACO is headquartered in Cleveland, Johannesburg.
- Swan Electrical Distributors, manufacturers and countrywide distributors of electrical equipment and solar systems, based in Midrand, Gauteng.
- The Electrical Contractors Association, an employer organisation representing approximately 5000 registered electrical contractors countrywide.
- Zap Wholesalers, an independent wholesaler located in Centurion, is an importer and distributor of a wide range of electrical products to resellers, in particular to cash-and-carry channels
- The Copper Development Association. This organisation is a member of a worldwide initiative to promote the use of copper and, as indicated by its name, has the African continent as its target market.
- Ausma Trading, the local subsidiary of a Chinese manufacturer of electrical products, joined the association on 1st April. Ausma is based in Isando, Gauteng, and is establishing manufacturing operations in South Africa for certain products.

Nothard extended a warm welcome to the new members. "The SAFEHouse Association will continue to build its brand to be synonymous with quality and safety through the integrity and self-regulation of its members," he says.

For more information email Pierre Nothard at pierren@safehousesa.co.za

Enquiries: 083 414 4980

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New series of thermal imagers with touchscreen

COMTEST has launched Fluke's new 'Expert Series' thermal imagers – the TiX560 and TiX520 especially for users of infrared devices who need an ergonomic design with maximum flexibility that allows for easy navigation over, under and around hard-to-reach objects.

With an articulating lens that rotates a full 180° and the largest 5.7 inch touchscreen LCD, Fluke's new TiX560 and TiX520 can aim and focus from a comfortable angle and easily capture a target that, in the past, was impossible to see. They also feature the leading spatial resolution for a 320 x 240 infrared camera in its class – meaning 150% more viewing area, making it easier to annotate, edit and analyse images.

Users can instantly capture highly detailed images and begin analysing images while still in the field with on camera analytics. Incredible image detail is possible from a distance or close up and the SuperResolution mode, available on camera in the

TiX560, turns the 320 x 240 images into 640 x 480 images – four times the resolution and pixels.

Features of the TiX560/520:

- Navigate over, under and around objects with the 180° articulating lens.
- In-field analysis with post-capture image processing – edit emissivity, background temperature, transmissivity, palettes, colour alarms, IR-fusion and enable/disable markers – all on camera.
- Premium image output in high temp applications by combining multiple sequential frames of data into one with Image Sharpening (TiX560).
- Finding subtle temperature differences is easier—instantly improve thermal sensitivity from 45 mK to 30 mK with filter mode (TiX560).
- Monitor processes with video recording, live video streaming, remote control (TiX560 only), or auto capture.
- Save and share images from the

field with the office via Fluke's Connect™ app.

Premier focus technologies

Getting in-focus images can be painstaking with manual focus systems, and some autofocus systems may not be exactly what is required for the task.

Fluke professional and expert series cameras include some of the most innovative focus technologies available, such as Fluke's LaserSharp auto focus.

Image sharpening allows for premium image output in high temp applications by combining multiple sequential frames of data into one (TiX560 only).

Quality optics

Fluke uses only 100% diamond-turned germanium lenses covered with a specialty coating. This is the most efficient material to transmit energy to the detector to produce high quality infrared images.

Spatial resolution

The best spatial resolution has the larg-



est number of detector pixels within the smallest field of view.

This combination is measured in mRads, and the smaller the number,

the more detailed the image. Fluke thermal imagers' mRads range from 0.6 mRad (best) to 5.6 mRad.

Enquiries: +27 10 595 1821

Identify any cable or component



INSTALLATION professionals know what a nightmare unidentified cables and components can be. Professional identification labels take away this frustration and increase job efficiency. With a Brady portable printer you can print any label you need on-site in seconds, even die-cut and custom labels.

A flexible wire identification solution – wrap-around labels in multiple colours equipped with a quality adhesive – is the most popular solution to identify cables and wires. Identifying text or code can be printed multiple times on

each label, enabling 360° information visibility. Very often self-laminating wrap-around labels are used for extra durability and legibility.

Brady offers self-laminating labels and wrap-around labels in great colour variety – die-cut and on continuous rolls – all of them printable on location with a Brady Mobile Printer.

Locatable identification

Sleeves are a locatable identification solution with strong durability and staying power. Slide them over a cable before termination. After cable termination, slide the sleeves into position and heat shrink to fix them into place. Any Brady mobile printer can print a selection of quality sleeves in various colours that are halogen-free, diesel-resistant or high temperature resistant to suit specific requirements and standards.

Don't forget your components

Brady also provides on-site printable identification solutions for components, such as the Engraved Plate Replacement Label, which is made out of polyethylene foam and laminated polyester. It offers a raised

profile similar to an engraved plate, but at a much lower cost and greatly increased flexibility.

On-site and on demand

There are many ways to source the identification solutions you need, but the most flexible way is to print your own labels on-site and on demand. Modern portable label printers, such as the BMPTM21-PLUS and BMPTM41 label printer, or the BMPTM51 and BMPTM53 label maker, auto-calibrate so you can easily call on their entire versatile label range, including continuous labels and die-cuts, to identify any cable or component with greater ease.

Larger mobile printers, like the BMPTM71, even print custom labels and a great variety of sleeves, wrap arounds, flags, tags and component labels for maximum flexibility.

With a quality Brady printer and a few cartridges of durable identification solutions, identifying cables and components is easy and prepares the installation for fast future upgrades or maintenance.

To receive Brady's free guide book 'Identify any Cable and Component' and browse through the professional cable and component identification solutions, email emea_request@bradycorp.com

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Armoured cables no problem for precision cable cutter



GARRY Lumpe Imports has introduced a new quality product from Knipex – a German manufacturer of professional tools that has been an independent, owner-managed family company for four generations.

"As soon as you pick up the Knipex ratchet cable cutter, you know you are handling a quality, German precision-engineered tool," says Lumpe.

The ratchet cable cutter cuts through steel wire armoured cables with diameters of up to 45 mm to 380 mm² (for example, 4 x 95 mm²) using a one- or two-handed

operation. The tool is sturdy yet light – weighing only 800 g – and its compact design – 315 mm in length – makes it easy to use and ideal for working in confined spaces.

"The precision-ground blades and induction hardened cutting edges cut smoothly and neatly without crushing the cable," says Lumpe.

"Made with high-grade special tool steel that has been forged and oil-hardened, the cutter's innovative design offers a high leverage, three-stage ratchet-drive," adds Lumpe.

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BEKA Schröder
Bellco
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Eaton Electric SA
Emerson Network Power
Invirotel
JB Switchgear Solutions
Legrand
Matelec
Omron
Phambili Interface
Power Panels and Electrical
Power Process Systems
Radiant Group
S & C Electric Europe
Schneider Electric
Shuttle Lighting Control Systems
Solar Con
VS Lighting Controls
Voltex
Voltex Lighting
Waco
Zest Energy (Zest WEG Group)

Distributors

ACDC Dynamics
ARB Electrical Wholesalers
Aurora Lighting
BEKA Schröder
Bellco
Citilec
Eaton Electric SA
Eurolux
Invirotel
Major Tech
Matelec
MCE Global Suppliers
Osram South Africa
Phambili Interface
Province Lighting
Solar Con
Superlume
SRE Developments
VS Lighting Controls
Voltex
Voltex Lighting
Waco
Zest Energy (Zest WEG Group)

Solar (photovoltaic) electricity generation

ABB South Africa
Solar electricity generation
Aberdare Cables
Solarflex, Solardac, Lotox Bells & Mains
ACDC Dynamics
Solar electricity generation
Eaton Electric SA
Components for solar electricity generation
JB Switchgear Solutions
Solar (photovoltaic electricity generation)
Omron
KP100L inverter – 3MPPT voltage range
S & C Electric Europe
Solar (photovoltaic electricity generation)
Solar Con
Agent IBC Solar AG Germany

Solar batteries

ACDC Dynamics
Solar batteries
S & C Electric Europe
Solar batteries

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Aberdare Cables
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Arvinash Ramdass
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Vanessa Aroomugam
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Legrand
Luk Ivens
Major Tech
Werner Grobbelaar
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Sales
Omron
Sales
Osram
Sales
Phambili Interface
Alex Lockyer
Power Panels and Electrical
Andy van der Merwe
Power Process Systems
Michael du Toit
Province Lighting
Dereck Abbey
Radiant Group
Sales
S & C Electric Europe
Cleverson Takiguchi
Schneider Electric
Nico van der Merwe
Shuttle Lighting Control Systems
Reg Smith
Solar Con
Dieter Dilchert
SRE Developments
Cheryl Hird
Superlume
Willie Garbers
VS Lighting Controls
Barry Hall
Voltex
Hugh Ward
Voltex Lighting
Marc Rudman
Waco
Jaco Coetzee
Zest Energy (Zest WEG Group)
Alastair Gerhard

Wind electricity generation

Aberdare Cables
Lotox Bells & Mains, Voltex XLPE, Windac
ACDC Dynamics
Wind electricity generation
Eaton Electric SA
Components for wind electricity generation
S & C Electric Europe
Wind electricity generation
Solar Con
Agent Kestrel Wind

Solar water heating

ACDC Dynamics
Solar water heating systems
Voltex
Full range solar water heating

Micro-hydro electricity generation

Eaton Electric SA
Components for micro-hydro electricity generation
Solar Con
Agent Lahmeyer International
Zest Energy (Zest WEG Group)
Micro-hydro electricity generation

Heating

Bellco
Full range of heaters
Matelec
Full range heaters
MCE Global Suppliers
Onesto Oracle range thermostat/underfloor heating wiring accessories; MCE temperature controllers and thermocouples
Radiant Group
Infrared 2x600W and 3x500W bathroom heaters
Schneider Electric
Under floor, under tile and under carpet heating
Voltex
Full range of heaters
Waco
Full range of heaters

Ventilation

ACDC Dynamics
Ventilation products
ARB Electrical Wholesalers
Full range of ventilation products
Bellco
Ventilation systems
Eaton Electric SA
Components for ventilation systems
Radiant Group
Wall, ceiling and window extractor fans
Schneider Electric
Ceiling exhaust fans with and without light; window exhaust fans
Voltex
Ventilation products
Waco
Ventilation products

Solar lighting

Aberdare Cables
Solarflex, Solardac
BEKA Schröder
Full range of solar lighting
ACDC Dynamics
Full range of solar lighting
Citilec
Full range of solar lighting
Eaton Electric SA
Full range of solar lighting
Eurolux
Solar spikes, solar kits, mobile solar kits
Voltex
Full range of solar lighting
Waco
Full range of solar lighting

Lighting control

ABB South Africa
Full range of lighting controls
ACDC Dynamics
Lighting control systems
ARB Electrical Wholesalers
Lighting control systems
Aurora Lighting
Lighting and lighting controls
BEKA Schröder
Full range of lighting controls
Bellco
Full range of lighting controls
Citilec
Full range of lighting controls
Crabtree Electrical Accessories
Occupancy sensors – passive infrared, microwave
Eaton Electric SA
Components for lighting control systems
Eurolux
Full range of switches, sensors and timers
Legrand
Switches, dimmers, time switches, switch sensors and home automation
Major Tech
Suppliers of compact power meters, power quality analysers, current loggers, current and voltage loggers and leakage loggers
Matelec
Full range lighting control
MCE Global Suppliers
O-Lite day-night switches; O-Lite range of energy saving occupancy sensors; O-Lite Micro Sensitive Sensors and LED light fittings; Onesto Oracle range of indoor and outdoor wiring accessories
Osram
Full range of commercial, industrial, domestic and specialised lighting control; electronic control gear for fluorescent, metal halide and low voltage halogen lamps; CFLs
Power Panels and Electrical
Full range of lighting control systems
Province Lighting
Full range of lighting and lighting control systems
Radiant Group
Simple switch for lighting automation/control; passive infrared occupancy sensors
Schneider Electric
CBus home automation system
Shuttle Lighting Control Systems
Dimmers for LED, incandescent and halogen; building management systems
Solar Con
Full range of lighting control and LED lights
SRE Developments
Distributor of lighting control systems
Superlume
Importer of industrial and commercial light fittings and lamps - LED fluorescent, halogen, HID, etc
Voltex
Full range of lighting controls
Voltex Lighting
Full range of lighting controls
VS Lighting Controls
Ballasts (magnetic and electronic for linear and HID use); lampholders, capacitors and ignitors
Waco
Full range of lighting controls

Solar (photovoltaic) water pumping

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Range of solar water pumps
ACDC Dynamics
Range of solar water pumps

Meters

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ACDC Dynamics
Full range of meters
ARB Electrical Wholesalers
Full range of meters
Bellco
Full range of meters
Eaton Electric SA
Components for meters
Invirotel
Full range of meters
Matelec
Full range of meters
MCE Global Suppliers
MCE Panel ammeters, voltmeters
Phambili Interface
Full range of meters
Power Process Systems
Full range of meters
Radiant Group
Meter kW/h S/P 20(80A); Meter kW/h T/P 30(120)A
Voltex
Full range of meters
Waco
Full range of meters

Air conditioning

Eaton Electric SA
Components for air conditioning systems
Bellco
Full range of air conditioners
Emerson Network Power
Precision cooling offering pPUEs as low as 1.03 (Liebert brand)
Radiant Group
Modern design split air conditioners with heating and cooling
Voltex
Full range of air conditioners
Waco
Full range of air conditioners

Water heating

ACDC Dynamics
Water heating products
MCE Global Suppliers
DIN rail and mini rail geyser timers
SRE Developments
Water heating systems
Voltex
Water heating products
Waco
Water heating products

Solar hybrid systems

ACDC Dynamics
Solar hybrid systems
Eaton Electric SA
Components for solar hybrid systems
Emerson Network Power
NetSure Hybrid Solution
S & C Electric Europe
Solar hybrid systems
Solar Con
Full range of solar hybrid systems

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Practical range of industrial plugs and sockets now in SA



SCHNEIDER Electric has introduced its high performance industrial plugs and sockets range, PratiKa, to the local market. Kadra enclosures, specifically designed to embed PratiKa sockets, complete the range, making it the ultimate system for electrical distribution in locations requiring weatherproof equipment.

"This wide range of PratiKa plugs and sockets is the result of Schneider Electric's experience and expertise. It is a complete range, available for the 16 A, 32 A, 63 A and 125 A with degree of protection IP44 and IP67 in the wander, panel and wall versions," says Christo Janse van Rensburg, product manager: final distribution, at Schneider Electric South Africa.

He adds that the solutions are especially fast to connect, as well as being safe, functional and ergonomic,

easy-to-use and intuitive.

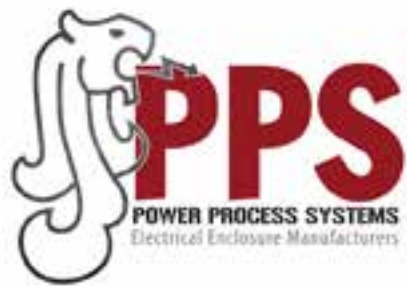
Furthermore, complying with IEC 60309 standards, all the PratiKa industrial sockets have a lock or holding mechanism, which keeps the plug firmly locked in the socket, preventing it from being pulled out involuntarily. Sockets with an interlock switch have been designed to meet the safety requirements and, in particular, to prevent plug insertion or removal while the socket is under load.

The interlocking device allows closure of the main switch and, subsequently, the power supply only when the plug is fully inserted in the socket, and when complete mechanical and electrical connection has occurred between the sleeves and pins. Plug removal is possible only when the switch is in the 'off' position.

"The use of these solutions is compulsory in accordance with the regulations in force, such as in places where there is a risk of explosion or fire. However, in order to prevent dangerous contacts capable of causing overheating, and consequently insulation deterioration or the outbreak of a fire, it is always advisable to adopt safety measures. In this way, the user has the guarantee that current can only be accessed under optimum safety conditions with the plug correctly inserted," adds Janse van Rensburg.

The range is designed to suit all needs and all kinds of environments within the tertiary and agricultural sector, industry, workshops, on building sites, as well as indoor and outdoor of any kind of building.

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IP65 cabinets for safe installation



THE Plexo³ range from Legrand, which consists of weatherproof cabinets, multi-function sleeves and accessories – has a spacious design, with no constraints on wiring requirements.

This range, with a fully reversible door and cabinet, ensures optimised cable runs and efficient cable organisation in commercial and industrial environments.

The design of these recently launched cabinets provides plenty of space behind the rails (a two-position rail, with depth adjustment), a space of 150 mm between the rails and 38 mm space at the side allowing the cables to run easily. There are 11 sizes of cabinets available, with two-, four-, six- and eight- modules, as well as 12 and 18 modules.

These self-extinguishing (resistance to incandescent wire [650 °C]) cabinets can accommodate Legrand's Lina 25 pre-drilled plates for the integration of non-modular products – including transformers and power supplies – in combination with solid faceplates. DPX MCCBs are easily installed on the two-position rail with depth adjustment and Osmoz industrial control units can also be fitted onto the solid faceplates.

Designed for quick and safe installation, the modular cabinets have a removable faceplate for easy maintenance on individual rows. Other features for efficient installation include rails that can be individually removed and a removable chassis for wiring outside the cabinet. These units can be fitted with terminal blocks which can be easily repositioned at the top and bottom of the box.

Plexo³ cabinets, with UV treatment, have an IP65 Index Protection rating for protection against dust and jets of water from all directions. Shock-resistant polystyrene is used in the manufacture of these units and an IK09 rating means enhanced protection against mechanical impact. A flush mounted lockable door handle ensures improved shock protection and a double closing point has been designed for a reliable seal.

The joining kit allows cables to be run horizontally or vertically between the multifunction sleeve and the cabinet or between two cabinets with no compromise to the IP65 protection rating.

Accessories have been specially designed for effortless tool-free fitting and removal. Different sizes of direct piercing end caps and knockout cable entries can be mounted at the top and bottom of the cabinet. Cable glands are easily fitted according to exact requirements and hinges hold the cover for easy access to the cables.

This range is available from Legrand's national distributor network, which also offers a technical advisory and back-up service.

Enquiries: +27 11 444 7971



Assemblies manufactured to SABS 1765 for the safety of distribution boards



The OHS Act: functions of the chief inspector and inspectors' special powers

THIS month we bid farewell to the Occupational Health and Safety Act (Act 85 of 1993) – but not entirely ... As I've explained over time, the Occupational Health and Safety Act is the 'starter' or 'main' document concerning all things related to health and safety in the workplace and, particularly in our case, all things electrical. The Occupational Health and Safety Act also gives legislative life to particular industries by way of the Regulations, which form part of the Act ... but more about that a little later on.

So, to partly conclude with the 'main body' of the Occupational Health and Safety Act (Act 85 of 1993) I will summarise a fairly large portion; in fact, I will condense Sections 29 through 34 that deal almost exclusively with the Department of Labour's inspectors and inspectorate. What is of value to us in the electrical industry is to know that there are systems in place to deal with all kinds of things legal in terms of the Act.

Let's have a look at the sections ... we'll start with Section 27 as it appears in the Occupational Health and Safety Act:

27. Designation and functions of chief inspector

(1) The Minister shall designate an officer serving in the Department as chief inspector for the purposes of this Act.

(2) The chief inspector shall perform his functions subject to the control and supervision of the Director-General of the Department and may perform any function assigned to an inspector by this Act.

(3) (a) The chief inspector may delegate any power conferred upon him by this Act, excluding a power referred to in section 35 (1) or delegated to him under section 42, to any other officer or authorize any such officer to perform any duty assigned to him by this Act.

(b) No delegation of a power under paragraph (a) shall prevent the exercise of such power by the chief inspector himself.

(4) Whenever the chief inspector is absent or unable to perform his functions as chief inspector or whenever the designation of a chief inspector is pending, the Minister may designate any other officer serving in the Department to act as chief inspector during the chief inspector's absence or incapacity or until a chief inspector is designated.

(5) Any person who immediately prior to the commencement of this Act was designated as chief inspector under section 19 of the Machinery and Occupational Safety Act, 1983 (Act No. 6 of 1983), shall be deemed to have been designated as chief inspector under subsection (1) of this section.

The main thrust of this section is the fact that the Minister shall only appoint someone as chief inspector if this person is working for the Department at the time. It is interesting to note that it can be expected of the chief inspector to perform the duties of one of his inspectors. Does that ever happen?

As stated in subsection (3) the chief inspector can delegate his duties, effectively getting his job done through others. I would love to be in a position to just pass on my job and its responsibilities and get paid for it, too. I am tempted to elaborate on the state of affairs regarding communication and the follow-up of complaints by the Department (and, in particular, the inspectorate) but right now there is enough negativity

in all spheres of life, therefore I'll refrain.

And so onto Section 28, which states:

28. Designation of inspectors by Minister

(1) The Minister may designate any person as an inspector to perform, subject to the control and directions of the chief inspector, any or all of the functions assigned to an inspector by this Act.

(2) Each inspector designated under subsection (1) shall be furnished with a certificate signed by or on behalf of the Minister and stating that he has been designated as an inspector: Provided that if his designation as inspector is limited to any particular function or functions, his certificate shall state such limitation.

(3) Whenever an inspector designated under subsection (1) performs a function under this Act in the presence of any person affected thereby the inspector shall on demand by such person produce to him the certificate referred to in subsection (2).

The main difference between Section 27 and Section 28 is the fact that the Minister can appoint anyone as an inspector, as opposed to the chief inspector who must be appointed from the pool of departmental employees.

Another difference that should be noted is that inspectors can be appointed in a specific sector or industry, such as mechanical or electrical disciplines, for example.

The following sections deal mainly with the duties and powers of the Department of Labour's inspectors. As far as this part of the Occupational Health and Safety Act is concerned, it holds very little 'value' for us in the electrical industry, other than to give some insight into – and make us aware of – our own responsibilities and duties. The sections are listed below ...

29. Functions of inspectors.

30. Special powers of inspectors.

31. Investigations.

32. Formal inquiries.

33. Joint inquiries.

34. Obstruction of investigation or inquiry or presiding inspector or failure to render assistance.

The above comprises a good seven pages of prescriptive and very detailed information, which I will attempt to summarise: An inspector can, at

any reasonable time, enter premises to conduct even an unannounced *ad hoc* or 'surprise' inspection, for instance when he passes a building site and decides to conduct an unannounced inspection. He may freely inspect any book or record that has to be kept in terms of the Occupational Health and Safety Act. He may also seize such book or article that he deems not compliant with the Act and/or Regulations after issuing a receipt for that article or book. The OHS Act also allows an inspector to ask for assistance from an interpreter, a member of the South African Police or any other assistant, when required, to accompany him/her when he/she performs his/her functions in terms of the Act. And quite frankly, I would wear a bullet proof vest, too.

It then stands to reason that an inspector can issue a prohibition notice compelling the contractor to stop work and/or fence off or barricade an area in a workplace or machinery when he finds anything untoward. He may even go as far as disconnecting the power and sealing the switchgear. After conducting an investigation, an inspector may also hand over his findings to the Attorney General for further action. Does this ever happen? And are prohibition notices ever issued – such as stopping an electrical contractor from any further work when he does not have properly qualified workers or an Accredited Person on site?

Something to remember is that no-one may refuse to answer any reasonable question put to him or her during the course of an investigation and to assist the inspector to the best of his or her ability.

The flip-side is, of course, also true: you don't have to take anything lying down if you believe there has been unfair action taken against you.

Next month, we'll look at the procedures for appealing against any decision made by an inspector of the Department of Labour who is acting under the above sections of the Occupational Health and Safety Act (Act 85 of 1993).

Stay under the radar till next time ...

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Three year tender to supply circuit breakers to Eskom awarded

VOLTEX LSis, Midrand has been awarded a tender to supply electronic trip unit circuit breakers to Eskom. This tender is a three-year contract to supply LSis Susol electronic moulded case circuit breakers and 125 A single-pole miniature circuit breakers to Eskom nationally.

Susol electrical products are manufactured by LS Industrial Systems the industrial division of the LG Group – a Korean-based manufacturer of switchgear and motor control products in southern Africa.

Bruce Clegg, sales manager at Voltex LSis Midrand, explains, "The Susol products' superior features, quality and versatility were certainly key aspects that contributed to these products being selected for this tender." He says key fea-

tures include an electronic trip unit, which is more reliable than thermal magnetic trip units, the current setting I_r (A) is adjustable to 0.4 of full load current (SLC) and it offers a long time overload protection and tripping delay, t_d (SEC).

Clegg says, "The ability to adjust the amperage to suit requirements makes these units exceptionally versatile." Voltex LSis is one of the specialist divisions within the Voltex Group and is the sole agency for LS Industrial Systems, part of the LG Group.

The product offering includes miniature circuit breakers, moulded case circuit breakers, air circuit breakers, motor manual starters, contactors, resin core transformers, star delta panels and a variety of other products.

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Training and development by Nick du Plessis

Training needs analysis – the starting point to identify training requirements

I HAVE been involved in a training needs analysis (TNA) project and it got me thinking: how many organisations have actually conducted a training needs analysis? And, secondly, are companies only conducting training to address the obligatory legislative requirements without taking into consideration their own organisation's future requirements?

This month, I will share some of my insights into the benefits and the value for organisations if a training needs analysis process is conducted.

There are various definitions of TNA but I will go with my version and my definition. Training needs analysis is a process that determines whether or not there is a need for training within an organisation and, if it does, what training interventions are required to address the identified training need or gaps in knowledge and/or skills.

There are many types of analyses that can be performed in any organisation and it is important to ensure that when an organisation conducts an

analysis, the objectives are clearly defined.

Here are some of the types of analyses:

Organisational analysis

Organisational analysis is an examination of the needs of a business and any reasons why training is desired. This includes an analysis of the organisation's strategies, goals, and objectives.

What is the organisation seeking to accomplish generally? The important questions that are answered by this analysis are: Who decided that training should be conducted; why is a training programme seen as a recommended solution to a business problem; and what is the history of an organisation with regards to employee training and other management interventions?

Person analysis

This is the analysis that deals with potential participants and any instructors who will be involved in the training process. The important questions that are answered by this analysis are: Who will receive the training and what is their existing level of knowledge on a subject; what is their learning style; and who will conduct the training? Do the employees have the required skills? Have there been any changes to company policies, procedures, software, or equipment that require or necessitate training?

Work analysis or task analysis

This is when the tasks being performed are analysed and includes a breakdown of the trade or occupation and any requirements for performing that work.

Also known as 'a task analysis' or 'job analysis', this analysis seeks to specify the main duties and skill levels required. This helps to ensure that any training that is developed as a result of the analysis will be relevant to the job.

Performance analysis

Examining performance will indicate whether or not employees are performing to the established standards. Is there a performance gap? If performance is found to be below expectations, would training

help to improve this area?

Content analysis

Content analysis examines the documents, laws and procedures relevant to a job. This analysis answers questions about the knowledge or information required for a particular job.

This information comes from manuals, documents, and/or regulations. It is important that the content of the training does not conflict with or contradict job requirements. An experienced worker can assist (as a subject matter expert) in determining the appropriate content.

Training suitability analysis

This determines whether or not training is the desired solution. Training is one of several solutions to resolving employment problems, however, it may not always be the best solution. It is important to determine if training will be effective.

Cost benefit analysis

Cost benefit analysis determines the return on investment (ROI) of training. Effective training will result in a return of value to the organisation that is greater than the initial investment to produce or administer the training. (<http://www.hr-guide.com/data/G510.htm>)

Conducting the correct analysis in an organisation is the most important element and is also the starting point to determining the action that

would be required against the needs identified in the analysis. When a decision has been made to conduct an analysis, the organisation must be aware that the resultant action of the analysis will cost money to implement; the analysis will also generate expectations by staff that they will receive training or systems that will assist with or improve their daily work.

The most important element of a TNA is that the correct analysis is conducted. This is the starting point that identifies an organisation's particular training requirements and it determines what specific action is required.

Information session

It must also be taken into account that a budget must be drawn up before any analysis can commence. Staff must be informed that they will be interviewed, that their job and performance will be scrutinised and the resultant analysis could impact on their daily activities and processes. This information session must be done well in advance in order to ensure the needs analysis provides the organisation with valid, reliable and sound information that will guide the organisation into the future, improve productivity as well as ensure that staff will deliver what is expected against a clear set of standards or guidelines.



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Next generation induction heat soldering

THE FX-100 soldering system by Hakko brings induction heat soldering technology to an even higher performance level. This small, compact station includes microprocessor control that boosts the recovery performance of the soldering iron tip, and an advanced system design optimises performance by reducing the loss of power in the system while maintaining the lowest EMI levels to meet applicable standards, especially for work with sensitive devices. The system is simple to operate – just plug it in and turn it on. No calibration required.

FX-100 features:

- User selectable power activity display providing constant dynamic feedback to the operator about the thermal load on the soldering iron tip.
- T31 Series tip cartridges provide Hakko's tip life with greater power at each of the two temperature selections.
- Tip 'sleep' function reduces tip temperature to preserve tip life and reduce oxidation when the iron is not in use.
- Large backlit display provides a clear and simple interface with the operator.



- Activity monitor provide cumulative data on tip heater loads and tip running time to aid in process control and managing operating costs.
- Compact design minimises workbench footprint.
- Slender, lightweight, and ergonomically designed hand piece with burn resistant cord allowing for operator dexterity.
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WHEN ONLY THE BEST IS GOOD ENOUGH

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Delivering a one-stop solution for modern switches, sockets and quality LED lighting

In order to remain a relevant market leader, it is essential for the management of a company to think innovatively and constantly improve and update product ranges.

The electrical industry is a highly competitive industry and, in recent years, technology has advanced dramatically. This is especially true of switches and sockets – one of the most commonly used applications in living and working areas – and LED lighting, which have rapidly overtaken old-style, energy inefficient incandescent lamps.

Switches and sockets

When first launched, Major Tech's range of VETI switches and sockets was "already well ahead of the pack with many innovative, pragmatic features packed into visually appealing contemporary designs".

Werner Grobbelaar, sales manager at Major Tech, says the VETI range takes switches and sockets "into the future".

"VETI's dynamic, modular range has revo-

lutionised the market's perceptions of what switches and sockets have to offer. Property owners no longer have to settle for drab, white and functional products because VETI has added colour and functionality, at an affordable price," he says, adding that "the range is definitely visually appealing and adds style and individuality to any installation".

"The VETI range is certainly affordable for all applications – and anyone looking for industrial switches and sockets without going over budget, need not look further than the VETI metal-clad series," advises Grobbelaar.

The durable metal-clad series has been designed with care, precisely engineered and carefully manufactured to satisfy the most discerning customers' needs; and it offers a versatile solution for even the most challenging requirements. As with all other quality VETI products, the superior manufacturing process and reliable performance mean that this range of switches and sockets can exceed market

expectations when it comes to ensuring safe and reliable installations.

Grobbelaar says the VIP range from VETI is "the ideal solution" for any outdoor requirement. "This range is available as an already assembled offer for standard installations as well as a modular version, which allows for personalisation of selected areas."

He adds that the VETI range has full IEC certification and is manufactured to stringent quality specifications to ensure the best possible quality.

Enclosures

In addition to high quality switches and sockets, Major Tech has a comprehensive range of first-rate flame retardant electrical enclosures, including DIN rail distribution boards, a range of different sized IP55 junction boxes and an array of IP65 weatherproof enclosures. The entire range of enclosures has CE accreditation and has been tested to IEC standards to ensure that the range meets Major Tech's quality assurance standards.

LED lighting

New to Major Tech's offering is a new, modern range of LED lighting products. "The South African consumer has waited a long time for this kind of quality light fittings," says Grobbelaar.

"This new product range has been designed to bring elegance and decorative flair to homes, restaurants, and hotels." "In fact, these lights are also perfect for any commercial building."

He explains that the LED lighting products come with number of different lumen outputs – depending on the type of light and installation.

"And because LEDs are extremely energy



efficient, electricity consumption is reduced. LEDs have a very long life so there is less maintenance required, and because they don't contain any mercury, they are definitely the 'greener' option," he says.

"At Major Tech, we're very excited that we can now offer this new range of dimmable LED lighting so that our clients can confidently make the transition from traditional light fittings to LED luminaires and know that they are getting quality and performance at an affordable price."

Our aim at Major Tech is to create a 'one-stop solution' with our VETI range of switches and sockets along with the newly launched LED light fittings – and deliver affordable quality products with assurance."

Enquiries: +27 11 872 5500

Lighting company opens new offices in Jo'burg and Windhoek



PROVINCE Lighting/Automation/Switching has expanded and recently opened up two new cutting edge outlets, one in Johannesburg and the other in Windhoek, Namibia.

"The company is a leading supplier of specialised SABS-approved, commercial, industrial, retail and architectural lighting solutions and takes a dynamic and progressive approach to business. It was established in 1987 in Cape Town, and has grown consistently in reputation and stature," says Jurgen Chemelli, managing director of Province.

The new Johannesburg outlet focuses on the commercial, industrial and retail sectors of the market.

"The objective of opening this outlet is to enable Province to broaden its customer base and enhance its customer service, in response to increasing consumer demand throughout South Africa for the company's products, solutions and services," he says.

"This move extends the company's experience, knowledge and expertise, built up over many years, to the Johannesburg market and nation-wide," says Chemelli.

"Our team has worked on numerous and diverse lighting projects and large scale devel-

opments and we have serviced some of the biggest names in our industry. We remain totally dedicated to service and to providing the best possible solutions to our customers."

The Johannesburg outlet, which provides the latest in lighting and automation technology, has a state-of-the-art showroom and a well-equipped presentation room for face-to-face, focused interaction.

"The wide range of latest technology products enables each lighting solution to be tailor-made to meet each customer's specific needs," continues Chemelli.

"The focus of the showroom is on light-emitting diodes (LEDs) in various applications. This can in particular be seen in a specifically designed unit showing LEDs' different colours and intensities, as well as profiles and ceiling/bulkhead details," he says.

"In addition to lighting products, Province has an automation division. This offers an automated Building Management System (BMS), which is simple and personalised and, most importantly, allows homes and companies to maximise their energy savings," he explains.

The Johannesburg outlet's showroom is fully automated. The automation parameters are:

- DALI lighting control.
- Power consumption and energy management.
- Remote log-in to external buildings.
- Monitoring and reporting on the above.
- Alarm interaction.
- Audiovisual control.

"The showroom is equipped with various interfaces so that customers can view all the energy management facilities the company offers," explains Chemelli.

Province has been involved in both lighting and automation of many Green buildings across South Africa and in the rest of Africa.

"The purpose of the new outlet in Windhoek is to extend the footprint of Province into Africa. The offices and fully equipped stores there are up and running. The company has already taken on business and projects in the greater African continent," explains Chemelli.

Province's Johannesburg outlet was officially launched in February 2015. It is already fully operational and involved in many projects.

A variety of events and talks will now be held throughout the course of this year. To be added to the mailing list e-mail mail@province.co.za.

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LED systems for industrial lighting and floodlighting

ACDC Dynamics is the sole distributor of Italian-designed Gewiss product ranges in southern Africa and has now introduced the Smart [4] LED lighting range for industrial lighting and floodlighting applications.

Gewiss brand manager, Charlton Opperman, says Gewiss' Smart [4] lighting range is regarded as "truly innovative technology that users can trust". He explains that 'intelligent' lighting is when "lighting can adapt to its environment by resorting to the best solutions in terms of effectiveness and efficiency, in any situation".

Smart [4] is an innovative lighting range by Gewiss that interprets intelligence exactly from this point of view and makes its versatility and

adaptability the key aspect of its identity, offering sustainable light in the most varied of contexts and in which lighting performance is a must.

"Smart [4] can be a floodlight, high bay or ceiling light as needed, offering different photometries, depending on the different contexts. The practicality of the new luminaires guarantees optimal lighting performance in any application, from industrial applications to sports environments – indoor or outdoor," he explains.

"In addition, the horizontal and vertical modularity of the new product is combined with the ease of installation and maintenance, with the use of 'green' materials and with the unmistakable style of Italian design.

"Energy efficiency, light quality, an immediate return on investment, ease of use and speed of implementation: these are the characteristics that make Smart [4] a truly intelligent product," he says.

Features of Smart [4] include:

Performance

Smart [4] was developed by GEWISS research centres to reduce the Total Life Cycle Cost and therefore make replacing lighting systems affordable.

Energy consumption

Using Smart [4] products instead of traditional light sources will yield energy savings of up to 60% in comparison with recent systems; and of up to 80% when compared with obsolete or poorly maintained systems.

Configuration

Various fixing systems ensure flexible use in any type of application.

Installation

The entire range of Smart [4] products was designed and developed to make it easy to install and retrofit on existing devices in obsolete systems.

"At ACDC we take pride in the fact that we provide only the highest quality product ranges," concludes Opperman.

Enquiries: +27 10 202 3400

LED garden light solutions

AT night, a beautiful, landscaped garden takes on a magical appearance when it is lit with strategically placed luminaires that light up dark areas and enhance features and pathways.

Of course, the lights have to be weather proof and rust proof – so it makes perfect sense to use IP65 rated aluminium lights – and LED lamps to ensure low maintenance.

Major Tech's G1 LED garden lights are constructed of seamless, heavy-duty aluminium and a tough acrylic lens. The outdoor lamp range includes bollards, which are sealed with gaskets to keep out water and contaminants – and the IP65 rating means that the lights can be used in wet locations.

The sleek, contemporary bollards – featuring LED lamp sources, concealed LED drivers and low glare fixed optics – are designed for walkways, entrances, driveways and other small-area lighting applications where low mounting heights are required.

The easy-to-install bollards come in various heights – from 30 cm to 100 cm – and operate on 230 V ac.

Features include:

- Extruded and machined aluminium housing with cast aluminium base.
- Impact-resistant clear, acrylic lens.
- IP65 certified protection.
- Cool white LED colour.
- Vandal resistant, tamper-proof screws in the top of the housing.
- Easy access to LEDs and drivers.
- Different mounting heights: 30 cm, 50 cm, 65 cm and 100 cm are available
- Multi-volt 85 V ac to 265 V ac.

Application

Major Tech's garden lights are a decorative and functional lighting solution for walkways, entrances, driveways, gardens and other small area applications – for residences, offices, hotels and parks.

Enquiries: +27 11 872 5500

TRULY SUSTAINABLE LIGHTING



Smart [4]

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Exterior lighting course in June

THE Development Committee of the Illumination Engineering Society of South Africa will present a course, 'Lighting for Exteriors' at the Cabanga Conference Centre, Johannesburg on 8 and 9 June, 2015.

Course topics

The course will cover the following:

- Lighting economics.
- Lamps for exterior applications.
- Glare; lighting levels for exterior code SANS 10389-1,2,3.
- Obtrusive lighting.
- IP rating.
- Point-by-point calculations, photometric data.
- Exterior lighting software calculations.

Registration

Registration will take place at 8 am on 8 June and the course will run from 8 am to 5 pm on both days.

Seating is limited to 25 persons.

Contact Sue Swash for enrolment forms by emailing her at sue@iessa.org.za

Enquiries: +27 11 476 4171.

Award-winning aquatic centre gets successful lighting solution

THE Aquatics Centre at the American International School of Johannesburg (AISJ) has won architectural awards in South Africa and the United States. It is a modern, purpose-designed all-weather facility with special design features that take environmental, operational and economical concerns into account. The AISJ aquatic centre has specialised energy-saving essentials: mechanical louvres, solar panels on the roofing structure and a hybrid solar and gas heating system for the change rooms.

Prime criteria

When it came to lighting, the task of illuminating the aquatic centre was awarded to BEKA Schröder, a proudly South African lighting manufacturer.

"We are proud to be associated with Rawlins Wales & Partners and Grosskopff Lombart Huyberegts and Associates in providing and implementing a successful lighting solution for this magnificent project," says BEKA Schröder's Rui Silva.

"The project required that the lighting solution took into account ease of maintenance and access to the luminaires. These prime criteria were successfully achieved."

Along with the correct lighting levels, BEKA Schröder also had to provide a lighting solution that took into account the aesthetics of the installation.

"This is why the robust BEKAMAX floodlight range, mounted on specially manufactured brackets, was used for this installation," says Silva.

Switch to LED

"Yet, as a leading lighting solutions provider and a responsible company, it is our priority to continue to minimise our ecological footprint. This is the reason we are at the forefront of a major driving force that is calling for a switch to LED lighting," he explains, "and we are firmly committed to offering lighting solutions that reduce energy consumption considerably."

He explains: "As an example, we can currently offer an LED solution for this sports application that would save more than 25% energy compared with the existing solution, and this would be achieved by replacing the

existing luminaires with our new and highly efficient OMNistar modular LED floodlight range. Another consideration is that by using LED technology, long term maintenance would be reduced; and even more energy savings would be realised by using light controls.

"By combining the best of LED technology with a wide range of control systems, BEKA Schröder's solutions offer huge energy savings of up to 85% and drastically reduce the payback time on new installations.

"We are committed to tomorrow by remain-

ing sustainable today. We believe that this ethos is shared by many of our clients," he suggests. "BEKA Schröder is confident that this philosophy will dictate the specification of lighting in the future."

Enquiries: +27 11 238 0034



OMNistar, the highly efficient modular LED floodlight range from BEKA Schröder.



BEKA Schröder provided the lighting solution for this award-winning aquatic centre at the American International School of Johannesburg.

A lighting conference not to be missed

THE 11th AGM, conference and LED seminar at the Protea Hotel Midrand from 17 to 19 May will be attended by suppliers, installers, manufacturers and designers and promises to deliver exceptional value in terms of valuable information.

The papers being presented are:

- 'Rethinking The Future Of Lighting' by Henk Rotman, Phillips Lighting SA.
- 'Colour Temperature and Colour Rendering of White LEDs - Demystified' by Elsie Coetzee, the National Metrology Institute of South Africa (NMISA).
- 'LED Street Lighting: What MF to Use and How to Reduce your CO₂ Footprint' by Murray Cronje, BEKA Schröder.
- 'Compact Fluorescent Lamps - Mercury Treatment Technologies' by Lerato Lethea, co-author Andre Bignaut, Eskom.
- 'Lighting and Optics Standards Development and Update' by Sekwanele Kubeka, SABS.
- 'How to Select an Energy Efficient Luminaire' by Hennie Combrink, Light Cam.
- 'Ts 105 Luminaire Platform' by Daniel Kasper, BEKA Schröder.
- 'The Dark Side of Light' by Johan Smit, Astronomical Society of South Africa.

There will also be an LED practicum - seminar - for attendees.

For more information about the IESSA conference, email Sue Swash: sue@iessa.org.za

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Smartphone-controlled lighting system for handball cup final



Osram will illuminate the Handball Cup final 'REWE Final Four 2015' with Lightify, its smartphone-controlled lighting system. Picture: Osram.

OSRAM has announced its exclusive lighting partnership with the REWE Final Four – the German handball cup final – which is considered the most prominent event in handball.

The partnership means that OSRAM will be responsible for lighting the keenly anticipated event in Hamburg on 9 and 10 May 2015 – and other related events – with its smartphone-controlled lighting system, Lightify.

"OSRAM's Lightify system brings smart lighting into all areas – homes, offices and now to this year's handball finals," says Erol Kirilmaz, who is responsible for worldwide sales at Osram.

Oliver Lücke, corporate communications manager at the DKB Handball League, explains: "Innovative and professional lighting concepts are a central element when portraying the emotion of professional, top class sport. The DKB Handball League has in OSRAM a partner that is recognised worldwide as 'an innovation and technology trailblazer' in the manufacture and conception of lighting."

Since 1994 the DHB cup (German Handball Federation Cup) final has been a final four tournament of the four best teams from the quarter finals played over a weekend and is considered the top event in German and international handball.

The cup final is the season highlight of the DKB Handball premier league. The popularity and recognition of the final four tournament has continued to grow over the years, both nationally and internationally. In 2014 the television coverage of the Final Four totalled almost seven hours of viewing across all national television channels, reaching an audience of 44.5 million viewers. In that year, the Final Four tournament could be

viewed in 48 countries across the world.

Handball is a hugely popular sport in Europe – the second most popular team sport after soccer – and is played with two teams of seven players each (six outfield players and a goalkeeper) who pass a ball using their hands with the aim of throwing it into the goal of the other team. A standard match consists of two periods of 30 minutes.

Modern handball is played on a court 40 m by

20 m, with a goal in the centre of each end. The goals are surrounded by a 6 m zone where only the defending goalkeeper is allowed; the goals must be scored by throwing the ball from outside the zone or while 'jumping' into it. The game is fast and includes body contact, as the defenders try to stop the attackers from approaching the goal. Goals are scored quite frequently; teams typically score between 20 and 35 goals each.

Enquiries: +27 11 207 5600

Specialised turnkey lighting project at Vodacom's Data Centre completed



ACTOM Electrical Products, the ACTOM Group's distribution arm – which incorporates a specialised lighting business unit – recently completed a turnkey lighting project for South African cellular network, Vodacom, for its data centre in Midrand, Gauteng. The project involved designing and providing energy-efficient lighting systems for the interior illumination of the building.

"Our lighting business unit was recently expanded and enhanced through the acquisition of luminaires designers and manufactur-

ers Genlux Lighting in Germiston, which also provided input on this project both in terms of design expertise and by supplying some of the luminaires used," says Neil van Blerk, ACTOM Electrical Products' business development executive.

The project was overseen by Taemane Consulting Engineers, Vodacom's consulting electrical engineers, and executed by ACTOM Electrical Products' lighting business unit.

The lighting design technologies applied on the project comprise a custom-designed and fabricated stainless steel suspended light fixture supporting four large edge-lit linear LED luminaires to illuminate the main reception area, which is coupled to a daylight harvesting system designed to automatically dim the artificial illumination during the day when the area is sufficiently lit by natural light.

The luminaires' on-board photocell sensor continuously measures the ambient light levels and automatically ramps up its light output to supplement the natural light if a drop in the pre-set ambient illumination level is detected due to overcast conditions and automatically ramps up to its full capacity at night.

The data centres occupy an open plan area ('white space'), but each data centre hall requires individual concentrated lighting according to occupancy and is therefore illuminated by high efficiency T5 linear fluorescent recessed luminaires, individually equipped with passive infrared occupancy sensors, allowing for accurate lighting control and switching within tight parameters.

The passages serving the data centres are illuminated by high performance IP 65-rated linear fluorescent luminaires equipped with electronic control gear coupled to high efficiency 45 W T5 lamps and employing a corridor dimming function – as opposed to the on/off switching that applies in the occupancy/non-occupancy applications – and control coupled to strategically placed sensors.

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willie@superlume.co.za

LED – big on performance, high on quality, low on price

LEDs are becoming increasingly popular as these products now offer great value and a solid return on investment (ROI) for building owners and occupiers, even in cost-sensitive installations.

"The total cost of ownership of an LED lamp/luminaire is much more affordable than the CFL equivalent, for example," says Paul Johnson, Aurora's international development director.

But can these new mass-market products also deliver on quality of light as well as safety? Johnson says the answer to this question is, "yes, they can".

New for 2015, says Johnson, are a lot of new products that Aurora has added to its Enlite brand of value-driven LED lamps and luminaires.

"These sell at competitive prices, and because quality always counts with Aurora, Enlite lighting essentials are manufactured to our reputable high-quality standards," he says, adding, "this means that consumers do not have to sacrifice safety and quality because Enlite is a brand that consumers can trust and rely on."

Uni-Fit™ High power commercial downlights

"Performance – that's what the Uni-Fit range of commercial downlights offer," says Johnson.

"These downlights feature ThermoTec™ technology, integrated driver and high-quality LED chips, and they deliver serious lumen performance."

He explains: "The Uni-Fit range is the ideal cost-effective solution in multiple sizes and wattages for new or existing installations where traditional compact fluorescent downlights need upgrading to more efficient LED technology."

ThermoTec technology delivers longer life and consistent performance – and the lamp's life is not affected by frequent switching even, for example, when they are used with occupancy controls."

Pre-wired with 500 mm² core cable, a compact integrated driver allows for easy installation. The 1.5 kV surge protection offers a real benefit in managing massive power spikes.

For example: By choosing a 15 W Uni-Fit LED downlight over a 26 W CFL lamp, energy-savvy customers will save in excess of 40% on lighting bills; and the lamp will last anything from three years to a decade, depending on usage.

Slim-Fit™ low profile downlights

At only 25 mm deep – including the bracket – the Enlite range of Slim-Fit low profile downlights are an ideal solution where ceiling voids are limited but high lumen output is required.

Engineered to deliver superior light output and uniformity utilising the latest edge-lit LED technology, they are available in 6 W, 9 W, 12 W, 18 W and 24 W as a low cost, energy-saving alternative to compact fluorescent fittings.

A plug-and-play remote driver makes for

easy installation (40 mm recess space required), and the lamp's life is not affected by frequent switching.

For example, by choosing a 9 W low profile LED downlight over a 13 W CFL, there is a 30% saving on energy consumption; and the lamp will last anywhere between three years and a decade, depending on usage.

The benefits of Slim-Fit low profile downlights are:

- A low cost, energy-saving alternative to compact fluorescent fittings.
- An edge-lit low profile that is ideal for installations with limited recess space (25 mm) and shallow ceiling voids.

- Plug-and-play remote driver for easy installation (40 mm recess space required).
 - The lamp's life is not affected by frequent switching, for example, when used with occupancy controls.
 - Three year warranty at 25 000 hours to L70.
- The full new range of innovative products – including GU10/MR16 ICE lamps, flat panels, commercial and low profile downlights, T8 tubes, floodlights, bulkheads and more – are featured in the second edition of the popular Enlite catalogue.

Enquiries: +27 (11) 234 4878



LOW PROFILE INTEGRATED LED DOWNLIGHTS

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EN-PL12	12W	780lm			

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The Greek Cross

THIS is a Greek Cross, composed of five identical squares. Peter wanted to make it into a perfect square, so he started from the outside and snipped off four small pieces which he then fitted into the remaining shape, and indeed made a perfect square.



Jane, however was not impressed. "You didn't need to make four separate cuts," she complained. "You could have divided it into four pieces with just two cuts straight-through the centre so that the pieces fitted together to make a square."

Peter thought for a while. "Well, I see that you are right," he said eventually, "but I wouldn't have saved anything, because your two cuts are just as long in total length as my four short cuts!"

Can you discover Peter and Jane's methods of dissecting the cross into a square?

April solution

A mixed collection
The six wings mean that Tommy kept the three birds, which had three heads and six legs. Leaving out the birds entirely, we know that his remaining pets had a total of 12 heads and 32 legs. Rabbits dogs and cats have four legs each, and $32 \div 4 = 8$. The four remaining heads prove that Tommy kept a total of four snakes.

JUNE FEATURES

ENERGY MEASUREMENT & SUPPLY

MV/LV systems, transformers, mini-sub, suspension devices, poles, switchgear, control gear, quality of supply protection, load control, cables and cable accessories, cable and jointing techniques, metering, energy management, energy efficiency, timers, load shedding, load balancing, testing equipment, hazardous areas, flame-proof equipment.

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