ELECTRICAL INSTALLATION – NOT JUST TWO WORDS

ELECTRICAL Installation. The definition in the Electrical Regulations (2009), forming part of the Occupational Health and Safety Act (Act 85 of 1993), that is possibly the most misunderstood or misinterpreted couple of words in our daily electrical lives.

In last month's column I ended by asking where it is stated that the electrical installation in my newly completed outbuilding must have a light fitting (luminaire) installed otherwise I cannot issue a Certificate of Compliance.

So let's look at that pesky definition again (which appears in SANS 10142-1 Clause 3 too, by the way) and I will try to explain my way around a picture or two…

It reads: *'Electrical installation' means any machinery, in or on any premises, used for the transmission of electricity from a point of control to a point of consumption anywhere on the premises, including any article forming part of such an electrical installation irrespective of whether or not it is part of the electrical circuit, but excluding*

(a) Any machinery of the supplier related to the supply of electricity on the premises;

(b) Any machinery which transmits electrical energy in communication, control circuits, television or radio circuits;

(c) An electrical installation on a vehicle, vessel, train or aircraft; and

(d) Control circuits of 50 V or less between different parts of machinery or system components, forming a unit that are separately installed and derived from an independent source or an isolating transformer …

By comparison, the definition in SANS 10142-1 Clause 3: For the purposes of this part of SANS 10142 (SABS 0142), the following definitions apply:

3.34 electrical installation means machinery, in or on any premises, that is used for the transmission of electrical energy from a point of control (see 3.56) to a point of consumption (see 3.55) anywhere on the premises, including any article that forms part of such an installation, irrespective of whether or not it is part of the electrical circuit, but excluding

a) Any machinery of the supplier that is related to the supply of electricity on the premise;

b) Any machinery that is used for the transmission of electricity of which the voltage does not exceed 50 V, where such electricity is not derived from the main supply of a supplier; and

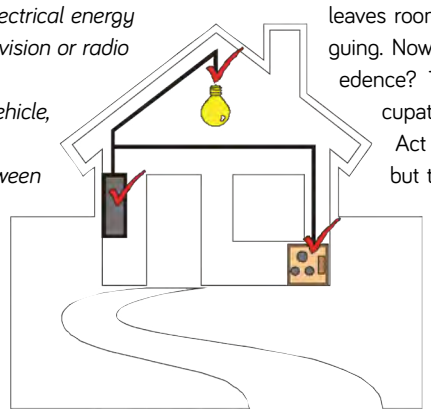
c) Any machinery that transmits electrical energy in telecommunication, television or radio circuits.

NOTE 1 Deleted by amendment No. 3.

NOTE 2 For specialised electrical installations, see 3.74.

NOTE 3 Deleted by amendment No. 3.

At first glance these two definitions appear identical – right? Wrong. The problem I have is that it leaves room for people to start arguing. Now which one takes precedence? The one from the Occupational Health and Safety Act is my first thought too, but the Act makes provision for the SANS codes and standards as we learned before.



But let us start at the beginning … again …

I have to reiterate that we can also look at definitions as a 'collective term', in a manner of speaking. So please bear in mind that the words 'machinery', 'premises', 'point of control', 'point of consumption', 'electrical circuit' and others are, in fact, definitions in their own right, with detailed descriptions and/or explanations, in either the Electrical Installation Regulations or SANS 10142-1.

It is, therefore, very difficult to not call a spade 'an agricultural instrument used to cultivate ground with' while trying to explain many of the terms in the SANS Codes, Occupational Health and Safety Act and Regulations, especially by writing alone.

But let me try. You will notice red 'tick marks' in the illustration. Note that one red tick mark is on the distribution board, one on the socket outlet, and the third tick mark sits at the *end* of the cables *before* the light bulb.

For the sake of this explanation we can take the DB to be the 'point of control' and the socket outlet and the end of the cable before the light bulb, the 'point of consumption'. So, an 'electrical installation' consists of only two defining and very clear points – a 'point of control' and a 'point of consumption' – full stop. Oh, stop grumbling and trying to make it more involved than what it is. An 'electrical installation' is nothing more and nothing less.

So, how can I be so sure? Simple. According to the definition of a 'point of control' it is the point at which the consumer or user of the electrical installation can switch off the electrical supply to that installation. That switch is known as the 'main switch'. Right? Right! The 'point of consumption' is defined as the terminals of an appliance or a socket outlet.

Also, remember when you do an insulation resistance test, all loads may be disconnected as per Clause 8 of SANS 10142-1. So, what is the answer to the question I posed in my previous column? Yes, I can issue a Certificate of Compliance without a light fitting being installed. As I only test up to the terminals of the appliance. With no light fitting installed, I just need to ensure the ends of the cables are insulated and made safe.

Now that we know what an 'electrical installation' is, we can have a look at the rest of the definition and what's not part of the 'electrical installation' as defined. And this is where the problems start. The ill-informed, the ones who only see what they want to see, those who failed their reading skills at school and those who smoke their socks, may think that anything that is mentioned from 'a' onwards, is still part of the electrical installation. Which it clearly is not!

Note 1 from the SANS 10142-1 definition, which was deleted by Amendment 3 of SANS 10142-1, referred to the 'point of supply' and the supply conductors to the premises. The deleted Note 3 referred to electric fences. The item excluded from an 'electrical installation' as defined and completely omitted from SANS 10142-1 is paragraph 'C' in the definition in the Electrical Regulations.

Do the authors of SANS 10142-1 secretly want us to think installations on vehicles (perhaps a caravan) and vessels (your yacht on the Vaal or at Langebaan?) do form part of an 'electrical installation' as defined?

I think not. Although a little confusing, the scope of the applicability of SANS 10142-1 and the applicability of the definition of an 'electrical installation' and, therefore, also that of the CoC, can be found in Clause 1 of SANS 10142-1. Direct comparisons can sometimes be misleading. So be careful of not taking all the facts into account – it could start a small war.

Stay well defined till we meet again next time.

Manufacturer of non-metallic enclosures announces assisted funding for prototypes

QUINTIN Lamprecht, managing director of Allbro, says one of the company's "success stories" has been the Allbrox range of enclosures. "The price point of SMC (Sheet Moulded Composite) enclosures internationally is significantly higher than powder-coated steel and, in most cases, even higher than stainless steel," he explains, adding that there are two reasons for this: SMC enclosures offer significant technical benefits related to durability, environmental impact, and safety. He goes on to point out that the investment cost to create the complex tooling required is significant.

"It is therefore a world first to find a company manufacturing a range of SMC enclosures at a cost that is generally lower than even cheap 'Far East' steel products."

He explains that the extended advantage to South African panel builders and OEMS is that they have an aesthetically and technically superior housing for the innovative systems they design and manufacture. "While it is clear that the housing does not sell the solution, we know that design and presentation carry more weight than it logically should in the decision-making process. More importantly, the perceived quality and genuine reliability of systems are directly affected by how sound the IP level of the enclosure is, and for how many years it is able to retain its integrity."

He says that while South African companies have made breakthroughs in security, access control, communication, automation, distribution, monitoring, metering, and solar combiners, until now they are faced with a tough choice between a well-priced steel box and an expensive imported SMC enclosure solution.

"The introduction of a new product usually requires a prototype to be provided for approval and Allbro is now assisting the funding of this process by offering a 50% reduction in the nett price of any of the new Allbrox range of enclosures used for prototype purposes.

"The company believes that there are significant advantages to be gained when South African manufacturers combine innovation in multiple areas of a complex offering on a world stage where every feature and benefit is weighed and measured against world class competition," concludes Lamprecht. To qualify for this subsidy, email marketing@allbro.com with the subject 'Prototype'.

It is therefore a world first to find a company manufacturing a range of SMC enclosures at a cost that is generally lower than even cheap 'Far East' steel products.

The catalogue for Allbro's range of enclosures can be found on the company website: www.allbro.co.za

Enquiries: +27 11 894 8341

NEWS FLASH

GENERATORS WITH INCREASED PERFORMANCE, LONGER RUN TIMES

Subaru Industrial Power Products has made several upgrades to its SGX generator line, which includes the SGX3500, SGX5000 and the SGX7500E. The generators feature quality components, durable construction and Subaru EX overhead cam engines. Stators have a full varnish dip for better protection from movement, moisture and debris. The hour meter displays operating hours even when the units are off. The engine on/off switch is now mounted on the control panel for easier access. No-flat tyres on the wheel kits save time and money by eliminating the need to check, inflate or repair tyres. All models are backed by Subaru's five-year warranty on the engine and three-year warranty on the generator. Subaru Industrial Power Products has a worldwide dealer network and, in South Africa, Goscor Power Products stocks Subaru pumps, generators and engines.

Enquiries: +27 11 230 2600