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SANS 10142-1 and switch disconnectors revisited

I TOUCHED on the issue of switch disconnectors some years ago but it is becoming increasingly apparent to me that many electrical contractors are still uncertain about the installation of switch disconnectors and, more particularly, the installation of these devices in existing installations. The inherent problem here lies in the fact that many of these devices are required for equipment that is not covered within the scope of SANS 10142-1. Exacerbating this already confusing issue is the fact that this equipment has often been installed by people who are not registered electrical contractors and therefore have insufficient knowledge about the relevant industry regulations and standards.

In terms of identifying the requirements for switch disconnectors, it is important to understand the reasoning behind these requirements. As SANS 10142-1 is an incorporated standard (Electrical Installation Regulations 2009 - EIR) and these regulations are encompassed within the provisions of the Occupational Health and Safety Act 85, of 1993 (the Act), of primary concern to an electrical contractor is Section 9(2) of the Act:

9(2) General duties of employers and self-employed persons to persons other than their employees.

Every self-employed person shall conduct his undertaking in such a manner as to ensure, as far as is reasonably practicable, that he and other persons who may be directly affected by his activities are not thereby exposed to hazards to their health or safety.

The introduction of SANS 10142-1 is also clear on this point and states that *"The aim of this part of SANS 10142 (SABS 0142) is to ensure that people, animals and property are protected from hazards that can arise from the operation of an electrical installation under both normal and fault conditions."*

Without going into more detail about the legal implications of the above excerpts, I have endeavoured to keep my explanation of this subject as simple as possible.

We know that the EIR stipulates that any electrical installation, irrespective of its age, must comply with at least SANS 10142-1 Section 5 – Fundamental Requirements *(This clause contains the general safety principles applicable to electrical Installations). In applying this section, reference is also made to Clauses 5.2.6 – Emergency Control and 5.2.7 – Disconnecting devices.

In dealing with the provisions of Clause 5.2.7 a contractor is directed to ensure that firstly, the electrical installation is controlled by a disconnecting device and secondly, in the case of circuits or items of equipment, that additional disconnecting devices could be required.

5.2.7 Disconnecting devices

An installation shall have disconnecting devices that allow the installation to be disconnected for maintenance, testing, fault detection or repair. In the case of circuits or items of equipment, additional disconnecting devices could be required to allow disconnection for maintenance, testing, fault detection or repair of such circuits or equipment.

In addition, Clause 5.2.6 directs the contractor to ensure that interrupting devices are easily recognised and can be effectively operated.

5.2.6 Emergency control

If, in dangerous situations, it is necessary to immediately interrupt the power supply, the interrupting device shall be so installed that it a) is easily recognised, and b) can be effectively and quickly operated.

To summarise the above clauses, therefore, requirements for safety include the installation of disconnecting devices for purposes of maintenance, inspection and repair as well as emergency control.

Having more clarity in respect of the above, the contractor must now determine whether a particular item of equipment is required to have a disconnecting device, and in this regard SANS 10142-1 provides additional clarity by defining requirements of disconnecting devices under Section 6.9, and then further defining items of equipment, which can be more specifically included in 'Fixed Appliances'.

Particular requirements for fixed appliances include:

1 Water heaters.
2 Cooking appliances.
3 Heaters.
4 Appliances for space heating and cooling.
5 Motors, etc.

What is important when dealing with existing installations is that, in most cases, the electrical contractor attending to the issue of a new Certificate of Compliance for an electrical installation, will not be the electrical contractor responsible for the construction and design of the installation and, therefore, will not be bound by the "letter of the law" in terms of the positioning of the switch disconnector.

What is also important, however, in terms of complying with Clause 5.2.6 *"and the spirit of the law"*, is that the disconnector must be easily recognised and effectively operated.

Guidance is also given here in that the disconnector should be positioned within arm's reach of the appliance or in a distribution board (if the switch-disconnector is capable of being locked in the open position).

Of equal importance is the requirement for an additional disconnecting device where a disconnecting device is positioned on the appliance.

In conclusion, I think it is also important to emphasise that where reference is made to a disconnecting device in this column, it is deemed to refer to definitions of a disconnecting device with regard to reasons of safety, being a device that provides, in the open position, an isolating distance in accordance with specified requirements.

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