

**Fence Controller:**

We use Speedrite International security fence controllers, designed specifically for security fence applications. Speedrite is a New Zealand Company based in Palmerston North and was first established in 1933 as a manufacturer and distributor of electric fencing.

We have found the Speedrite product to be extremely reliable, requiring very little on going maintenance after the initial installation, and providing that a house keeping policy is maintained within the compound perimeter, the system is free of false alarms.

The unit plugs into a normal power socket, is completely self-monitoring, resets automatically and will interface with any existing internal security or monitoring system. A manual key switch is fitted to allow for testing or operating the fence system independently of the main alarm system. The battery back up will run the entire fence and control system in the event of a mains power failure for a minimum of 6-8 hours.

The wire array or fence system is built in such a fashion that it is impossible to inadvertently come in contact with an electric wire when the system is in operation and the entry gates are closed.

Should a would be intruder cut through the fence and touch an electric wire they will receive a short, sharp, but harmless shock sufficiently powerful enough to discourage them entering any further into the premises. The duration of the pulse or "shock" is thee thousandths of a second and are spaced one second apart.

We have designed, installed and commissioned over 3,500 electrified security fence systems in New Zealand. If we can be of any further assistance to you please do not hesitate to call me.

Yours Faithfully,  
Electric Security Fencing Limited

Eric A. Walker,  
Manager.

**Present Situation:**

The original code has now been replaced with a joint Australian/New Zealand Standard: AS/NZS 3016:2002

**Operation:**

The electric fence system should preferably be remotely controlled and monitored by the main internal alarm situated in the main building. The fence becomes an alarm zone or if need be shares an alarm zone within the existing internal alarm system.

The electrified security fence may be operated as a stand-alone system, remotely controlled by remote security key switches, digital code pads or radio control key ring transmitters.

The alarm output from the fence is able to activate any type of alarm system or preferred device.

Electric Security Fencing Ltd is a Ministry of Justice Licensed Security System Installer and authorised agent for Speedrite International Security Systems.

**How it works:**

The fence control unit sends a pulse of voltage (7000 – 6000 KVA with 1.5 – joules of energy) each second into the fence system, including the gates, and measures the voltage returning from the opposite end of the fence system for drops in voltage.

Should the returning voltage drop below 3000 volts for more than 3 seconds, the alarm will be activated. A drop in voltage may be caused by physical intrusion, the cutting of a wire, attempted shortout of wires in the fence system, or the forcing open of a gate.

**Fence System:**

The lower section of the fence utilises alternate high voltage and monitored earth wires that detect intruders should they attempt to either cut, short out, or increase the 125mm spread between insulated wires to create a crawl-through gap. Should any given wire be raised or lowered to within 1-2mm of a neighbouring wire, the alarm will be activated.

**Gates:**

Voltage is transferred from one gate to another by stainless steel contacts. The contacts include a built-in anti-tamper device that detects when gates have been left open when the system is set, or gates being forced open while the system is armed. The contacts are designed to foil the use of jumper leads being run across gateways to maintain fence voltage and continuity while gate locks are tampered with.



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## **ELECTRIC SECURITY FENCE SYSTEMS**

### **Background:**

Electric Security Fencing Limited introduced electrified security fences in their present form to Auckland in 1986.

The concept had been tested in the Auckland Courts in 1981. As a result, local bodies and councils were agreeable to installations in their constituencies provided the installer followed wiring regulations, used regulation warning signs and used equipment approved by the appropriate New Zealand Standards.

Since 1986 electrified security fencing as a method of property security has become increasingly popular and subsequently has a reputation as an effective deterrent to unauthorized persons intruding onto private property.

In 1990 Electric Security Fencing Limited was invited by the Ministry of Commerce to join a working party to draw up a Code of Practice for the construction and installation of electrified security fences.

The working party headed by The Chief Electrical Inspector, Mr. P.J. Morfee, drafted the code of practice in November 1990. The code was issued on the 29th November 1990 and approved by Mr John Luxton Minister of Energy on the 22<sup>nd</sup> January 1991.

The working party responsible for the preparation for the code comprised the following:

- Institute of Electricians.
- Electrical Manufacturers Federation.
- Electrical Contractors Federation.
- Electrical and Electronic Workers Union.
- Telecom New Zealand.
- Electrical Consultancy Services.
- Occupational Safety and Health.
- New Zealand Police.
- Ministry of Commerce.
- Chief Electrical Inspectors Office.
- Electric Security Fencing Limited.