



THE LAW AND ELECTRIC FENCING

**A Pocket, Ready-Reference to
the Legal Dos And Don'ts of
Electric Fencing In South Africa**

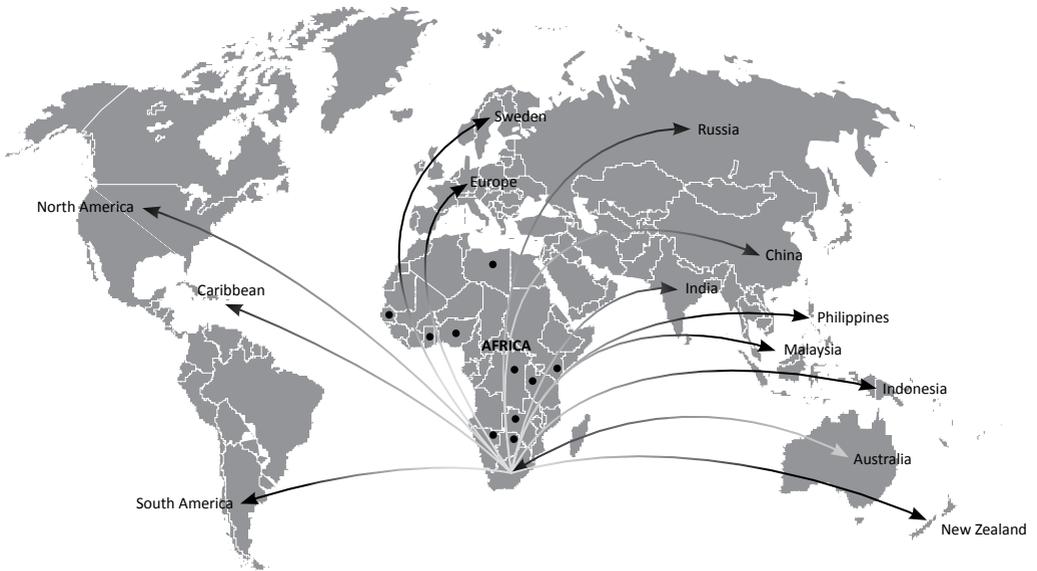
(Compiled August 2012)



Compliments of Ndlovu Fencing (Pty) Ltd
***Importers and Distributors of the Stafix and JVA Ranges of
Electric Fence Energizers***

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Introduction

On the 25th of March 2011 the Department of Labour promulgated certain amendments to the Electrical Machinery Regulations within the Health and Safety Act 1993 (Act No. 85 of 1993). Some of these amendments relate specifically to the electric fencing industry and are therefore relevant to any electric fence installer and end user.

What is the purpose of this Act?

The Act was promulgated to ensure the safety of the citizens of South Africa with regards to all electrical systems and appliances. Thus the section of the Electrical Machinery Regulations, 2011, to which this ready-reference refers, is meant to protect the public from receiving inadvertent and possibly dangerous shocks from badly sited or poorly erected electric fences. A second objective of this section of the regulations is to prevent radio, T.V. and telephone interference caused by non-compliant energizers, poor earthing, and other unacceptable installation practices. Thirdly, the Act aims to protect the consumer by specifying minimum fencing material quality standards.

It is the goal of this handbook to provide electric fence installers and end users with a condensed, easy-to-consult, explanation of the Act, its related regulations and the South African National Standards (SANS) relevant to the Act. This booklet does not profess to cover every aspect of the regulations as applicable to electric fencing as to do so would simply mean reprinting the Act and all the SANS regulations in full. It merely attempts to extract from the Act for your convenience what is most relevant to your daily activities to give you an easy-to-read reference.

Please note that at the time of compilation of this booklet the government structures for installer training are not yet in place and although the Act states in Clause 12 (4) that, as from the 1st October 2012, 'every user or lessor of an electric fence system shall have an electric fence certificate', there are at present no 'registered installers' available to issue these required certificates because there are as yet no registered training courses available for an installer to take in order to qualify as a registered installer.

The Act and Relevant SANS Standards and Codes of Practice Applicable to Non-Lethal Electric Fencing

The legislation covering the safety standard requirements for the manufacture of electric fence energizers and for the erection and installation of electric fence systems, as well as the laws relevant to installers, users, and lessors of such systems, is to be found under **Section 12 to 16 *Electric Fences***, in the Government Gazette of the Republic of South Africa:

Regulation Gazette No 9509, Vol. 549, published in Pretoria 25th March 2011, No. 34154

This Act then refers to a number of SANS Standards, namely:

SANS 60333–2-76:2006 Edition 2.1 *Household and similar electrical appliances – Safety Part 2-76 Particular requirements for electric fences.*

(This publication is basically the same as **IEC 60333-2-76: 2006 Edition 2.1** which is the internationally accepted safety standards document recognised by most countries around the world.)

These Standards lay down the stringent requirements that have to be met by manufacturers of non-lethal electric fence energizers in order to receive a certificate of compliance for their energizers. This certificate is important as the new Act requires that all non-lethal energizers now sold must have been tested and certified by an internationally recognised test laboratory confirming that they comply with these standards.

At the back of SANS 60333-2-76 there are some annexures relating to the installation of electric fence systems. These are the generally accepted international standards. However, due to the unusual security situation in South Africa which has resulted in a proliferation of non-lethal electric fences in urban areas, the Department of Labour has felt that it is necessary to add to these codes of practise. The result is:

SANS 10222-3:2011 *Electric security installations Part 3: Electric fences (non-lethal)* and **SANS 10222-4:2010 *Electric security installations Part 4 Electric fence energizers.***

These codes of practise relate to the installation of non-lethal electric fences. Again, at the time of releasing this booklet, **SANS 10222-4:2010**, which relates more specifically to the installation of security energizers and monitoring systems, has not yet been finalised. When finally approved it is intended that it will be incorporated into the SANS10222-3:2011 document.

The above are all the documents that relate to non-lethal electric fencing and are the ones we have endeavoured to condense and simplify for you.



Definitions from the Act and SANS Documents

'A registered person' means a person registered in terms of regulation 14 as an electric fence installer. In other words, s/he has passed the Department of Labour's requirements to become a registered installer and is in possession of a **Certificate of Registration** issued by the Department.

'Accreditation authority' means the South African National Accreditation System (SANAS).

'Circuit' means an arrangement of conductors for the purpose of carrying electrical energy.

'Conductor' means an electrical conductor so arranged as to be electrically connected to a source of electrical energy.

'Dead' means at or about zero potential and isolated from any positive wires.

'Earthed' means connected to the general mass of earth in such a manner as to ensure at all times an immediate safe discharge of electrical energy.

'Electric fence' means an electrical barrier consisting of one or more conductors erected against trespass of persons or animals.

'Electric fence energizer' means electrical machinery arranged so as to deliver a periodic non-lethal amount of electrical energy to an electric fence connected to it.

'Electric fence system' means an electric fence and an electric fence energizer.

'Bracket' means a device normally fabricated out of metal with attached fence insulators that can be attached to a building with the objective of supporting electric fencing wires.

'Bracket or pole facet' means a flat section on the electric fencing pole or bracket.

'Dynamic bracket or pole' means a bracket/pole that fulfils the function of a passive bracket and additional mechanical features/functions. (It may have an additional detection device built into it.)

'Partitioning' (Sectorisation) This means an electric fence installation that consists of one energizer connected to an electric fence which is then divided into sections for monitoring purposes. One energizer powers a zone, and the zone is then sectorised (partitioned).

'Urban Area' This means an area with an increased density of human-created structures and would include, but not be limited to, residential, business, industrial zoned areas. (Population density in an urban area would exceed 400 or more persons per square kilometres.)

'Public area' This means an area within a secure area to which any person can gain legal access without permission from the land owner or where members of the public are allowed to enter.

Requirements of the Act

The new regulations came into effect on the 1st of July 2011 and, as from the 1st October 2012, when the requirements for fence and installer certification will come into effect, the Act requires that:

1. You abide by these new regulations if you want to design, manufacture, sell, install or use an electric fence energizer;
2. The seller, importer, and manufacturer of an electric fence energizer **must be able to prove compliance with SANS 60335-2-76** by producing a certificate issued by an accredited test laboratory; (In South Africa, at this point in time, **Test Africa** is the only recognised local test laboratory.)
3. You make sure, if you are using auxiliary charging apparatus with your energizer, that it is double wound;
4. In the future every user of an electric fence system shall have a **Certificate of Compliance** (See Annexure 1) which proves that their installation complies with the law;
 - (i) This does not apply to fences that were erected prior to these new regulations coming into force; in other words prior to 1 October 2012, which is the date when installers are supposed to be registered. (As already mentioned, this is going to be difficult to enforce considering that there is as yet no training course available for installers.) Fences that were installed prior to this date must however have complied with the requirements of the old law, one requirement of which is that an electric fence has to be positioned so that the general public will not make 'inadvertent contact' with it. This clause has been flagrantly ignored by many installers and this could cause some problems in the future.
 - (ii) If an alteration or extension is made to an existing fence line, a certificate will have to be issued for the extension.
 - (iii) Any property sold after this date, (1st October 2012) will require a certificate of compliance. This certificate is similar to the electrical certificate currently issued by electricians for the electrics of premises.
5. **Only a registered person** may issue an electric fence system **Certificate of Compliance** i.e. an installer who has passed the Department of Labour's examinations and is in possession of a **Certificate of Competence**.

To summarise: The new Act requires that any electric security fence system, installed after the 1st October 2012, must have certification showing that it complies with all the requirements of the new Act and the end user must be issued with a **Certificate of Compliance**.

This certificate can be issued only by a registered person who has been approved by the chief inspector and who has been issued with a **Certificate of Registration**.

This brings us to the question – How does one become a registered electric fence installer?

How Does One Become a Registered Electric Fence Installer?

The Electrical Machinery Regulations 2011 promulgated under the Occupational Health and Safety Act (Act. No. 85 of 1993) state:

Application for registration as registered person

14 (1) 'Application for registration as a registered person shall be made to the chief inspector in the form of Annexure 2 (see page 12) and shall be accompanied by the registration fee prescribed by regulation 23. (The current fee is R120.00 and the address of the chief inspector is: Department of Labour, Occupational Health and Safety, PB X117 Pretoria 0001)

(2) Any natural person who satisfies the chief inspector that he or she has sufficient knowledge of the safety standards applicable to electric fence systems may be registered by the chief inspector as a registered person.

(3) The chief inspector shall furnish a registered person with a certificate of registration, and enter such registration into the national database.

(4) A registered person shall on request produce his or her certificate of registration to any inspector and any supplier or any person for whom he or she intends to install an electric fence system and issue an electric fence certificate.

However, at present (September 2012) there is no recognised governmental course for an installer to attend and no examinations that they can take which will enable them to be recognised as a competent installers ('registered person'). Interim measures are being put in place by the government in order to meet the requirements of the regulations and will involve the co-operation of those companies that regularly run training courses in Basic Electric Fence Installation.

It is envisaged that there will be *Theory* and *Practical* sections to the training and testing. For those installers who have years of experience in the field there will be *Recognition of Prior Learning (RPL)* which for them will short circuit some of the learning and testing. For those who are new to the industry, a third section is envisaged – *Experiential Learning* which will require a period of Internship.

Withdrawal of Registration

If a Registered Person fails to comply with the new laws s/he can have their certificate revoked. They will however first be warned and after due process, if they fail to respond to the inspectors requests, their certificate can be revoked. If the installer feels s/he has grounds to appeal they can do so.

The Act then goes on to list the penalties for people contravening the Act: basically imprisonment for up to 12 months, and in the case of continuous offence, an additional fine of R200 (current) per day up to three months.

Safety and Installation Requirements of the SANS standards

The following are the most important points extracted from the SANS codes of practice that an installer must observe when erecting and installing an electric security fence system.

A Planning Principles

1. Because electric fences have the potential to cause electromagnetic interference on communication lines, cognisance must be taken of the location of any communication lines when planning an installation. Always keep the distance between the electric fence and communication lines as far as possible.
2. Do not install an electric fence around communication poles or in a way that it could cause a safety hazard to the employees of the communication company.
3. It is good practise not to have the top wire on an electric fence electrified where a communication line runs above and parallel to the fence.

B The Energizer

1. As required by the Act, the energizer must comply with SANS 603335-2-76 and the supplier of the product must be able to produce a certificate issued by an internationally recognised laboratory to verify this.
2. You may not put more than one energizer on the same fence-line.
3. In urban areas (population exceeds 400 per Sq. Km) the electric fence energizer output shall be limited to a maximum of 8 joules under any load condition.
4. There must be a 2.5m distance between adjacent electric fences fed from separate energizers. If this gap is to be closed, this shall be effected by means of electrically nonconductive material or an isolated metal barrier.
5. A vertical separation of not less than 2m shall be maintained between pulsed conductors fed from separate energizers.
6. If two electric fences are closer together than 2.5m, and there is no insulating barrier between them, the energizers feeding the two fences must be synchronised.
7. You may not electrify barbed or razor wire with an energizer.
8. The energizer must be installed in such a position as to be out of reach of children and in a dry, dust free environment.
9. The energizer should be operated only by persons competent to do so.

C Earthing

1. Earth electrodes shall be a minimum of 1,2 meters long with a minimum diameter of 10mm.
2. Earth electrodes shall be manufactured out of galvanised steel, copper, or stainless steel. (We recommend hot-dipped galvanized steel as this will prevent electrolysis when connected to galvanized wire.)
3. Three earth electrodes shall be installed in close proximity to the electric fence energizer and be a minimum distance of the earth spike's length from each other. The earth electrodes must all be linked together.
4. On security fences additional earth stakes should be inserted at a maximum distance of 30 meters apart.
5. On game, strip grazing, and general agricultural fences additional earth electrodes should be inserted at a maximum distance of 100 meters apart, measured from the energizer.
6. Earth electrodes shall be inserted vertically into the ground. If the ground is rocky they can be inserted at a maximum angle of 45 degrees.
7. All the earth wires of an electric fence must be connected together when connected to an earth electrode.
8. The wire connecting the earth electrode must be of a similar, or of a thicker diameter, than the fence wires.
9. The energizer's earth electrodes should be at least 2 meters away from any other earth systems, e.g. Eskom, Telkom, etc.) However, the standard then goes on to say that this distance should preferably be at least 10m.
10. To test if the energizer earth is adequate, apply the following test. (Still in draft stage with SANS 102224 2010). Create a short on the fence line that is sufficiently severe to reduce the voltage on the fence line to below 2,000 volts. Then install another earth spike and measure the voltage between the existing earth system and the newly installed earth electrode. If the voltage reading exceeds 300 volts, the system requires additional earth electrodes.

D Lead-Outs

An insulated fence high tension cable shall not run:

1. In the same trench or wire-way with a mains A.C. current supply;
2. In the same wire-way with cables or wires of telecommunication, radio or signalling circuits;

3. Where it is likely to be damaged by corrosive liquids;
4. Within 150mm of hot surfaces if heat is likely to damage it (hot water pipes);
5. Where it is likely to be damaged unless mechanically protected.
6. Connecting leads that are run inside a building shall be effectively insulated from the earthed structural parts of the building. (Use insulated HV cable.)

E Barrier Fences

The general public should be protected by a barrier fence from making inadvertent contact with a free-standing (stand-alone) electric fence.

The barrier fence must have the following features:

1. A minimum height of 1500mm;
2. At least one dimension in any opening should not be greater than 130mm;
3. The separation between the electric fence and the barrier fence should be:
 - (i) within the range of 100mm to 200mm or greater than 1000mm where at least one dimension in each opening of the physical barrier is not greater than 130mm
 - (ii) Greater than 1000mm where any opening in the physical barrier has all dimensions greater than 50mm

F Minimum Clearance from Power Lines for Electric Security Fences

Power line voltage V	Clearance M
Less than or equal to 1,000	2
1,000 and less than 33,000	4
Greater than 33,000	8

If connecting leads and electric fence security wires are installed near overhead power lines, their height above ground shall not exceed 3m.

G Joints and Terminations

To ensure good electrical contact and carrying capacity and to avoid any communication interference, it is mandatory that all joints must be clamped either using ferrules, line clamps or soldered.

H Warning Signs

The following regulations apply:

1. Size shall be at least 100mm × 200mm;
2. Background colour on both sides shall be yellow;
3. A symbol of a black hand touching a wire with flashes (See Figure 1);
4. Warning signs must be placed in clearly visible positions and **1.5 to 2m above ground level**;
5. Not more than **200mm from each corner or bend** in a straight length of fence;
6. Shall be displayed **on an access gate** if present, and not more than **200mm on either side of access area** on which an electric fence is erected;
7. Spacing between warning signs must not exceed **10m apart in urban areas**;
8. Spacing for warning signs on **game and rural agricultural fences should not exceed 100m**.

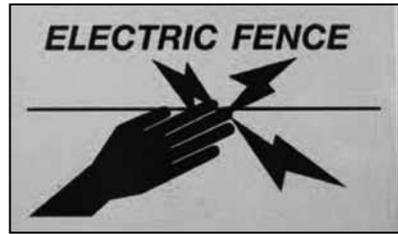


Figure 1: *Symbol for a non-lethal electric fence warning sign*

L Lightning Arrestors

A lightning arrestor must be attached as close to the connection from the energizer and the electric fence as possible, and in the case of a security energizer, two arrestors must be used. (One on the out-put wire and one on the return wire.)

J Wall-Top Fencing

1. A wall-top fence must be at least 1500mm above walking ground level.
2. Wall-top brackets are to be installed at a maximum of 3000mm apart.
3. The maximum distance between wires on the bracket must be 100mm.
4. Strain brackets must be adequately stayed.
5. Fastening devices must penetrate a minimum of 50mm into the supporting wall.

K Free-Standing Electric Fence (Stand-Alone)

A free-standing electric fence shall not be installed in a public area unless the lowest wire of its live strands is 1500mm above walking ground level or the public are protected from inadvertent contact with the fence by a barrier fence with a minimum height of 1500mm. (See Figures 2, 3 and 4)

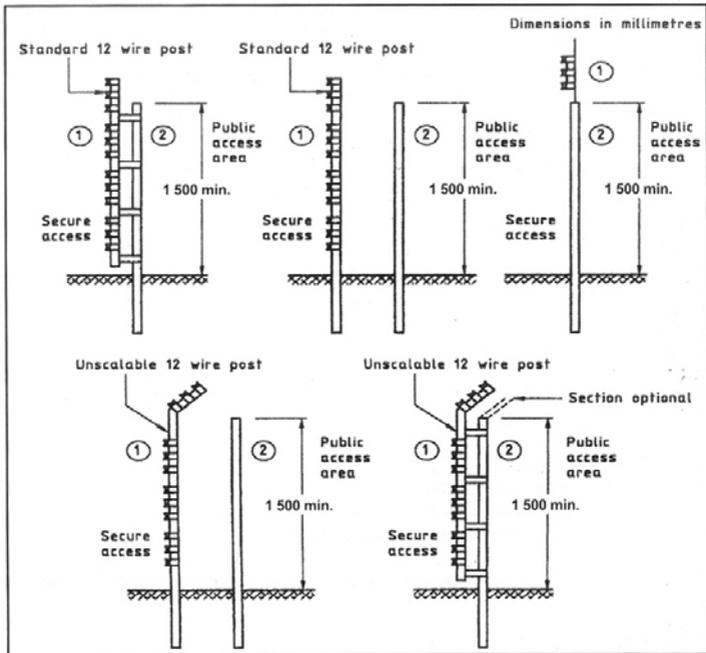


Figure 2: Typical constructions where the electric security fence is exposed to the public.

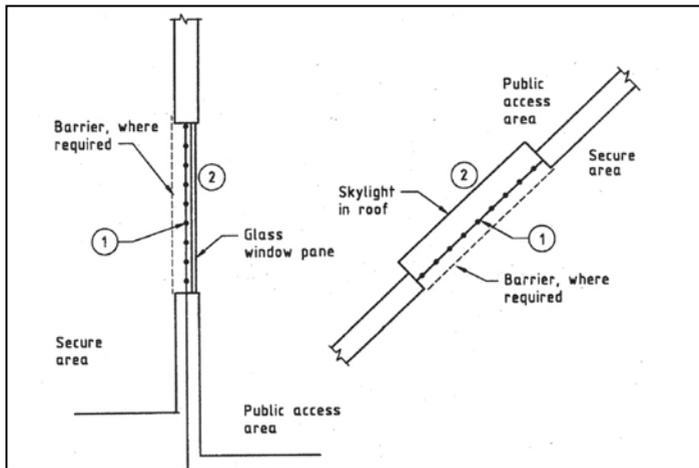


Figure 3: Typical fence constructions where the electric security fence is installed in windows and skylights.

Key: ① Electric security fence ② Physical barrier

Conclusion

As stated at the beginning, this summary or ready reference does not presume to cover every aspect in the gazetted legislation and SANS standards. It is recommended, that every registered installer of security electric fencing systems be in possession of a copy of the Act and of the SANS standards mentioned in this document.

In the SANS standards there are also special specifications for Pet Control fences, Strip Grazing, Game Control fences and general Agricultural fences but as these are mostly, with the exception of game fences, DIY installations, they are not included in this summary as they are adequately covered in the literature that accompanies these products when they are purchased.

We hope that this little pocket book will be of use to you as a ready reference in the field.

Should you require further information please do not hesitate to contact us at any one of our Stafix Electric Fence and Security Centres.

Annexure A

Annexure 1

DEPARTMENT OF LABOUR

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993

ELECTRIC FENCE SYSTEM CERTIFICATE OF COMPLIANCE



Electric Fence System Certificate of Compliance in accordance with regulation 12(4) and 13(1) of the Electrical Machinery Regulations, 2011.	Certificate No.	
	Certificate Type (Tick appropriate block)	
	Initial Certificate	
Supplement No. to Initial Certificate No. as issued on:		
Identification of the relevant installation (Address or other unique reference, where applicable)		
Physical address:		
Name of premises: GPS Coordinates: Suburb/Township: Pole number: District/Town/City: Erf/Lot No.:		

Declaration by registered electrical fence installer

I _____ (ID No. _____),
 a registered electric fence system installer, declare that I have personally carried out the
 inspection and testing of the electric fence system described above as per the
 requirements of regulation 13(1), and deem the installation to be reasonably safe when
 properly used.

Registered person registration number: Date of registration

Signature:

Date:

Contact details of registered
 person:

Tel No. _____

Fax No. _____

Cell No. _____

Email _____

Address

.....

.....

.....

Declaration by user or lessor

I declare that I am aware of my responsibilities in terms of regulation 12 of the Electrical
 Machinery Regulations and undertake to operate and maintain the electric fence system
 in a safe manner.

Recipient Name: Signature: Date:

Annexure B

Annexure 2

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO. 85 OF 1993) REGULATION 14(1) OF THE ELECTRICAL MACHINERY REGULATIONS

APPLICATION FOR REGISTRATION AS AN ELECTRIC FENCE SYSTEM INSTALLER

The Department of Labour
Occupational Health and Safety
Private Bag X117
Pretoria
0001

R120,00

Surname (block letters):
First names (block letters):
Postal address:
Code:
Telephone Nos.: (W) (H)
(Fax) (Cell)
Date of birth: Place of birth:
Identity number (immigration permit number):
A certified copy of electric fence system installer proficiency must be attached.

Two clear identical unmounted photographs of 40 mm by 30 mm showing the face and shoulders of the applicant to be submitted. One photograph to be certified on the back as follows:

I certify this to be a true photograph of.....

.....
Signature of Magistrate, Justice of the Peace or Commissioner of Oaths
Date

I hereby declare that the above particulars are, to the best of my knowledge and belief, correct.

Signature of applicant: Date:

SPECIMEN SIGNATURE OF APPLICANT

Note - The specimen signatures should be the normal signature of the applicant and should be carefully completed. One specimen will be affixed to any certificate of registration that may be issued.

1	2	3



Annexure C



WCT (PTY) LTD T/A T.E.S.T. Africa
reg #: 2000/024600/07
vat reg #: 4620192684

Room S166, Building 33
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Pretoria

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Menlopark
Pretoria, 0102
South Africa



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Tel.: (+27 12) 349 1145

Fax.: (+27 12) 3491249

E-mail: info@testafrica.co.za

Internet : <http://www.testafrica.co.za>



Test Report

IEC 60335-2-76: Particular requirements for electric fence energizers

Safety of household and similar electrical appliances

REPORT # : WCT 10/1472

CLIENT:

Ndlovu Fencing (Pty) Ltd T/A JVA Technologies

PO Box 13898

Cascades

3202

Attention: Mr S Williamson/ V Vertuin

Order #: JVAZI3ZI8Z28

Date of Order: 2010-11-16

SAMPLE:

Fence Energiser

TEST SPESIFICATION:

SANS 60335-2-76:2006 & IEC 60335-2-76:2002 & AI:2006

SANS 60335-1:2007 & IEC 60335-1:2006

SUMMARY OF RESULTS:

Complied

DATE STARTED:

2010-11-16

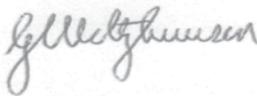
DATE COMPLETED:

2010-12-14

DATE PF ISSUE:

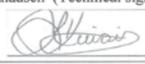
2010-12-14

TESTED:



GH Holtzhausen (Technical signatory)

APPROVED:



LP Kuisis

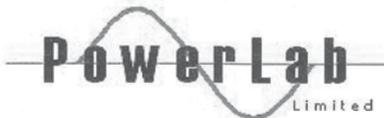
NOTE:

"The South African National Accreditation System (SANAS) is a member of the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA). This Arrangement allows for the mutual recognition of technical test and calibration data by the member accreditation bodies worldwide. For more information on the Arrangement please consult www.ilac.org.



Annexure D

Report Number: PL2008039/ASNZS



Test Report

DATE ISSUED: 24 February 2009

ITEM(S) TESTED: JVA Technologies
Type D electric fence energizer
model Z14

CLIENT'S NAME: Pakton Technologies
1 Helium Street
PO Box 408
Narangba QLD 4504
AUSTRALIA

Attention: Paul Thompson

CLIENT'S REFERENCE: Purchase Order: 00009533

TEST SPECIFICATION: AS/NZS 60335.2.76:2003 (with amendment AMD 1/2006-10-20)
Household and similar electrical appliances - Safety - Part 2.76: Particular requirements for electric fence energizers
(In conjunction with AS/NZS 60335.1:2003 with amendments AMD1/2004-05-31, AMD2/2007-05-25) and AMD3/2007-11-30)

DATE OF TEST COMPLETION: 24 February 2009

SUMMARY OF RESULTS: The sample energizer complied with the requirements of the test specification.



All tests reported herein have been performed in accordance with the Laboratory's terms of registration
Laboratory Registration Number: 42

IANZ Signatory: G I Dix

Checked By:

K Manson

PowerLab Limited, PO Box 31034 Christchurch 8444 New Zealand, 5 Sheffield Crescent Christchurch New Zealand, Info@powerlab.co.nz. This Report must not be quoted except in full



Annexure E

SGS

Certificate No: SGS/100387

CERTIFICATE OF COMPLIANCE

This certificate is issued to confirm that **SGS Systems & Services Certification Pty Ltd** (Electrical Product Certification Services (EPCS) Australia) as accredited by JAS-ANZ in accordance with ISO/IEC Guide 65 has certified the equipment / appliance / accessory described hereunder to comply with the minimum safety standards for which the Application has been made by :-

TRU-TEST LIMITED
25 Carbine Road
Mt Wellington, Auckland 1060
NEW ZEALAND

DESCRIPTION OF ELECTRICAL EQUIPMENT

Class:	Fence Energiser
Product:	Mains-operated Electric Fence Energiser
Trade Name / Manufacturer:	Speedrite, Stafix or PEL
Catalogue / Model No(s):	83000R, M63R or 863R
Ratings:	220-240 V a.c.; 50-60 Hz; 64 W; IP44; Class II
Standard No.:	IEC 60335-2-76 Edition 2.1b with IEC 60335-1 Edition 4.2b

MARKING: SGSE/100387

EXPIRY DATE: 11 July 2015

DATE OF CERTIFICATION: 12 July 2010

JAS-ANZ



www.jas-anz.org/register

For and On Behalf of
SGS Systems & Services Certification Pty Ltd



SGS EPCS Australia, 480 Princes Highway, NOBLE PARK, VIC 3174, AUSTRALIA

original design and/or logos placed printed by best quality printing ink on cardboard



THE JVA Z RANGE ENERGIZER CONCEPT

The JVA Range of Energizers has been collaboratively designed and manufactured by an international team with over 30 years of electric fence experience earned in some of the most testing security environments in the world. It aims to provide the very best low-cost, high-voltage security energizers. They are compact, integrated and fully programmable energizers with built-in alarm units and LCD *out* and *return* voltage display. They also have the option of being controlled from a remote LCD keypad.

State-of-the-art energizer design IP4 x and ABS plastic

Unique LCD display depicting fence out and return voltage



The ZM 20 Monitor Enables electric fence division into 20 programmable sectors



Unique LCD keypad option depicting fence and alarm condition



Wall-mountable, robust energizer housing with easily detachable PCB chassis for ease of installation and repair

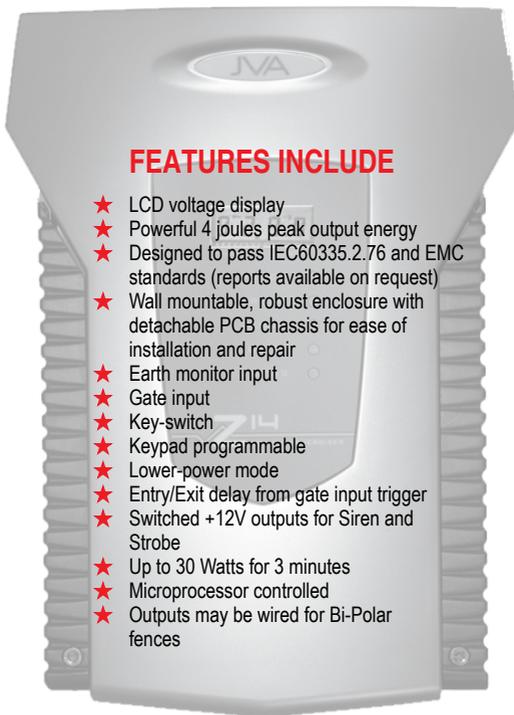


All JVA products carry a 2-year warranty.

Z-RANGE



**Z14 STANDARD
ENERGIZER**



FEATURES INCLUDE

- ★ LCD voltage display
- ★ Powerful 4 joules peak output energy
- ★ Designed to pass IEC60335.2.76 and EMC standards (reports available on request)
- ★ Wall mountable, robust enclosure with detachable PCB chassis for ease of installation and repair
- ★ Earth monitor input
- ★ Gate input
- ★ Key-switch
- ★ Keypad programmable
- ★ Lower-power mode
- ★ Entry/Exit delay from gate input trigger
- ★ Switched +12V outputs for Siren and Strobe
- ★ Up to 30 Watts for 3 minutes
- ★ Microprocessor controlled
- ★ Outputs may be wired for Bi-Polar fences



**LCD ENERGIZER
OUT AND RETURN
VOLTAGE DISPLAY**



**Z14 BI-POLAR
ENERGIZER**



UNIQUE LCD KEYPAD DISPLAY



**OPTIONAL LCD
KEYPAD**



STAFIX ELECTRIC FENCE CENTRES



Bloemfontein

Kolbe Laan 36
Oranjesig, Bloemfontein 9300
Tel: 051 448 6695/6
Fax: 051 448 6698

Cape Town

Unit 15, Viking Business Park
Viking Way, Epping Industria
Tel: 021 534 5056
Fax: 021 534 5755

Durban North

Shop 11, Arcadia Centre
87 Umhlanga Rocks Drive
Tel: 031 563 0274
Fax: 031 563 6045

East London

Shop 3, Paphos Park
Devereaux Avenue
Tel: 043 726 6652/60
Fax: 043 726 6648

East Rand (Jet Park)

14 Kelly Road
Jet Park, Boksburg
Tel: 011 3973507
Fax: 011 397 7610



George

Shop 1, 57 York Street
George
Tel: 044 874 0669
Fax: 044 874 0670

Kimberley

29A Schmidtsdrift Road, Rhodesdene
Kimberley 8301
Tel: 053 861 5631
Fax: 053 861 5630

Nelspruit

D1 Waterfall Park, 15 Rapid Street
Riverside Industrial Park, Nelspruit
Tel: 013 752 7152
Fax: 013 755 3048

North Rand (Kya Sand)

174 Bernie Street
Kya Sand, Randburg
Tel: 011 708 6442
Fax: 011 708 6443

Pietermaritzburg

51 Winston Rd
Pietermaritzburg
Tel: 033 342 6727
Fax: 033 342 6765

Pinetown

Unit 1, 7 Suffert Street
Pinetown
Tel: 031 702 6351
Fax: 031 702 6352

Polokwane

19A Suez Street
Nirvana, Polokwane
Tel: 015 292 6273
Fax: 015 292 6274

Port Elizabeth

45 Mangold Street
Newton Park, Port Elizabeth
Tel: 041 365 7178/9
Fax: 041 365 7176

Pretoria

977 Voortrekker Road
Wonderboom South, Pretoria
Tel: 012 335 4290
Fax: 012 335 4215

Vanderbijl Park

18 Fairbank Street
NW7, Vanderbijl Park
Tel: 082 783 8449
Fax: 011 397 7610

West Rand (Roodepoort)

602 Ontdekkers Road
Delaréy, Roodepoort
Tel: 011 472 8823
Fax: 011 472 6673



Nearest branch: 0861 782349 / 0861STAFIX

Website: www.stafix.co.za

e-mail: Gauteng – efc@stafix.co.za; KZN – ndlovu@stafix.co.za